



April 16, 2018

(via email)

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New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C
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Re: Soil Vapor Intrusion Investigation Report
Avery Dennison Corporation – Former Paxar Facility
NYSDEC Site No. 344072
Orangeburg, Rockland County, NY

Dear Mr. Lanners,

The Johnson Company (JCO) prepared the enclosed Soil Vapor Intrusion Investigation Report to summarize the findings of a recent indoor air and soil gas sampling investigation completed at your request during a meeting on August 8, 2017. In late January/early February 2018, JCO completed the sampling event following the shutdown of manufacturing operations, and the facility is currently vacant.

Under winter conditions when the vapor recovery/thermal oxidizer system was shut down, the concentrations of chlorinated volatile organic compound (VOC) in indoor air fell into the “no further action” category in NYSDOH decision matrices. Furthermore, during the past three years, VOC concentrations in indoor air have not exceeded or approached NYSDOH Indoor Air Guidelines or USEPA’s risk-based Soil Vapor Intrusion Screening Levels, and the recent soil gas results were similar to historical values.

Our goal is to sell the vacant property this summer. Activities to close a recently-removed underground tank farm are underway. For the historical chlorinated solvent investigation, we respectfully request NYSDEC issue a letter indicating no further action is required to address indoor air quality or soil vapor intrusion.

My predecessor, Bruce Martin, retired earlier this year. I will reach out to you next week to introduce myself, and to find out if you have any questions or comments about the enclosed report. If you have any immediate questions or comments, please do not hesitate to contact me at (440) 534-4734.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Gallagher', written over a light blue horizontal line.

Paul Gallagher
Global Manager, Remediation
Avery Dennison Corporation

cc: Chris Turner, The Johnson Company

Enclosure: Soil Vapor Intrusion Investigation Report – April 2018

SOIL VAPOR INTRUSION INVESTIGATION REPORT

**Avery Dennison Corporation Facility
524 Route 303
Orangeburg, Rockland County, New York**

NYSDEC Site No. 344072

Prepared for:

**Avery Dennison Corporation
8080 Norton Parkway
Mentor, Ohio 44060**

Project Number 1-0145-15

April 2018

Prepared by:



**ENVIRONMENTAL SCIENCE AND
ENGINEERING SOLUTIONS**

**PARTNERS FOR SMART THINKING
AND CREATIVE STRATEGIES**

SOIL VAPOR INTRUSION INVESTIGATION REPORT

**Avery Dennison Corporation Facility
524 Route 303
Orangeburg, Rockland County, New York**

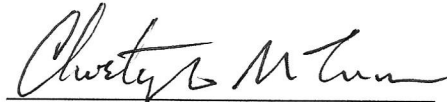
NYSDEC Site No. 344072

**Prepared for:
Avery Dennison Corporation
8080 Norton Parkway
Mentor, Ohio 44060**

**Prepared by:
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100 State Street, Suite 600
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**Project No.: 1-0145-15
April 2018**

I, Christopher M. Turner, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.


Christopher M. Turner

4/13/2018
Date Signed

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EXECUTIVE SUMMARY

Pursuant to NYSDEC's September 2017 request, and following shutdown of manufacturing (coating) operations and an associated vapor collection system, The Johnson Company, Inc. (JCO) performed additional monitoring of soil vapor, indoor air, and outdoor ambient air at the Avery Dennison Corporation (ADC) facility located at 524 Route 303 in Orangeburg, New York (the Facility). This investigation was performed during the winter heating season and expanded upon two previous sub-slab soil vapor and indoor air sampling events performed in 2016 and 2017.

In accordance with an NYSDEC-approved Work Plan and NYSDOH (2006) vapor intrusion guidance, JCO collected one (1) outdoor air, 11 indoor air, and 11 sub-slab soil vapor time-integrated samples over an eight-hour period, representing a typical work day, during the winter heating season. Samples were analyzed for 10 volatile organic compounds (VOCs) that were selected based on results from sub-slab soil vapor sampling performed at the Facility in 2008, and a groundwater investigation conducted from 2007 to 2014. A vapor collection system and associated thermal oxidizer formerly operated to support manufacturing at the Site but was permanently shut down six weeks before soil vapor and air sampling was performed.

Results were consistent with historical findings discussed with NYSDEC on August 8, 2017. During the recent event, no VOC analytes were detected in indoor air samples at concentrations exceeding NYSDOH Indoor Air Guidelines or United States Environmental Protection Agency (USEPA) risk-based screening levels. And, all results for sub-slab samples fall into the 'no further action' category on NYSDOH soil vapor intrusion decision matrices, with the exception of one single analyte (trichloroethene - TCE) in one single soil vapor sample, which fell into a 'mitigate' status according to the matrix. TCE was not detected in any of the indoor air samples collected over three years of monitoring, and none of the analytes were previously detected in soil or downgradient groundwater above applicable standards; therefore, these results support that a significant source of VOCs is not present beneath the Facility, soil vapor intrusion is not impacting indoor air quality above applicable screening levels, and continued monitoring of sub-slab soil vapor and indoor air is not warranted.

Results from soil, groundwater, soil vapor, and indoor air sampling indicate there is not a significant source of NYSDOH Matrix VOCs present beneath the Facility with the capacity to impact indoor air quality above NYSDOH or USEPA screening criteria.



1.0 INTRODUCTION

This Soil Vapor Intrusion Investigation Report was prepared by The Johnson Company, Inc. (JCO) for the Avery Dennison Corporation (ADC) facility at 529 Route 303 in Orangeburg, Rockland County, New York (the Site; see Figure 1-1). The investigation described herein was performed at the request of NYSDEC and expands upon previous sub-slab soil vapor and indoor air sampling performed in the Facility in 2016 and 2017. This investigation includes additional sampling locations in the manufacturing area and a soil vapor and indoor air monitoring event that was performed during the winter heating season when the Facility vapor collection system was not operating. The investigation was performed during the period from January 29 to February 1, 2018, as described in the Soil Vapor Intrusion Investigation Work Plan (the Work Plan; JCO, 2017b) approved by New York State Department of Environmental Conservation (NYSDEC) on January 23, 2018.



2.0 SITE DESCRIPTION AND HISTORY

2.1 Background

A 55,000 square-foot now-vacant facility (the Facility) is situated at the 8.3-acre Site and contains office, warehouse, and manufacturing space (see Figure 2-1). Former manufacturing operations at the Facility consisted of fabric coating and associated finishing operations, including ironing, slitting, cutting, and tubing of fabric in preparation for off-site label printing. Supporting warehousing, facility maintenance, shipping/receiving, and office operations were also performed at the Facility. ADC's operations at the Facility were phased out between December 2017 and March 2018.

Prior to the phase out of activities, the Facility operated as a Large Quantity Generator of hazardous waste; its waste streams included spent coatings (solvent and water-based) and waste solids (i.e., drum liners, rags, etc.). Chemicals formerly used at the Facility include solvents, solvent-based coatings and coating additives, lubricant and machining oils, and maintenance and cleaning supplies. Three solvents were used in bulk quantities at the Facility and were stored in three registered underground storage tanks (USTs): methyl ethyl ketone (MEK) (10,000-gallon UST), toluene (10,000-gallon UST), and isopropyl alcohol (5,000-gallon UST). The USTs were installed in the northwestern portion of the Site in 1998 and were removed in January 2018.

The Facility was reportedly constructed in the 1950s or 1960s and was previously occupied by Spencer Packaging Company and Paxar Corporation (Paxar) (ERM, 2008a). A June 6, 2006 United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) database record for the Site lists chlorinated solvents tetrachloroethene (PCE), trichloroethene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA) as components of hazardous wastes historically generated at the Site (ERM, 2008a; 2008b). ADC personnel described the use of chlorinated solvents after the 2007 purchase of the Site from Paxar as limited to small quantities within a laboratory setting (ADC, 2008; 2016).

ADC purchased the Site from Paxar in 2007 and continued to use the Facility for the coating and finishing of fabrics until December 2017. Fabric coating operations and an associated vapor collection system and regenerative thermal oxidizer (RTO) were permanently shut down on December 19, 2017, approximately six weeks before the work described in this report was performed. Finishing operations, including cutting and packaging of fabrics, were permanently shut down in March 2018.

2.2 2007 – 2014 Environmental Investigations

During the period from 2007 through 2014, ADC conducted an environmental investigation at the Site that included a Phase I environmental site assessment followed by collection and analysis of soil, groundwater, and sub-slab soil vapor samples and hydrogeologic characterization. Environmental sampling locations are shown on Figure 2-1. Phase I assessment findings identified volatile organic compounds (VOCs) as the primary potential constituents of concern at the Site. The VOCs used in the largest quantities at the Facility from the onset of coating operations in the 1970s until coating operations ceased in December 2017 were MEK, toluene, and isopropyl alcohol.

Investigation results showed VOCs in soil surrounding the Facility at concentrations below NYSDEC Soil Cleanup Objectives (SCOs) for unrestricted use. Groundwater monitoring performed over a period of seven years, from 2007 to 2014, showed only three VOCs detected at concentrations above New York State Ambient Water Quality Standards (AWQS) - 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethene (1,1-



DCE), and 1,1,1-TCA – those detections occurred at locations outside the northwestern corner of the Facility, in the immediate vicinity of former USTs (removed in 1998) and former scupper drains identified as areas of potential concern by the Phase I site assessment. Concentrations of those compounds in groundwater did not show increasing trends over seven years of monitoring and were not detected in downgradient (southeastern) monitoring wells at concentrations exceeding AWQS.

In November 2008, four chlorinated VOCs that are included in current NYSDOH soil vapor intrusion decision matrices were detected in sub-slab soil vapor samples collected beneath the Facility: trichloroethene (TCE) and carbon tetrachloride from Matrix A; and PCE and 1,1,1-TCA from Matrix B (NYSDOH, 2006; 2017). PCE was detected in a greater number of samples and at higher concentrations than the other NYSDOH Matrix compounds (JCO, 2017c). The 2008 results showed concentrations of those constituents in sub-slab soil vapor were highest beneath the western (manufacturing) portion of the Facility and generally decreased in an eastward direction toward the non-manufacturing portion of the Facility.

In April 2015, ADC submitted a draft Environmental Investigation Report with results from the 2007 to 2014 investigations to NYSDEC. At the request of NYSDEC, the Environmental Investigation Report was finalized and, on October 19, 2017, NYSDEC responded with a letter to ADC stating that no further remedial action will be required to address soil conditions, and “there is no need for further remedial action to address the on-site groundwater conditions at this time” (NYSDEC, 2017).

2.3 2016-2017 Soil Vapor Intrusion Investigation

Subsequent to ADC’s submittal of the draft Environmental Investigation Report in 2015, NYSDEC requested additional investigation of the soil vapor intrusion pathway. ADC performed that additional investigation in 2016 and 2017 (JCO, 2016a, 2016b, 2017a). The 2016-2017 vapor intrusion investigation included four co-located sub-slab soil vapor and indoor air sampling locations in the office area of the Facility, and one location in the manufacturing area where the TCE concentration in sub-slab soil vapor was highest in 2008. Concurrent soil vapor and indoor air sampling was performed during the winter heating season in 2016 and again in 2017; that sampling was performed during periods of typical Facility use, during which a vapor collection system was operating in the manufacturing area. When operating, the vapor collection system extracted approximately 25,000 to 30,000 standard cubic feet per minute (SCFM) of air from the vicinity of selected manufacturing equipment for treatment by a regenerative thermal oxidizer (RTO) located outside the southern exterior of the Facility (JCO, 2016b). In 2017, the vapor collection system at the Facility was operated approximately 40 to 80 hours over a period of 5 to 6 days in a typical week, which equates to about 25 to 50 percent operational up-time (JCO, 2017b).

Table 2-1 and Figure 2-2 show results from concurrent sub-slab soil vapor and indoor air monitoring performed in March 2016 and January 2017. VOC concentrations detected in sub-slab soil vapor and indoor air were below current USEPA risk-based screening levels during both monitoring events. With respect to the current NYSDOH soil vapor intrusion decision matrices, the March 2016 results fall into the “no further action” category or are inconclusive¹, with the exception of carbon tetrachloride, which was detected in three of the five indoor air samples and in the corresponding outdoor ambient air sample at concentrations above the lowest NYSDOH Matrix A concentration threshold of 0.2 micrograms per

¹ Inconclusive NYSDOH matrix comparisons include TCE at location IA-1, and carbon tetrachloride and vinyl chloride at location IA-3. These compounds were not detected in the indoor air samples; however, laboratory reporting limits were greater than the lowest “no further action” concentration bracket in the applicable NYSDOH matrix.



kilogram ($\mu\text{g}/\text{m}^3$). In January 2017, carbon tetrachloride was also detected in one indoor air sample and in the corresponding outdoor air sample, but at concentrations that fall into the “no further action” matrix category. Indoor air samples collected from location IA-5 on both sampling dates had elevated detection limits due to the presence of non-target analyte solvents (e.g., toluene, MEK, and isopropyl alcohol) from the manufacturing process at the time of sampling; therefore, applying the IA-5 results to the NYSDOH matrices is not conclusive for most analytes.

On August 9, 2017, ADC and JCO met with NYSDEC and NYSDOH to discuss regulatory closure for the Site. In a September 22, 2017 letter to ADC, NYSDEC requested the soil vapor intrusion investigation be expanded to include additional sampling locations in the manufacturing area and a soil vapor and indoor air sampling event to be performed during the winter heating season when the Facility vapor collection system was not operating. The following sections of this report present results from the expanded SVI Investigation requested by NYSDEC.



3.0 INVESTIGATION SCOPE AND METHODS

JCO performed the soil vapor intrusion investigation at the Facility as described in the Work Plan (JCO, 2017b), during the period from January 29 to February 1, 2018. The investigation procedures are consistent with the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (the NYSDOH soil vapor intrusion guidance; NYSDOH, 2006; 2017), and are described in the following sections.

3.1 Building Survey

JCO performed a building use survey and made observations of conditions potentially relevant to indoor air quality in the manufacturing and non-manufacturing portions of the Facility, as described in NYSDOH soil vapor intrusion guidance (NYSDOH, 2006; 2017). Specifically, JCO conducted a site walk-over with an ADC representative familiar with Facility operations. JCO interviewed the ADC representative regarding Facility heating, ventilation, and air conditioning (HVAC) systems. In addition, JCO inquired about the presence of products containing VOCs within manufacturing and non-manufacturing portions of the Facility. Non-manufacturing areas include laboratory areas, restroom facilities, break rooms, and office space in the eastern portion of the Facility (see Figures 3-1 and 3-2).

JCO's observations and information obtained from Facility personnel were recorded on the NYSDOH Indoor Air Quality Questionnaire and Building Inventory Form (NYSDOH, 2015) – see Appendix A. A list of materials used or stored at the Facility was prepared by JCO based on information provided by Facility personnel – see Appendix B. Based on JCO's review of available safety data sheet (SDS) information, chemical products in use at the Facility at the time of JCO's survey did not contain the VOC target analytes applied to analysis of the sub-slab soil vapor, indoor air, and outdoor air samples collected for this investigation.

3.2 Sub-Slab Soil Vapor Pin Installation and Integrity Testing

As described in the Work Plan, JCO installed semi-permanent sub-slab soil vapor sampling points at six locations, as shown on Figure 3-1: SS-6, SS-7, SS-8, SS-9, SS-10, and SS-11. These six sampling locations were selected to augment five existing sub-slab soil vapor sampling points SS-1 through SS-5, and to span north-south and east-west across the non-manufacturing and manufacturing portions of the Facility. JCO is not aware of subsurface partitions such as deep foundation walls that would subdivide the sub-slab zone below the Facility.

Sub-slab soil vapor sampling points were installed using the VaporPin™ system, distributed by Cox-Colvin and Associates, Inc. The VaporPin™ assembly consists of a stainless-steel device with barbed fittings on each end, installed into a hole drilled through the concrete floor slab. The lower barbed end of the devices are fitted with silicone sheaths and the devices were driven into place using tools provided by the manufacturer. JCO installed VaporPins™ in a semi-permanent configuration with a threaded stainless-steel cap that is affixed flush with the surrounding floor surface when the device is not in use.

An air-tight seal between the VaporPin™ and the concrete floor slab prevents the introduction of indoor air into sub-slab soil vapor samples. To confirm the efficacy of the seal, a tracer gas seal integrity ("leak") test was performed for each VaporPin™ installation prior to the collection of sub-slab soil vapor samples. Each of the eleven sub-slab soil vapor sampling points met the seal integrity testing criteria described in the Work Plan. Prior to purging and sampling, sub-slab soil vapor sampling devices were left sealed and



closed for a minimum of 8 hours to allow the sub-slab environment to re-equilibrate after the installation and leak testing activities were completed.

Detailed descriptions of VaporPin™ installation and leak testing procedures, as well as other field quality assurance/quality control (QA/QC) procedures, were provided in the Work Plan. Those procedures were followed as described in the Work Plan.

3.3 Sample Collection

Sub-slab soil vapor, indoor air, and outdoor air samples were collected concurrently on January 31, 2018 using the procedures described in the Work Plan. Samples were collected in 6-liter evacuated stainless steel canisters equipped with eight-hour flow controllers. The eight-hour target sample collection period corresponds with the length of a typical work shift in the office portion of the Facility. The vapor collection and RTO system associated with former manufacturing operations in the Facility was permanently shut down on December 19, 2017, approximately six-weeks prior to collection of sub-slab soil vapor and air samples. The vapor collection system duct work and associated manufacturing equipment was removed from the Facility prior to the January 31, 2018 sampling event.

Per the Work Plan and NYSDOH guidance, sampling was performed during the heating season; exterior temperatures during the 8-hour sampling period ranged from approximately 31 to 32 degrees Fahrenheit (°F), 40 degrees cooler than concurrent indoor air temperatures. Field sampling data forms are provided in Appendix C.

3.3.1 Sub-Slab Soil Vapor Samples

Sub-slab soil vapor samples were collected from locations SS-1 through SS-11 (see Figures 3-1 and 3-2) using the procedures described in the Work Plan. Per the Work Plan, each sub-slab soil vapor sampling device was purged prior to sampling, and a “shut-in” leak test was also performed prior to sample collection to verify air tightness of the sampling apparatus and connections between the sample point and sample canister.

3.3.2 Indoor and Ambient Air Samples

Indoor air samples were collected from eleven locations shown on Figures 3-1 and 3-2: IA-1 through IA-11, which are co-located with sub-slab soil vapor sampling locations SS-1 through SS-11, respectively. The indoor air sampling locations were selected to represent smaller partitioned spaces such as office rooms at locations IA-2 and IA-3, and common spaces such as the employee lounge (IA-1), the lobby area (IA-4), and the manufacturing area (IA-5 through IA-11). One ambient air sample (OA-1) was collected outside the Facility concurrently with collection of the sub-slab soil vapor and indoor air samples. The ambient air sample was collected upwind from the Facility.

3.4 Sample Handling and Analytical Testing

Sub-slab soil vapor, indoor air, and ambient air samples were shipped via overnight commercial courier under chain-of-custody protocol to Eurofins Air Toxics, Inc. of Folsom, California (EATI) for analysis of 10 target VOC analytes by USEPA Method TO-15; specifically, PCE, TCE and their degradation byproducts cis-1,2-dichloroethene (cis-DCE); trans -1,2-dichloroethene (trans-DCE); 1,1-dichloroethene (1,1-DCE); and vinyl chloride. Additional target analytes were carbon tetrachloride, 1,1,1-trichloroethane (1,1,1-TCA); 1,1-dichloroethane (1,1-DCA); and 1,2-dichloroethane (1,2-DCA). Selected ion monitoring (SIM) mode was



applied to analysis of indoor and ambient air samples to achieve the lowest available reporting limits for the target analytes.

The target analytes were selected based on results from 2008 sub-slab soil vapor monitoring, as well as groundwater investigations performed during the period from 2007 to 2014. PCE and TCE were detected in sub-slab soil vapor samples beneath the Facility in 2008, 2016 and 2017. Dichloroethene isomers and vinyl chloride were not detected in the 2008 sub-slab soil vapor samples; however, these compounds were included as target analytes because they are common degradation products of PCE and TCE, as recommended in the NYSDOH soil vapor intrusion guidance (NYSDOH, 2006; 2017). The remaining target analytes - carbon tetrachloride; 1,1,1-TCA; 1,1-DCA; and 1,2-DCA - were each detected at concentrations below federal risk-based screening levels in one or more sub-slab soil vapor samples collected from below the manufacturing portion of the Facility in November 2008. 1,1,1-TCA; 1,1-DCA; and 1,1-DCE were also historically detected in groundwater samples from the former UST area located west of the Facility (see Figure 3-1).

3.5 Data Validation and Usability

JCO subcontracted an independent third-party, De Maximus Data Management Solutions (DDMS; formerly Phoenix Chemistry Services), to perform data validation in conformance with Stage 4 (Tier III) guidelines as defined by USEPA “National Functional Guidelines for Superfund Organic Methods Data Review” (USEPA, 2014b) and, as applicable, the USEPA “Hazardous Waste Support Section: Analysis of Volatile Organic Compounds in Air in Canisters By Method TO-15” (USEPA, 2014a). DDMS reviewed 100 percent of the sample analytical results generated by the analytical laboratory for completeness, accuracy and bias, precision, representativeness, and sensitivity to confirm the data are usable for making decisions on appropriate actions related to soil vapor intrusion and air quality. DDMS prepared a Data Usability Summary Report (DUSR), as described in NYSDEC DER-10 guidance (NYSDEC, 2010). Using the criteria established in the Work Plan, DDMS accepted the sample analytical results reported by the laboratory as valid without qualifications. The DUSR is provided in Appendix E.



4.0 RESULTS AND DISCUSSION

4.1 Building Use Observations

JCO interviewed Facility personnel, toured the Facility on February 1, 2018, and recorded building use observations and conditions at the time of sampling. JCO's observations and information obtained from Facility personnel were recorded on the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form (the NYSDOH form) provided in Appendix A.

Manufacturing and office operations at the Facility were phased out between December 2017 and March 2018. At the time of sampling on January 31, 2018, work in the office portion of the facility was reduced to approximately one to two employees working eight hours per day, five days per week. The majority of manufacturing operations, including fabric coating, were discontinued in December 2017. Only finishing operations (including fabric slitting and packaging) and equipment disassembly were ongoing at the time of sampling.

A summary table of chemical products JCO observed in the Facility is provided in Appendix B. The ten target analytes for laboratory analysis of sub-slab soil vapor, indoor air, and ambient air samples collected on January 31, 2018 were not listed ingredients on the SDS forms for those products.

4.2 Heating, Ventilation, and Air Conditioning (HVAC) Systems

JCO observed HVAC systems in the manufacturing and non-manufacturing portions of the Facility and interviewed Facility personnel regarding their operation. Observations were recorded on the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form provided in Appendix A. Locations of HVAC system components observed by JCO are depicted approximately on Figure A-1 in Appendix A.

The office and laboratory areas are heated by two systems: a hot-water baseboard radiator system with radiators mounted along the exterior walls of the non-manufacturing area, and a forced hot air system heated by hot water to air heat exchangers (ADC, 2016). Both systems service the non-manufacturing areas only. The forced hot air system is reportedly set for a fresh air exchange rate of 15 percent. The forced hot air duct work is also connected to a central air conditioning system that is operated in warmer weather. In addition, JCO observed a fume hood with an air flow rating slightly greater than 100 standard cubic feet per minute (SCFM) in the laboratory area. The fume hood was turned off at the time of sampling.

The manufacturing portion of the facility is heated by ceiling-mounted natural gas burners equipped with blower fans, which do not cause a net movement of air into or out of the Facility. One overhead heating unit near the southwest corner of the facility draws in outdoor air for fresh air exchange; that unit was not operating at the time of sampling. JCO observed a negative pressure in the manufacturing area, as evidenced by airflow into the building when opening exterior doors. The pressure differential was not measurable with a barometer at the time of JCO's visit.

A vapor collection system, ductwork, and regenerative thermal oxidizer (RTO) formerly associated with solvent-based fabric coating operations (the former C coating line) was permanently shut down on December 14, 2017, approximately six weeks before air sampling was performed. A negative-pressure ventilation system associated with water-based coating operations (the former E coating line) was also permanently shut down in 2017. JCO observed five remaining closed ceiling vents with louvers shut, and two open passive roof vents (see Figure A-1 in Appendix A). Facility personnel reported no active



ventilation was occurring within the manufacturing portion of the Facility during the soil vapor / indoor air sampling period.

4.3 Sampling Results and Discussion

The suitability of investigation results for evaluating soil vapor intrusion at the Facility is supported by several factors: 1) sampling was performed during the heating season when the potential for soil vapor intrusion is increased; 2) a former vapor collection system and thermal oxidizer was permanently shut down six-weeks prior to sampling, reducing the air exchange rate in the Facility; 3) leak testing confirmed the integrity of sub-slab sampling equipment at each sampling location; 4) no materials containing target analytes were identified in the Facility at the time of sampling; and 5) third party data validation confirmed the usability of sample analytical results. Laboratory analytical reports are provided in Appendix D. A Data Usability Summary Report is provided in Appendix E.

Validated analytical results for sub-slab soil vapor, indoor air and ambient air samples are compared to NYSDOH Indoor Air Guidelines and USEPA Vapor Intrusion Screening Levels for commercial buildings (USEPA, 2017) in Table 4-1. The USEPA screening levels are provided for comparison because they are available for most of the target analytes for both sub-slab soil vapor and indoor air and are updated regularly by USEPA to incorporate current toxicological data. Evaluation of the sampling results using generic soil vapor/indoor air decision matrices from the NYSDOH October 2006 Soil Vapor Intrusion Guidance (NYSDOH, 2006; updated May 2017) is discussed later in this section.

Concentrations of VOCs in the indoor air samples are below NYSDOH Indoor Air Guidelines and USEPA screening levels for all analytes (see Table 4-1). Two VOCs, PCE and carbon tetrachloride, were detected in indoor air. Detected PCE concentrations were between 0.24 and 0.69 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), below the NYSDOH Indoor Air Guideline of 30 $\mu\text{g}/\text{m}^3$ and USEPA screening level of 47 $\mu\text{g}/\text{m}^3$. Carbon tetrachloride was detected at concentrations from 0.37 to 0.44 $\mu\text{g}/\text{m}^3$ in indoor air samples, compared to a USEPA screening level of 2.0 $\mu\text{g}/\text{m}^3$. NYSDOH has not established an Indoor Air Guideline for carbon tetrachloride.

Ambient air surrounding the Facility is a likely source of carbon tetrachloride detected in indoor air. Table 4-2 compares carbon tetrachloride concentrations detected in indoor air in the Facility to those detected in the upwind outdoor ambient air samples collected concurrently at the Site, ambient air samples collected from the surrounding area by the Town of Orangeburg and NYSDEC in 2016 and 2017, and a 2015 New York statewide 24-hour average concentration published by NYSDEC. The comparison shows carbon tetrachloride concentrations detected in indoor air are similar to those in ambient air in the area surrounding the Site. In addition, carbon tetrachloride was the only analyte detected in outdoor ambient air samples from the Site, it was not detected in soil and groundwater samples collected from the Site (JCO, 2017c), and there is no known or suspected historical use of carbon tetrachloride at the Site.

Concentrations of all VOCs detected in the January 2018 sub-slab soil vapor samples are below USEPA screening levels and, combined with the co-located indoor air samples, fall within the “no further action” category on the NYSDOH decision matrices, with one exception. The exception is a single sub-slab soil vapor detection of 180 $\mu\text{g}/\text{m}^3$ TCE in at location SS-1 (see the blue-shaded value in Table 4-1); this value falls within the “mitigate” category for sub-slab soil vapor on NYSDOH Matrix A. TCE was not detected in the co-located indoor air sample, IA-1, and TCE concentrations at the 10 remaining sub-slab soil vapor sample locations were significantly lower, varying from non-detect (at 7 locations) to a maximum of 9.5 $\mu\text{g}/\text{m}^3$; all within the “no further action” category on NYSDOH decision Matrix A.



The single detection of TCE in sub-slab soil vapor above the NYSDOH “mitigate” threshold at location SS-1 is not representative of subsurface conditions beneath the Facility as a whole. As described above, TCE concentrations at all other soil vapor sampling locations were below the NYSDOH “no further action” threshold. TCE was not detected in any of the indoor air samples collected in January 2018, nor was TCE detected in any previous indoor air samples collected from the facility by JCO in 2016 and 2017. The absence of detectable TCE in indoor air in three monitoring events over three successive winter heating seasons shows no evidence of impacts to indoor air quality from soil vapor intrusion. Therefore, additional sub-slab soil vapor and indoor air quality monitoring for TCE at the Facility is not warranted.

Similarly, concentrations of the remaining nine analytes in sub-slab soil vapor and indoor air samples fall within the NYSDOH “no further action” category and were below USEPA risk-based soil vapor intrusion screening levels over the same monitoring period in 2016, 2017, and 2018. Carbon tetrachloride concentrations at two locations in March 2016 fell into the “monitor” category on NYSDOH Matrix A (see Figure 2-2 and Table 2-1); however, those results were likely affected by the presence of carbon tetrachloride at similar levels in ambient air, as discussed above (see Table 4-2).

Results from soil, groundwater, soil vapor, and indoor air sampling indicate there is not a significant source of NYSDOH Matrix VOCs present beneath the Facility with the capacity to impact indoor air quality above NYSDOH or USEPA screening criteria. VOCs were not detected above unrestricted use Soil Cleanup Objectives in soil and are not present above Ambient Water Quality Standards(AWQS) in groundwater downgradient from the Facility (JCO, 2017c). Over a seven-year period of groundwater monitoring in the area downgradient from the Facility from 2007 to 2014, PCE was detected in only one groundwater sample, and at a concentration below the laboratory reporting limit. 1,1-DCE, cis-DCE, and TCE were each detected in two downgradient wells, but at concentrations below AWQS. These results support that a significant source of these VOCs is not present beneath the Facility and continued monitoring of sub-slab soil vapor and indoor air at the Site is no longer warranted.



5.0 REFERENCES

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TABLES



Table 2-1: Indoor Air and Sub-Slab Soil Vapor Analytical Results; 2016-2017

Former Paxar Facility
Orangeburg, New York
NYSDEC Site No. 344072

Sample Date:					3/23/2016	1/25/2017	3/23/2016	1/25/2017	3/23/2016	1/25/2017	3/23/2016	1/25/2017	3/23/2016	3/23/2016	1/25/2017	1/25/2017
Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	USEPA Screening Level ¹ (µg/m ³)	SS-1	SS-1	SS-2	SS-2	SS-3	SS-3	SS-4	SS-4	SS-5	SS-5 Duplicate	SS-5	SS-5 Duplicate
Sub-Slab Soil Vapor	8 hours	Tetrachloroethene	Matrix B	1,600	140	150	4.5	4.8	8.1	7.3	8.5	7.3	160	150	130	130
		Trichloroethene	Matrix A	100	14	28	ND (<0.90)	ND (<0.96)	1.1	0.9 J	ND (<0.88)	ND (<0.98)	15	15	10	11
		cis-1,2-Dichloroethene	Matrix A	--	ND (<0.65)	3.4	ND (<0.67)	ND (<0.71)	ND (<0.62)	ND (<0.68)	ND (<0.65)	ND (<0.72)	ND (<0.64)	ND (<0.61)	ND (<0.68)	ND (<0.67)
		trans-1,2-Dichloroethene	--	--	ND (<0.65)	ND (<0.69)	ND (<0.67)	ND (<0.71)	ND (<0.62)	ND (<0.68)	ND (<0.65)	ND (<0.72)	ND (<0.64)	ND (<0.61)	ND (<0.68)	ND (<0.67)
		1,1-Dichloroethene	Matrix A	29,000	ND (<0.65)	ND (<0.69)	ND (<0.67)	ND (<0.71)	ND (<0.62)	ND (<0.68)	ND (<0.65)	ND (<0.72)	1.1	1.1	ND (<0.68)	0.75
		Vinyl chloride	Matrix C	93	ND (<0.42)	ND (<0.45)	ND (<0.43)	ND (<0.46)	ND (<0.40)	ND (<0.44)	ND (<0.42)	ND (<0.47)	ND (<0.41)	ND (<0.39)	ND (<0.44)	ND (<0.43)
		1,1,1-Trichloroethane	Matrix B	730,000	1.0	1.0	ND (<0.92)	ND (<0.98)	ND (<0.86)	ND (<0.93)	ND (<0.89)	ND (<1.0)	14	14	13	14
		Carbon Tetrachloride	Matrix A	68	6.8	ND (<1.1)	29	ND (<1.1)	6.3	1.0 J	31	ND (<1.2)	7.1	7.4	5.2	5.6
		1,1-Dichloroethane	--	260	ND (<0.66)	ND (<0.71)	ND (<0.68)	ND (<0.72)	ND (<0.64)	ND (<0.69)	ND (<0.66)	ND (<0.74)	140	140	74	75
		1,2-Dichloroethane	--	16	ND (<0.66)	ND (<0.71)	ND (<0.68)	ND (<0.72)	ND (<0.64)	ND (<0.69)	ND (<0.66)	ND (<0.74)	ND (<0.65)	ND (<0.62)	ND (<0.69)	ND (<0.68)

Sample Date:						3/23/2016	1/24/2017	3/23/2016	1/24/2017	3/23/2016	1/24/2017	3/23/2016	3/23/2016	1/24/2017	1/24/2017	3/23/2016	1/24/2017	3/23/2016	1/24/2017
Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	NYSDOH Indoor Air Guideline (µg/m ³)	USEPA Screening Level ¹ (µg/m ³)	IA-1	IA-1	IA-2	IA-2	IA-3	IA-3	IA-4	IA-4 Duplicate	IA-4	IA-4 Duplicate	IA-5	IA-5	OA-1	OA-1
Indoor and Ambient Air	8 hours	Tetrachloroethene	Matrix B	30	47	0.74	ND (<0.62)	0.66	ND (<0.46)	ND (<1.1)	ND (<1.1)	0.70	0.70	ND (<0.30)	ND (<0.40)	ND (<2.2)	ND (<120)	ND (<0.22)	ND (<0.22)
		Trichloroethene	Matrix A	2	3	ND (<0.45)	ND (<0.49)	ND (<0.35)	ND (<0.37)	ND (<0.85)	ND (<0.90)	ND (<0.43)	ND (<0.34)	ND (<0.24)	ND (<0.32)	ND (<1.7)	ND (<96)	ND (<0.17)	ND (<0.18)
		cis-1,2-Dichloroethene	Matrix A	--	--	ND (<0.33)	ND (<0.36)	ND (<0.26)	ND (<0.27)	ND (<0.63)	ND (<0.67)	ND (<0.32)	ND (<0.25)	ND (<0.17)	ND (<0.24)	ND (<1.3)	ND (<71)	ND (<0.13)	ND (<0.13)
		trans-1,2-Dichloroethene	--	--	--	ND (<1.7)	ND (<1.8)	ND (<1.3)	ND (<1.4)	ND (<3.1)	ND (<3.3)	ND (<1.6)	ND (<1.2)	ND (<0.87)	ND (<1.2)	ND (<6.4)	ND (<71)	ND (<0.63)	ND (<0.65)
		1,1-Dichloroethene	Matrix A	--	880	ND (<0.17)	ND (<0.18)	ND (<0.13)	ND (<0.14)	ND (<0.31)	ND (<0.33)	ND (<0.16)	ND (<0.12)	ND (<0.087)	ND (<0.12)	ND (<0.64)	ND (<71)	ND (<0.063)	ND (<0.065)
		Vinyl chloride	Matrix C	--	2.8	ND (<0.11)	ND (<0.12)	ND (<0.082)	ND (<0.087)	ND (<0.20)	ND (<0.21)	ND (<0.10)	ND (<0.081)	ND (<0.056)	ND (<0.076)	ND (<0.41)	ND (<46)	ND (<0.041)	ND (<0.042)
		1,1,1-Trichloroethane	Matrix B	--	22,000	ND (<0.46)	ND (<0.50)	ND (<0.35)	ND (<0.37)	ND (<0.86)	ND (<0.92)	ND (<0.44)	ND (<0.34)	ND (<0.24)	ND (<0.32)	ND (<1.8)	ND (<98)	ND (<0.17)	ND (<0.18)
		Carbon Tetrachloride	Matrix A	--	2	0.65	ND (<0.58)	0.60	ND (<0.43)	ND (<0.99)	ND (<1.0)	0.74	0.69	0.45	0.45	ND (<2.0)	ND (<110)	0.47	0.53
		1,1-Dichloroethane	--	--	7.7	ND (<0.34)	ND (<0.37)	ND (<0.26)	ND (<0.28)	ND (<0.64)	ND (<0.68)	ND (<0.32)	ND (<0.26)	ND (<0.18)	ND (<0.24)	ND (<1.3)	ND (<72)	ND (<0.13)	ND (<0.13)
		1,2-Dichloroethane	--	--	0.47	ND (<0.34)	ND (<0.37)	ND (<0.26)	ND (<0.28)	ND (<0.64)	ND (<0.68)	ND (<0.32)	ND (<0.26)	ND (<0.18)	ND (<0.24)	ND (<1.3)	ND (<72)	ND (<0.13)	ND (<0.13)

Notes:

1. USEPA Screening Levels from Vapor Intrusion Screening Level Calculator version 3.5, June 2017 RSLs. Commercial Scenario, TCR = 1x10⁶; THQ = 1.0 (USEPA, 2017)
2. Indoor Air and Outdoor Air Samples analyzed by Eurofins Air Toxics using USEPA Method TO-15 SIM
3. Sub-Slab Soil Vapor Samples analyzed by Eurofins Air Toxics using modified USEPA Method TO-15
4. Concentrations expressed in units of micrograms per cubic meter (µg/m³)

Abbreviations:

"ND" = analyte not detected; analytical reporting limit provided in parentheses
"--" = no guidance value or screening level for this compound

NYSDOH Soil Vapor / Indoor Air Decision Matrix Comparison:

No applicable NYSDOH matrix for trans-1,2-dichloroethene; 1,1-dichloroethane; 1,2-dichloroethane; or outdoor air sample OA-1

No Further Action
Monitor
Mitigate

Table 4-1: Indoor Air and Sub-Slab Soil Vapor Analytical Results; January 2018
Former Paxar Facility
Orangeburg, New York
NYSDEC Site No. 344072

Sample Date:					1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018
Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	USEPA Screening Level ¹ (µg/m ³)	SS-1	SS-2	SS-3	SS-4	SS-5	SS-5 Duplicate	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11
Sub-Slab Soil Vapor	8 hours	Tetrachloroethene	Matrix B	1,600	470	4.7	10	8.1	120	130	340	40	29	930	370	17
		Trichloroethene	Matrix A	100	180	ND < 0.84	1.1	ND < 0.86	9.5	9.8	ND < 1.6	ND < 0.88	2.8	ND < 2.9	ND < 1.8	ND < 0.83
		cis-1,2-Dichloroethene	Matrix A	--	58	ND < 0.62	ND < 0.64	ND < 0.63	ND < 0.67	ND < 0.67	ND < 1.2	ND < 0.65	ND < 0.63	ND < 2.2	ND < 1.3	ND < 0.61
		trans-1,2-Dichloroethene	--	--	2.0	ND < 0.62	ND < 0.64	ND < 0.63	ND < 0.67	ND < 0.67	ND < 1.2	ND < 0.65	ND < 0.63	ND < 2.2	ND < 1.3	ND < 0.61
		1,1-Dichloroethene	Matrix A	29,000	ND < 1.3	ND < 0.62	ND < 0.64	ND < 0.63	ND < 0.67	ND < 0.67	ND < 1.2	ND < 0.65	ND < 0.63	ND < 2.2	ND < 1.3	ND < 0.61
		Vinyl chloride	Matrix C	93	ND < 0.81	ND < 0.40	ND < 0.41	ND < 0.41	ND < 0.43	ND < 0.41	ND < 0.78	ND < 0.42	ND < 0.41	ND < 1.4	ND < 0.83	ND < 0.40
		1,1,1-Trichloroethane	Matrix B	730,000	ND < 1.7	ND < 0.85	ND < 0.88	ND < 0.87	9.5	8.7	7.3	4.0	14	6.5	2.5	ND < 0.84
		Carbon Tetrachloride	Matrix A	68	ND < 2.0	ND < 0.98	ND < 1.0	ND < 1.0	3.6	3.6	ND < 1.9	ND < 1.0	2.6	ND < 3.4	ND < 2.0	1.3
		1,1-Dichloroethane	--	260	ND < 1.3	ND < 0.63	ND < 0.65	ND < 0.65	39	38	ND < 1.2	ND < 0.66	0.87	ND < 2.2	ND < 1.3	ND < 0.61
		1,2-Dichloroethane	--	16	ND < 1.3	ND < 0.63	ND < 0.65	ND < 0.65	ND < 0.69	ND < 0.68	ND < 1.2	ND < 0.66	ND < 0.64	ND < 2.2	ND < 1.3	ND < 0.63

Sample Date:						1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018	1/31/2018
Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	NYSDOH Indoor Air Guideline (µg/m ³)	USEPA Screening Level ¹ (µg/m ³)	IA-1	IA-2	IA-3	IA-4	IA-5	IA-6	IA-7	IA-8	IA-9	IA-10	IA-10 Duplicate	IA-11	OA-1
Indoor and Ambient Air	8 hours	Tetrachloroethene	Matrix B	30	47	0.56	0.69	0.52	0.61	0.24	0.30	0.31	0.24	0.32	0.31	0.36	0.37	ND < 0.20
		Trichloroethene	Matrix A	2	3	ND < 0.18	ND < 0.18	ND < 0.16	ND < 0.17	ND < 0.17	ND < 0.18	ND < 0.17	ND < 0.17	ND < 0.17	ND < 0.18	ND < 0.17	ND < 0.18	ND < 0.16
		cis-1,2-Dichloroethene	Matrix A	--	--	ND < 0.13	ND < 0.13	ND < 0.12	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.12	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.12
		trans-1,2-Dichloroethene	--	--	--	ND < 0.66	ND < 0.65	ND < 0.61	ND < 0.64	ND < 0.63	ND < 0.67	ND < 0.64	ND < 0.64	ND < 0.62	ND < 0.65	ND < 0.64	ND < 0.67	ND < 0.59
		1,1-Dichloroethene	Matrix A	--	880	ND < 0.066	ND < 0.065	ND < 0.061	ND < 0.064	ND < 0.063	ND < 0.067	ND < 0.064	ND < 0.064	ND < 0.062	ND < 0.065	ND < 0.064	ND < 0.067	ND < 0.059
		Vinyl chloride	Matrix C	--	2.8	ND < 0.042	ND < 0.042	ND < 0.039	ND < 0.041	ND < 0.041	ND < 0.043	ND < 0.041	ND < 0.041	ND < 0.040	ND < 0.042	ND < 0.041	ND < 0.043	ND < 0.038
		1,1,1-Trichloroethane	Matrix B	--	22,000	ND < 0.18	ND < 0.18	ND < 0.17	ND < 0.18	ND < 0.17	ND < 0.18	ND < 0.18	ND < 0.18	ND < 0.17	ND < 0.18	ND < 0.18	ND < 0.18	ND < 0.16
		Carbon Tetrachloride	Matrix A	--	2	0.43	0.39	0.44	0.40	0.42	0.40	0.42	0.42	0.37	0.41	0.44	ND < 0.21	0.40
		1,1-Dichloroethane	--	--	7.7	ND < 0.13	ND < 0.13	ND < 0.12	ND < 0.13	ND < 0.13	ND < 0.14	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.14	ND < 0.12
		1,2-Dichloroethane	--	--	0.47	ND < 0.13	ND < 0.13	ND < 0.12	ND < 0.13	ND < 0.13	ND < 0.14	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.13	ND < 0.14	ND < 0.12

Notes:

- 1. USEPA Screening Levels from Vapor Intrusion Screening Level Calculator version 3.5, June 2017 RSLs. Commercial Scenario, TCR = 1x10⁻⁶; THQ = 1.0 (USEPA, 2017)
- 2. Indoor Air and Outdoor Air Samples analyzed by Eurofins Air Toxics using USEPA Method TO-15 SIM
- 3. Sub-Slab Soil Vapor Samples analyzed by Eurofins Air Toxics using modified USEPA Method TO-15
- 4. Concentrations expressed in units of micrograms per cubic meter (µg/m³)

Abbreviations:

"ND < ##" = analyte not detected; analytical reporting limit provided
"--" = no guidance value or screening level for this compound

NYSDOH Soil Vapor / Indoor Air Decision Matrix Comparison:

No applicable NYSDOH matrix for trans-1,2-dichloroethene; 1,1-dichlroethane; 1,2-dichloroethane; or outdoor air sample OA-1

No Further Action
Monitor
Mitigate

Table 4-2: Comparison of Carbon Tetrachloride in Indoor and Ambient Air

Former Paxar Facility
Orangeburg, New York
NYSDEC Site No. 344072

Sample Type	Sampler	Sample Date	Number of Sample Locations	Carbon Tetrachloride Result ($\mu\text{g}/\text{m}^3$)
ADC Facility Indoor Air Sampling Results	Avery Dennison Corporation ¹	3/23/2016	1	ND - 0.74
		1/24/2017	1	ND - 0.45
		1/31/2018	1	ND - 0.44
Outdoor (Ambient) Air Sampling Results	NYSDEC ²	9/2/16 - 9/11/16	4	0.52 - 0.55
	Town of Orangeburg ³	1/20/2017	6	0.31 - 0.69
	Avery Dennison Corporation ¹	3/26/2016	1	0.47
		1/24/2017	1	0.53
		1/31/2018	1	0.40
	2015 NY Statewide 24-hour Average ²	--	--	0.52

References and Abbreviations:

1. JCO (2016b, 2017a)

2. NYSDEC (2016)

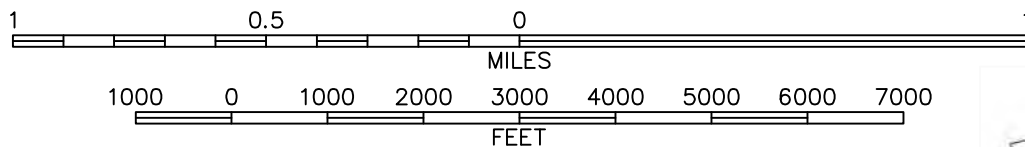
3. Langan (2017)

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

ND = not detected

FIGURES





CONTOUR INTERVAL 10 FEET

BASE MAP: USGS 7.5 Minute Topographic Quadrangle NYACK, NY-NJ

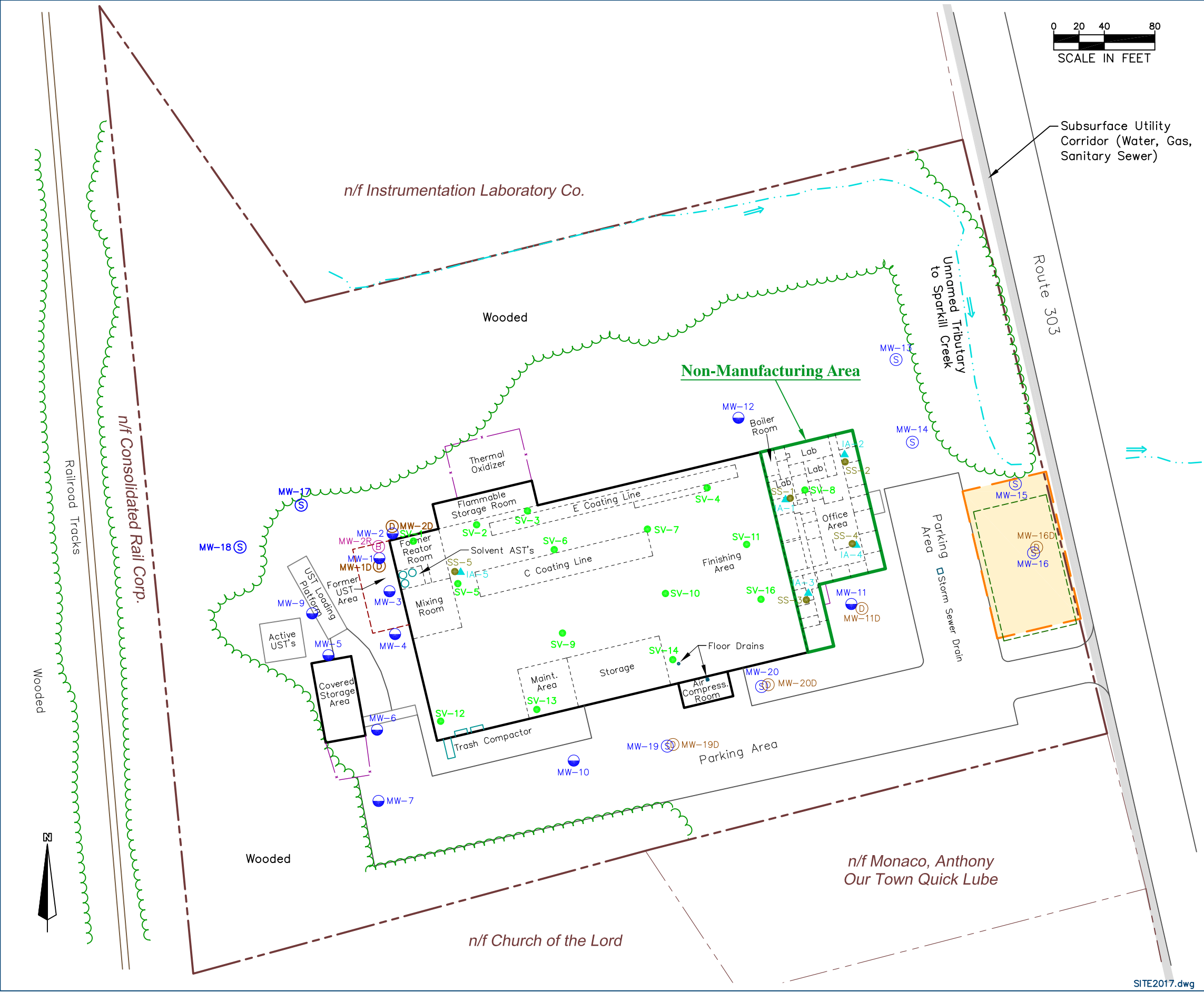


FIGURE 1-1: SITE LOCATION FORMER PAXAR FACILITY ORANGEBURG, NEW YORK



100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK Date: 01/26/16
Reviewed by: CMT Date: 01/26/16
Scale: As Shown Project: 1-0145-15



LEGEND

- Property Line
- Building Footprint
- Approximate Building Interior Partition
- Fenceline
- Stream Location
- Former Septic System Leach Field (Approximate)
- Approximate Septic System GPR Survey Area
- 2008 Soil Gas Sampling Location
- 2016–2017 Sub-slab Soil Vapor Sampling Location
- 2016–2017 Indoor Air Sampling Location
- 2007 ERM Soil Sampling Location and Shallow Unconsolidated Deposits Groundwater Monitoring Well
- 2007–2014 Shallow Unconsolidated Deposits Groundwater Monitoring Well Location
- 2007–2014 Deep Unconsolidated Deposits Groundwater Monitoring Well Location
- 2007–2014 Bedrock Groundwater Monitoring Well Location

Note: Groundwater monitoring well locations surveyed by Tectonic Engineering & Surveying Consultants, P.C. on 12/07/10, 02/21/12, and 11/05/13. All other locations are approximate.

Sources:

- Town of Orangeburg 1992 tax maps
- 2007 aerial photography from New York State GIS Clearinghouse
- Survey Plat by Tectonic Engineering & Surveying Consultants, P.C. dated 12/20/10, revised 02/28/12.

Figure 2-1

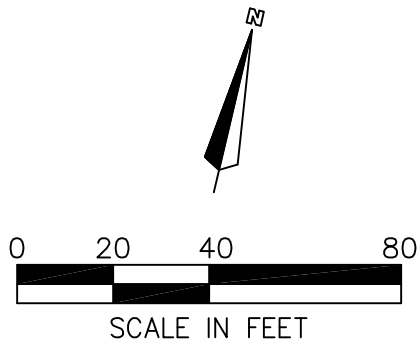
Site Plan

Former PAXAR Facility

Orangeburg, New York

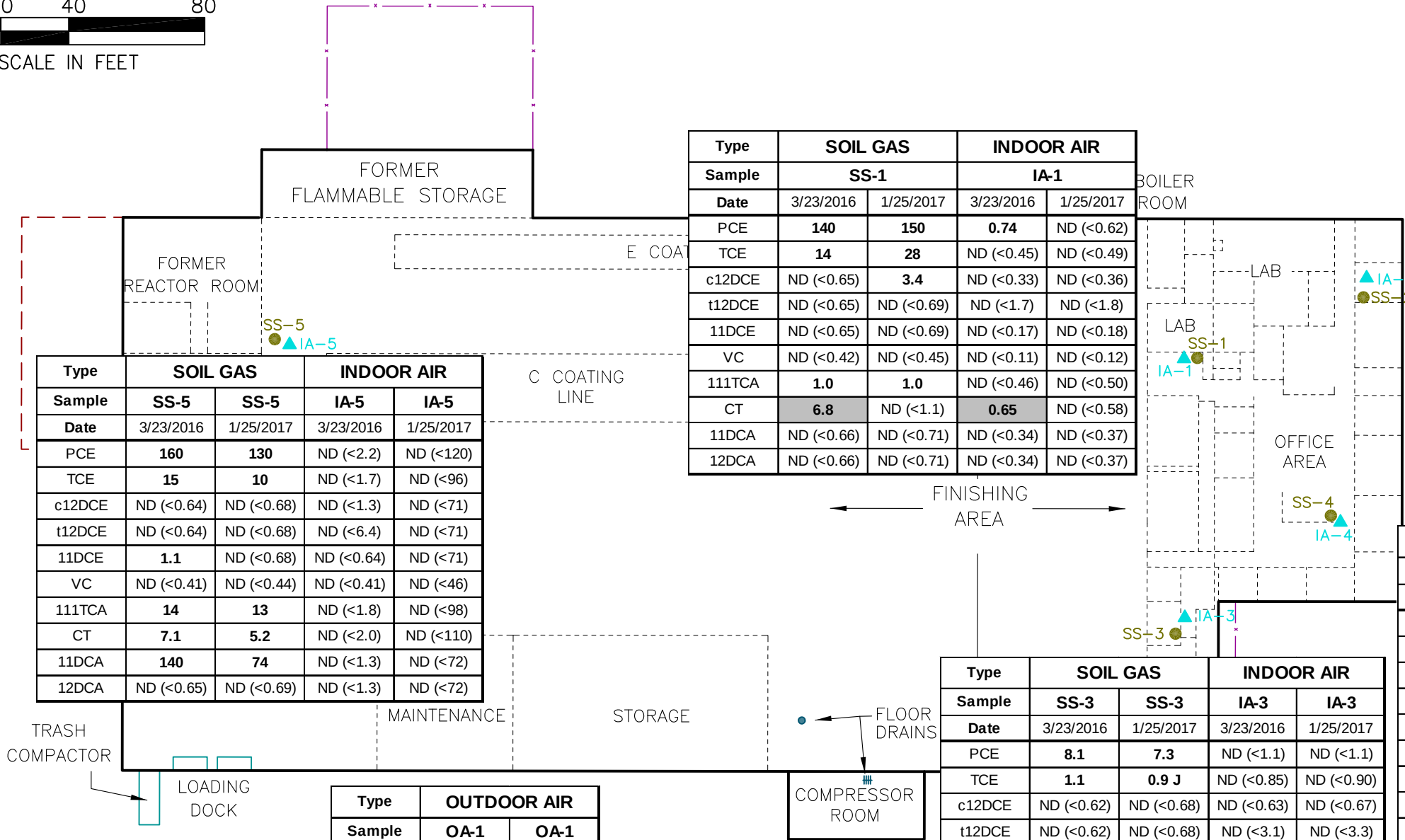
100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 09/26/17
Reviewed by: CMT	Date: 09/26/17
Scale: As Shown	Project: 1-0145-15



Notes:
Concentrations expressed in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)
"ND" = analyte not detected; analytical reporting limit provided in parentheses
"J" = estimated value
Shaded values fall into 'monitor' category on DOH decision matrices

- LEGEND
- Building Footprint
 - Approximate Building Interior Partition
 - Fenceline
 - Indoor Air Sampling Location
 - Sub-Slab Soil Vapor Sampling Location



Type	SOIL GAS		INDOOR AIR	
Sample	SS-5	SS-5	IA-5	IA-5
Date	3/23/2016	1/25/2017	3/23/2016	1/25/2017
PCE	160	130	ND (<2.2)	ND (<120)
TCE	15	10	ND (<1.7)	ND (<96)
c12DCE	ND (<0.64)	ND (<0.68)	ND (<1.3)	ND (<71)
t12DCE	ND (<0.64)	ND (<0.68)	ND (<6.4)	ND (<71)
11DCE	1.1	ND (<0.68)	ND (<0.64)	ND (<71)
VC	ND (<0.41)	ND (<0.44)	ND (<0.41)	ND (<46)
111TCA	14	13	ND (<1.8)	ND (<98)
CT	7.1	5.2	ND (<2.0)	ND (<110)
11DCA	140	74	ND (<1.3)	ND (<72)
12DCA	ND (<0.65)	ND (<0.69)	ND (<1.3)	ND (<72)

Type	SOIL GAS		INDOOR AIR	
Sample	SS-1	SS-1	IA-1	IA-1
Date	3/23/2016	1/25/2017	3/23/2016	1/25/2017
PCE	140	150	0.74	ND (<0.62)
TCE	14	28	ND (<0.45)	ND (<0.49)
c12DCE	ND (<0.65)	3.4	ND (<0.33)	ND (<0.36)
t12DCE	ND (<0.65)	ND (<0.69)	ND (<1.7)	ND (<1.8)
11DCE	ND (<0.65)	ND (<0.69)	ND (<0.17)	ND (<0.18)
VC	ND (<0.42)	ND (<0.45)	ND (<0.11)	ND (<0.12)
111TCA	1.0	1.0	ND (<0.46)	ND (<0.50)
CT	6.8	ND (<1.1)	0.65	ND (<0.58)
11DCA	ND (<0.66)	ND (<0.71)	ND (<0.34)	ND (<0.37)
12DCA	ND (<0.66)	ND (<0.71)	ND (<0.34)	ND (<0.37)

Type	SOIL GAS		INDOOR AIR	
Sample	SS-2	SS-2	IA-2	IA-2
Date	3/23/2016	1/25/2017	3/23/2016	1/25/2017
PCE	4.5	4.8	0.66	ND (<0.46)
TCE	ND (<0.90)	ND (<0.96)	ND (<0.35)	ND (<0.37)
c12DCE	ND (<0.67)	ND (<0.71)	ND (<0.26)	ND (<0.27)
t12DCE	ND (<0.67)	ND (<0.71)	ND (<1.3)	ND (<1.4)
11DCE	ND (<0.67)	ND (<0.71)	ND (<0.13)	ND (<0.14)
VC	ND (<0.43)	ND (<0.46)	ND (<0.082)	ND (<0.087)
111TCA	ND (<0.92)	ND (<0.98)	ND (<0.35)	ND (<0.37)
CT	29	ND (<1.1)	0.60	ND (<0.43)
11DCA	ND (<0.68)	ND (<0.72)	ND (<0.26)	ND (<0.28)
12DCA	ND (<0.68)	ND (<0.72)	ND (<0.26)	ND (<0.28)

Type	SOIL GAS		INDOOR AIR	
Sample	SS-4	SS-4	IA-4	IA-4
Date	3/23/2016	1/25/2017	3/23/2016	1/25/2017
PCE	8.5	7.3	0.70	ND (<0.30)
TCE	ND (<0.88)	ND (<0.98)	ND (<0.43)	ND (<0.24)
c12DCE	ND (<0.65)	ND (<0.72)	ND (<0.32)	ND (<0.17)
t12DCE	ND (<0.65)	ND (<0.72)	ND (<1.6)	ND (<0.87)
11DCE	ND (<0.65)	ND (<0.72)	ND (<0.16)	ND (<0.087)
VC	ND (<0.42)	ND (<0.47)	ND (<0.10)	ND (<0.056)
111TCA	ND (<0.89)	ND (<1.0)	ND (<0.44)	ND (<0.24)
CT	31	ND (<1.2)	0.74	0.45
11DCA	ND (<0.66)	ND (<0.74)	ND (<0.32)	ND (<0.18)
12DCA	ND (<0.66)	ND (<0.74)	ND (<0.32)	ND (<0.18)

Type	SOIL GAS		INDOOR AIR	
Sample	SS-3	SS-3	IA-3	IA-3
Date	3/23/2016	1/25/2017	3/23/2016	1/25/2017
PCE	8.1	7.3	ND (<1.1)	ND (<1.1)
TCE	1.1	0.9 J	ND (<0.85)	ND (<0.90)
c12DCE	ND (<0.62)	ND (<0.68)	ND (<0.63)	ND (<0.67)
t12DCE	ND (<0.62)	ND (<0.68)	ND (<3.1)	ND (<3.3)
11DCE	ND (<0.62)	ND (<0.68)	ND (<0.31)	ND (<0.33)
VC	ND (<0.40)	ND (<0.44)	ND (<0.20)	ND (<0.21)
111TCA	ND (<0.86)	ND (<0.93)	ND (<0.86)	ND (<0.92)
CT	6.3	1.0 J	ND (<0.99)	ND (<1.0)
11DCA	ND (<0.64)	ND (<0.69)	ND (<0.64)	ND (<0.68)
12DCA	ND (<0.64)	ND (<0.69)	ND (<0.64)	ND (<0.68)

Type	OUTDOOR AIR	
Sample	OA-1	OA-1
Date	3/23/2016	1/24/2017
PCE	ND (<0.22)	ND (<0.22)
TCE	ND (<0.17)	ND (<0.18)
c12DCE	ND (<0.13)	ND (<0.13)
t12DCE	ND (<0.63)	ND (<0.65)
11DCE	ND (<0.063)	ND (<0.065)
VC	ND (<0.041)	ND (<0.042)
111TCA	ND (<0.17)	ND (<0.18)
CT	0.47	0.53
11DCA	ND (<0.13)	ND (<0.13)
12DCA	ND (<0.13)	ND (<0.13)

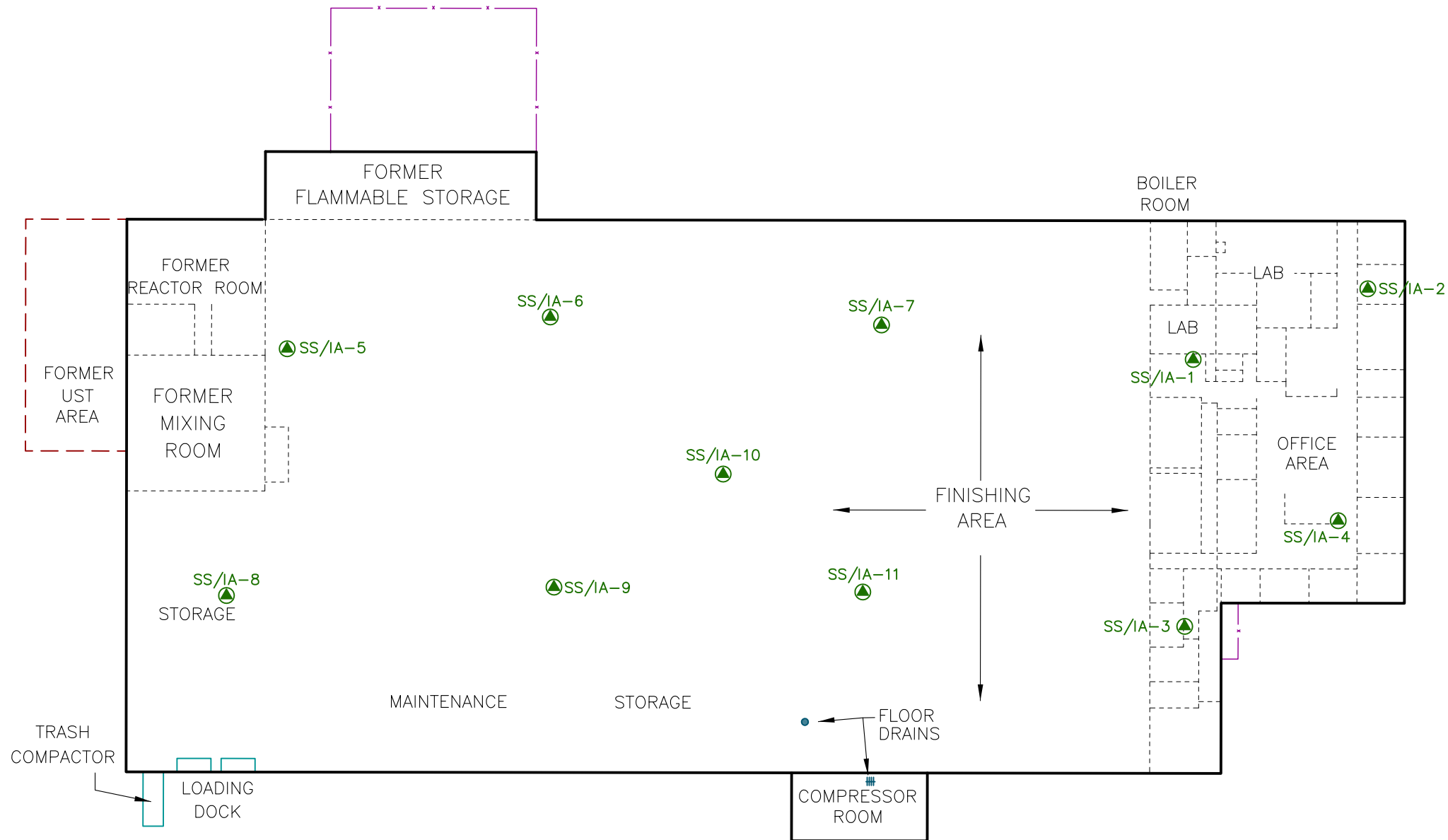
Abbreviations:	
PCE	Tetrachloroethene
TCE	Trichloroethene
c12DCE	cis-1,2-Dichloroethene
t12DCE	trans-1,2-Dichloroethene
11DCE	1,1-Dichloroethene
VC	Vinyl chloride
111TCA	1,1,1-Trichloroethane
CT	Carbon Tetrachloride
11DCA	1,1-Dichloroethane
12DCA	1,2-Dichloroethane

Figure 2-2: 2016 - 2017
Soil Vapor Investigation Results
Former PAXAR Facility
Orangeburg, New York



100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK Date: 03/23/18
Reviewed by: CMT Date: 03/23/18
Scale: As Shown Project: 1-0145-15



- LEGEND**
- Building Footprint
 - - - Approximate Building Interior Partition
 - x - Fenceline
 - ▲ Sub-Slab Soil Vapor and Indoor Air Sampling Location

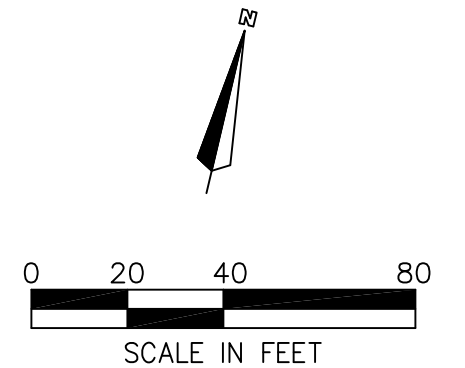


**Figure 3-1: January 2018 Sub-Slab Soil Vapor and Indoor Air Sampling Locations
Former PAXAR Facility
Orangeburg, New York**



100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 03/20/18
Reviewed by: CMT	Date: 03/20/18
Scale: As Shown	Project: 1-0145-15

APPENDICES



**APPENDIX A NYSDOH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING
INVENTORY FORM**



**NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Bob Osborne Date/Time Prepared 2/1/18

Preparer's Affiliation The Johnson Company Phone No. (802)249-2630

Purpose of Investigation Soil Vapor Intrusion Investigation

1. OCCUPANT:

Interviewed: ☒ Y ☐ N

Last Name: Price First Name: Chris

Address: 524 Route 303; Orangeburg, NY 10962

County: Rockland

Home Phone: _____ Office Phone: (845)680-3890

Number of Occupants/persons at this location 12 Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant X)

Interviewed: ☐ Y ☐ N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
☒ Industrial

School
Church

Commercial/Multi-use
Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other: _____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Fabric Coating and Slitting

Does it include residences (i.e., multi-use)? Y ☒ N ☐ If yes, how many? _____

Other characteristics:

Number of floors 1

Building age Unknown

Is the building insulated? ☒ Y ☐ N

How air tight? Tight / Average ☒ Not Tight

Minimal, in roof

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Not applicable.

Airflow near source

Potential air outputs from the manufacturing area include: 1) roof mounted fans above the finishing area; 2) roof mounted louver vents; 3) a fume hood (100 SCFM) near former mixing room; 4) a fume hood (~100 SCFM) in the lab area; and, 5) leaking doors and windows around manufacturing area. The fume hoods and roof mounted fans were not operating at the time of air sampling on January 31, 2018. See Figure A-1.

Outdoor air infiltration

Potential air inputs into the Facility include the roof vents (generally in the manufacturing areas) and exterior windows and doors. JCO observed air flow in and out while operating exterior doors. The pressure differential was not measurable with a barometer at the time of JCO's visit.

Infiltration into air ducts

Air ducts associated with a former vapor recovery system were removed prior to sampling, and the ceiling sealed where those ducts had passed through. The heating system near the southwest corner of the facility with fresh air ducts was not operational at the time of air sampling on January 31, 2018.

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
Block
- b. Basement type: full Block crawlspace slab other Not applicable
- c. Basement floor: concrete dirt stone other Not applicable
- d. Basement floor: uncovered covered covered with Not applicable
- e. Concrete floor: unsealed sealed sealed with _____
- f. Foundation walls: poured block stone other _____
- g. Foundation walls: unsealed sealed sealed with Paint
- h. The basement is: wet damp dry moldy Not applicable
- i. The basement is: finished unfinished partially finished Not applicable`
- j. Sump present? Y (N)
- k. Water in sump? Y / N (not applicable)

Basement/Lowest level depth below grade: N/A (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

A few cracks were observed in the floor of the manufacturing area, including some expansion joints. A few floor drains were also observed (in bathroom and manufacturing area).

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

<u>Hot air circulation</u>	Office	Heat pump	<u>Hot water baseboard</u>	Office (baseboard),
Space Heaters		Steam radiation	Radiant floor	plus Plant (overhead).
Electric baseboard		Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

<u>Natural Gas</u>	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: Natural Gas

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None
3x in Shop

Are there air distribution ducts present? ☒ Y ☐ N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

"Make up" air unit located in in the loading dock area (southwest corner of manufacturing area), mounted on the ceiling; this unit was not operating at the time of air sample collection on 1/31/18. Duct work appears to be in good shape. Air circulating units are located in the office portion of the building with fan units mounted on the roof and duct work mounted above the ceiling tiles. The duct work mounted above the ceiling tiles was not inspected during site visit.

7. OCCUPANCY

Is basement/lowest level occupied? ☒ Full-time ☐ Occasionally ☐ Seldom ☐ Almost Never

Level General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)

Basement	<u>Not applicable</u>
1 st Floor	<u>Office (7am to 6pm); Manufacturing Area (6am to 9pm)</u>
2 nd Floor	<u>Not applicable</u>
3 rd Floor	<u>Not applicable</u>
4 th Floor	<u>Not applicable</u>

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y ☒ N
- b. Does the garage have a separate heating unit? Y / N ☒ NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N ☒ NA
Please specify _____
- d. Has the building ever had a fire? ☒ Y ☐ N When? Minor, >10 years ago
- e. Is a kerosene or unvented gas space heater present? Y ☒ N Where? _____
- f. Is there a workshop or hobby/craft area? Y ☒ N Where & Type? _____
- g. Is there smoking in the building? Y ☒ N How frequently? _____
- h. Have cleaning products been used recently? ☒ Y ☐ N When & Type? Daily, Office Cleaning
- i. Have cosmetic products been used recently? Y ☒ N When & Type? _____

- j. Has painting/staining been done in the last 6 months? Y ☒ N Where & When? _____
- k. Is there new carpet, drapes or other textiles? Y ☒ N Where & When? _____
- l. Have air fresheners been used recently? ☒ Y / N When & Type? Daily, Bathrooms
- m. Is there a kitchen exhaust fan? Y ☒ N If yes, where vented? _____
- n. Is there a bathroom exhaust fan? ☒ Y / N If yes, where vented? Automatic, roof-vented
- o. Is there a clothes dryer? Y ☒ N If yes, is it vented outside? Y / N
- p. Has there been a pesticide application? Y ☒ N When & Type? _____

Are there odors in the building?

☒ Y / N

If yes, please describe: Odors associated with facility decommissioning; none observed in office area.

Do any of the building occupants use solvents at work?

☒ Y / N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist) Cleaning

If yes, what types of solvents are used? Oxygen bleach cleaner

If yes, are their clothes washed at work?

Y ☒ N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)

Yes, use dry-cleaning infrequently (monthly or less)

Yes, work at a dry-cleaning service

☒ No

Unknown

Is there a radon mitigation system for the building/structure? Y ☒ N Date of Installation: _____

Is the system active or passive? Active/Passive N/A

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency) Not applicable

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

N No basement

First Floor:

N See Figure A-1

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

N See Figure 1-1

13. PRODUCT INVENTORY FORM

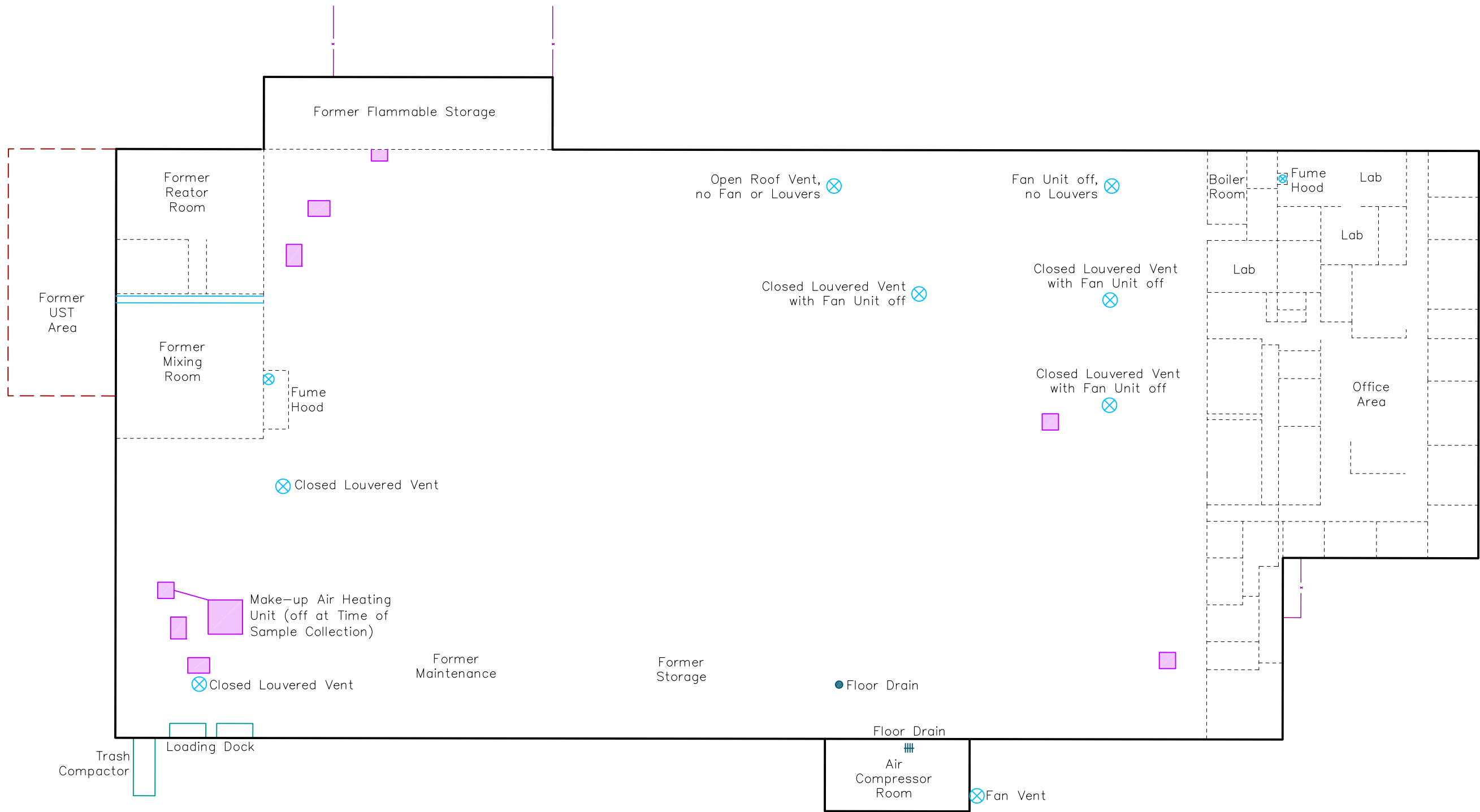
Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition *	Chemical Ingredients	Field Instrument Reading (units)	Photo ** <u>Y / N</u>
Manufact	CRC Contact Cleaner	16oz.	Good	SDS - Not on VOC Target List		
Manufact	Spray Paint	16oz.	Good	SDS - Not on VOC Target List		
Manufact	Zinsser-Spray, stripper	32oz.	Good	SDS - Not on VOC Target List		
Office	Ajax Oxygen Bleach Cleaner	21oz.	Good	SDS - Not on VOC Target List		
Office	Clorox Cleaner + Bleach	---	Good	SDS - Not on VOC Target List		
Office	Comet Bathroom Cleaner	21oz.	Good	SDS - Not on VOC Target List		
Office	Glass Cleaner	32oz.	Good	SDS - Not on VOC Target List		
Office	Pledge Furniture Spray	13.8oz.	Good	SDS - Not on VOC Target List		
Office	Purell Hand Sanitizer	---	Good	SDS - Not on VOC Target List		
Office	Urinal Non- Para Block	---	Good	SDS - Not on VOC Target List		
Office	Wave Urinal Deodorizer	---	Good	SDS - Not on VOC Target List		

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.



Legend

- Building Footprint
- Approximate Building Interior Partition
- Fenceline
- Heater
- Roof-Mounted Passive Vent or Exhaust Fan

Sources

2007 aerial photography from New York State GIS Clearinghouse

Survey Plat by Tectonic Engineering & Surveying Consultants, P.C. dated 12/20/10.

Note: All locations are approximate.

Figure A-1

Facility HVAC Observations - January 31, 2018

Former PAXAR Facility

Orangeburg, New York



100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 03/20/18
Reviewed by: TRO	Date: 03/20/18
Scale: As Shown	Project: 1-0145-15

APPENDIX B FACILITY VOC MATERIALS LIST



Table B-1: Chemical Product Inventory

Avery Dennison Facility
Orangeburg, New York

Product Name	Manufacturer	Area of Use/Storage
Contact Cleaner	CRC	Manufacturing
Spray Paint	Rust-Oleum Corporation	Manufacturing
Spray Stripper	Zinsser	Manufacturing
Ajax Oxygen Bleach Cleaner (powder)	Colgate Palmolive Co.	Office/Labs
Clorox Clean-up Cleaner + Bleach	The Clorox Company	Office/Labs
Comet Bathroom Cleaner	Procter & Gamble Professional	Office/Labs
Glass Cleaner S-19451	Uline Inc.	Office/Labs
Pledge Furniture Spray Lemon Clean	S.C. Johnson & Son, Inc.	Office/Labs
Purell Advanced Instant Hand Sanitizer Foam 5392-02	GOJO Industries, Inc.	Office/Labs
Urinal Non-Para Block S-19424	Uline Inc.	Office/Labs
Wave Urinal Deodorizer Honeysuckle FRESWDS10HSPHS	Fresh Products	Office/Labs

Notes:

1. This chemical inventory was developed by JCO based on information provided by Facility representatives during building survey activities conducted in January 2018.
2. Safety data sheet (SDS) information for products used in the manufacturing areas were obtained by JCO from publically available resources (e.g., manufacturers website); SDSs for products used in the office/support areas were obtained by JCO from publically available resources (e.g., manufacturers website).
3. Based on a review of SDS information, no target analytes are present in the chemical products listed in this chemical inventory. For the purposes of this assessment, target analytes included: tetrachloroethene; trichloroethene; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethene; vinyl chloride; 1,1,1-trichloroethane; carbon tetrachloride; 1,1-dichloroethane; and 1,2-dichloroethane.

APPENDIX C SOIL VAPOR AND INDOOR AIR SAMPLING FIELD DATA



Ambient Air and Soil Vapor Sampling Form

Site Name: AD - Orangeburg NY Personnel: TRO JCO #: 1-0145-15
Canister Size: 62 Barometer/Thermometer Source/ID: TSI Air Velocity Cal 9565P, Pinc # 022803
Pressure Check: Summa Canister ID #: _____ Pressure Gauge Make/Model: Dwyer/DPGA-00/#5755305C07A101
Gauge Calibration Date: 1/4/18 Pre-Sampling Pressure Check: Location: _____ Pressure Gauge Reading: Calibrated 1/4/2018
Post-Sampling Pressure Check: Location: _____ Pressure Gauge Reading: _____

Sample ID	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
Summa Canister ID (not barcode)	<u>N2852</u>	<u>N2550</u>	<u>00422</u>	<u>N3573</u>	<u>N2759</u>	<u>N1657</u>	<u>5599</u>
Flow Controller #	<u>40807</u>	<u>FC00682</u>	<u>FC00804</u>	<u>006706</u>	<u>FC00298</u>	<u>40806</u>	<u>FC00752</u>
Sampling Height (ft)					<u>-0.8'</u>	<u>-0.85'</u>	<u>-0.75'</u>
Date	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>	Start: <u>1/31/18</u>
	End: <u>1/31/18</u>	End: <u>1/31/18</u>	End: <u>1/31/18</u>	End: <u>1/31/18</u>	End: <u>1/31/18</u>	End: <u>1/31/18</u>	End: <u>1/31/18</u>
Time	Start: <u>0842</u>	Start: <u>0836</u>	Start: <u>0908</u>	Start: <u>0855</u>	Start: <u>1011</u>	Start: <u>0953</u>	Start: <u>0923</u>
	End: <u>1643</u>	End: <u>1708</u>	End: <u>1726</u>	End: <u>1714</u>	End: <u>1700</u>	End: <u>1831</u>	End: <u>1705</u>
Flow Controller Vacuum (in Hg)	Start: <u>>30"</u>	Start: <u>>30"</u>	Start: <u>-28"</u>	Start: <u>>30"</u>	Start: <u>>30"</u>	Start: <u>>30"</u>	Start: <u>-29.5"</u>
	End: <u>-6.0"</u>	End: <u>-6.5"</u>	End: <u>-6.0"</u>	End: <u>-6.5"</u>	End: <u>-8.5"</u>	End: <u>-7.5"</u>	End: <u>-5.5"</u>
Digital Pressure Gauge (in Hg)	Start: <u>-30.29"</u>	Start: <u>-30.25"</u>	Start: <u>-30.52"</u>	Start: <u>-30.31"</u>	Start: <u>-30.50"</u>	Start: <u>-30.97"</u>	Start: <u>-30.47"</u>
	End: <u>-5.37"</u>	End: <u>-5.0"</u>	End: <u>-6.10"</u>	End: <u>-5.21"</u>	End: <u>-7.37"</u>	End: <u>-4.82"</u>	End: <u>-6.36"</u>
Ambient Temperature (°F)	Start: <u>76.4</u>	Start: <u>75.9</u>	Start: <u>75.9</u>	Start: <u>77.0</u>	Start: <u>67.8</u>	Start: <u>67.3</u>	Start: <u>70.5</u>
	End: <u>76.5</u>	End: <u>73.4</u>	End: <u>73.7</u>	End: <u>75.5</u>	End: <u>73.4</u>	End: <u>74.6</u>	End: <u>73.2</u>
Barometric Pressure (in Hg)	Start: <u>30.22</u>	Start: <u>30.22</u>	Start: <u>30.23</u>	Start: <u>30.22</u>	Start: <u>30.19</u>	Start: <u>30.19</u>	Start: <u>30.22</u>
	End: <u>30.03</u>	End: <u>30.02</u>	End: <u>30.02</u>	End: <u>30.02</u>	End: <u>30.02</u>	End: <u>30.00</u>	End: <u>30.02</u>
Controller Flow Rate (mL/min)	<u>11.46</u>	<u>11.46</u>	<u>11.46</u>	<u>11.46</u>	<u>11.46</u>	<u>11.46</u>	<u>11.46</u>
COC Number							

Replicate Information: Original Sample Name: SS-05 Replicate Name: SS-Dup01

Replicate Collection Method (Circle one): T-Connection or Side-by-Side or Consecutive or Other (specify): _____

THE JOHNSON COMPANY, INC.
100 State Street, Suite 600
Montpelier, Vermont 05602
(802) 229-4600

SOP-JCO-062-002/JCO-063-003

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Sample ID	SS-08	SS-09	SS-10	SS-11	SS-Dup 01 (= SS-05)		
Summa Canister ID (not barcode)	00193	N1774	N2831	N0762	N1623		
Flow Controller #	FC00183	FC00449	22899	FC00124	006841		
Sampling Height (ft)	-0.7'	-0.8'	-0.9'	-0.85'	-0.8'		
Date	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start:	Start:
	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End:	End:
Time	Start: 1026	Start: 1040	Start: 0938	Start: 1053	Start: 1111	Start:	Start:
	End: 1834	End: 1848	End: 1720	End: 1916	End: 1800	End:	End:
Flow Controller Vacuum (in Hg)	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -28.0"	Start:	Start:
	End: -6.5"	End: -6.0"	End: -6.0"	End: -6.5"	End: -5.0"	End:	End:
Digital Pressure Gauge (in Hg)	Start: -30.79"	Start: -29.48"	Start: -30.97"	Start: -30.82"	Start: -29.95"	Start:	Start:
	End: -5.92"	End: -5.91"	End: -6.35"	End: -5.31"	End: -7.13"	End:	End:
Ambient Temperature (°F)	Start: 68.8	Start: 69.5	Start: 68.7	Start: 69.7	Start: 67.8	Start:	Start:
	End: 74.2	End: 73.6	End: 73.4	End: 73.4	End: 73.4	End:	End:
Barometric Pressure (in Hg)	Start: 30.19	Start: 30.19	Start: 30.22	Start: 30.20	Start: 30.19	Start:	Start:
	End: 30.00	End: 29.99	End: 30.01	End: 29.97	End: 30.02	End:	End:
Controller Flow Rate (mL/min)	11.46	11.46	11.46	11.46	11.46		
COC Number							

Background Sample Information: Sample Name: 09-01 Location: NW corner of Building along opening in Tree line.

Other weather conditions: Clear/Calm to Light Breezy out of NW Wind Speed/Direction (Start): Calm to ~5 mph. out of NW

Wind Speed/Direction (specify interval): 1

Shipping Information: Shipping Method: Fed Ex Date Shipped: 2/1/18

Notes: _____

Ambient Air and Soil Vapor Sampling Form

Site Name: AD - Orangeburg NY Personnel: TRO JCO #: 1-0145-15
Canister Size: 6 L Barometer/Thermometer Source/ID: TSI Air Velocity Cal 9565P Pine #022803
Pressure Check: Summa Canister ID #: — Pressure Gauge Make/Model: Dwyer DPGA-00 / #5755305C07AC01
Gauge Calibration Date: 1/4/2018 Pre-Sampling Pressure Check: Location: — Pressure Gauge Reading: —
Post-Sampling Pressure Check: Location: — Pressure Gauge Reading: —

Sample ID	OA-01	IA-01	IA-02	IA-03	IA-04	IA-05	IA-06
Summa Canister ID (not barcode)	N0592	N0918	N1762	O0365	O0342	N2527	O0395
Flow Controller #	FC00834	FC00300	40809	FC00632	FC00580	FC00441	FC00264
Sampling Height (ft)	4.3'	4.4'	4.0	4.4'	4.7'	4.7'	4.6
Date	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18
	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18
Time	Start: 1132	Start: 1150	Start: 1158	Start: 1216	Start: 1204	Start: 1248	Start: 1242
	End: 1909	End: 1936	End: 1938	End: 1943	End: 2025	End: 2120	End: 2010
Flow Controller Vacuum (in Hg)	Start: -27.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -29.0"
	End: -4.5"	End: -5.5"	End: -6.0"	End: -5.5"	End: -6.0"	End: -7.0"	End: -5.5"
Digital Pressure Gauge (in Hg)	Start: -30.26	Start: -30.50	Start: -30.04	Start: -30.04	Start: -30.36	Start: -30.20	Start: -30.23
	End: -4.74"	End: -6.77"	End: -6.38"	End: -4.20"	End: -6.16"	End: -5.56"	End: -6.91"
Ambient Temperature (°F)	Start: 32.0	Start: 61.8	Start: 67.7	Start: 72.4	Start: 71.0	Start: 70.7	Start: 70.7
	End: 30.0	End: 75.6	End: 75.3	End: 75.7	End: 75.5	End: 71.4	End: 69.4
Barometric Pressure (in Hg)	Start: 30.15	Start: 30.14	Start: 30.15	Start: 30.14	Start: 30.14	Start: 30.11	Start: 30.12
	End: 29.97	End: 29.97	End: 29.98	End: 29.98	End: 29.98	End: 29.97	End: 29.99
Controller Flow Rate (mL/min)	11.46	11.46	11.46	11.46	11.46	11.46	11.46
COC Number							

Replicate Information: Original Sample Name: IA-10 Replicate Name: IA-Dup 01

Replicate Collection Method (Circle one): T-Connection or Side-by Side or Consecutive or Other (specify): —

1-0145-15

Sample ID	IA-07	IA-08	IA-09	IA-10 = IA-Dup 01	IA-11	
Summa Canister ID (not barcode)	N3478	O0348	N2489	N2493	35171	N3521
Flow Controller #	FC00873	FC00902	FC00126	FC00443	006447	40832
Sampling Height (ft)	4.7'	4.5'	4.8'	4.4'	4.4'	4.9'
Date	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18	Start: 1/31/18
	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18	End: 1/31/18
Time	Start: 1222	Start: 1301	Start: 1254	Start: 1234	Start: 1334	Start: 1308
	End: 2028	End: 2119	End: 2056	End: 2052	End: 2152	End: 2134
Flow Controller Vacuum (in Hg)	Start: -30.0"	Start: -28.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"	Start: -30.0"
	End: -6.5"	End: -6.0"	End: -6.0"	End: -5.5"	End: -6.0"	End: -7.5"
Digital Pressure Gauge (in Hg)	Start: -30.16	Start: -30.67	Start: -29.69	Start: -30.61	Start: -30.13	Start: -30.14
	End: -5.67	End: -6.04	End: -5.17	End: -6.15	End: -5.56	End: -6.69
Ambient Temperature (°C)	Start: 71.9	Start: 71.7	Start: 71.0	Start: 71.8	Start: 71.8	Start: 72.1
	End: 70.1	End: 71.3	End: 70.2	End: 70.4	End: 70.4	End: 70.6
Barometric Pressure (in Hg)	Start: 30.14	Start: 30.10	Start: 30.10	Start: 30.12	Start: 30.12	Start: 30.10
	End: 29.96	End: 29.98	End: 29.96	End: 29.96	End: 29.96	End: 29.98
Controller Flow Rate (mL/min)	11.46	11.46	11.46	11.46	11.46	11.46
COC Number						

Background Sample Information: Sample Name: 01A-01 Location: NW Corner of Building along opening in Tree Line

Other weather conditions: Calm / Clear to Light Breeze - NW Wind Speed/Direction (Start): Calm to ~5 mph out of NW

Wind Speed/Direction (specify interval): 1

Shipping Information: Shipping Method: FedEx Date Shipped: 2/1/18

Notes: _____

AD - Orangeburg, NY

1-0145-X

37

IA + Vapor sampling

1/29/18 TPO

1645 JCO onsite

Met with Dave DeRosier w/ Avery
about scope of work. Walked locations
inspect old pnts.

Weather: Overcast 42°F

1800 offsite.

1-30-18

0700 JCO onsite

Weather: Overcast Light snow 28°F

Mark locations

815 - John w/ Enviroprobe Services.

on site for gpr scan and

Re-bar map out

0945 John offsite.

1000 set up for pnt. install

SS-08 concrete Thickness $\approx 0.55'$

Sand underneath. open hole to 0.70'

1-55 pnt, 1 silicon sleeve, 1 Tipcap; 1 Cover^{SS}

SS-09

concrete Thickness = 0.45'

silty sand beneath. hole open to 0.8'

SS-11 Concrete = 0.45' Thick
Brown silty sand Below, Hole open to 0.85'

SS-07 Concrete = 0.40' Thick
Brown silty sand beneath, Open to 0.75'

SS-05 Pnt Reset concrete Thick. 0.35'
Reddish Brown silty sand, Hole open to 0.8'

SS-06 Concrete = 0.45' thick
Reddish Brown silty sand beneath
Open hole to 0.65'

SS-10 Concrete Thickness = 0.40'
Reddish Brown silty sand beneath
Open Hole to 0.90'

SS-01 Helium Leak Test Vac = 0.0 -
1511 Pump on He = 0.0 ppm Backgrd
1513 Apply He Pump Speed ≈ 500 ml/min
1514 He = 0.0 ppm
1515 | = 0.0 |
1516 | = 0.0 |
1517 ↓ = 0.0 ↓
1518 He = 0.0 ppm
End Test

SS-02 He Leak Test
1523 ~~SS-02~~ start He Test Vac = 0.10 - 0.35" Hg
1524 Apply He He Backgrd = 0.0 ppm

1525 He = 0.0 ppm
1526 | = 0.0 | BP = 29.65
1527 | = 0.0 | Temp 72.8
1528 ↓ = 0.0 ↓
1529 He = 0.0 ppm End Test

SS-04 He Leak Test Vac = 0.11" Hg

1534 Start
1535 He Baseline = 0.0 ppm
1536 Apply He
1537 He = 0.0 ppm BP = 29.86
1538 | = 0.0 | Temp = 72.6
1539 | = 0.0 |
1540 ↓ = 0.0 ↓
1541 He = 0.0 ppm End Test

SS-03 He Leak Test Vac = 0.11
1710 Pump on, 1711 Base Line He = 0.0
1712 Apply He
1713 He = 0.0 ppm BP = 29.93
1714 | = 0.0 | Temp = 76.0
1715 ↓ = 0.0 ↓
1716 ↓ = 0.0 ↓
1717 He = 0.0 ppm End Test

40 AD - Orangeburg NY TRO 1-30-18
SS-07 He Leak Test 1-0145/15

1545 Pump on
1550 He Base Line = 975 ppm Vac = -0.25" Hg
1550 Apply He BP = 29.88
1551 He = 1000 ppm Temp = 74.6
1552 = 1050
1553 = 1050
1554 = 1075
1555 He = 1050 ppm End Test

SS-06 He Leak Test Vac = -0.12" Hg.

1601 Pump on 1602 Base Line He = 0.0 ppm
1603 Apply He BP = 29.88
1604 He = 0.0 ppm Temp = 75.1
1605 = 0.0
1606 = 0.0
1607 = 0.0
1608 He = 0.0 ppm End Test

SS-05 He Leak Test Vac = -0.45" Hg

1611 Pump on, Base Line He = 0.0 @ 1612
1613 He on BP = 29.89
1614 He = 0.0 ppm Temp = 74.7
1615 = 0.0
1616 = 0.0
1617 = 0.0
1618 He = 0.0 ppm

AD - Orangeburg NY H0145-15 1/30/18 41
SS-08 He Leak Test Vac = -0.35 TRO

1621 Pump on, 1622 Base Line He = 0.0 ppm
1623 Apply He BP = 29.90
1624 He = 0.0 ppm Temp = 75.9
1625 = 0.0
1626 = 0.0
1627 = 0.0
1628 He = 0.0 ppm End Test

SS-09 He Leak Test Vac = -0.28

1632 Pump on, 1638 Base Line He = 1900 ppm ¹⁹⁰⁰ TRO 1-30-18
1638 Apply He BP = 29.91
1639 He = 1925 ppm Temp = 76.5
1640 = 1950
1641 = 1950
1642 = 1950
1643 He = 1975 ppm End Test

SS-10 He Leak Test Vac = -0.446" Hg.

1647 Pump on, Base Line He = 0.0 ppm
1649 Apply He
1650 He = 75 ppm BP = 29.92
1651 = 25 Temp = 77.2
1652 = 25
1653 = 25
1654 He = 0.0 ppm

Vapor Sampling

TRD

SS-11 He Leak Test Vac = -0.46

1657 Pump on, 1659 Baseline He = 0.0

1659 Apply He

1700 He = 0.0 ppm BP = 29.93

1701 = 0.0 Temp = 72.0

1702 = 0.0

1703 = 0.0

1705 He = 0.0 ppm End Test

1830 JCO off site

1/31/18

0645 JCO on site

Weather: Clear calm - slight breeze 18°F

Set up for SS Vapor sampling.

0725 Dave Herman from NY D&R onsite.
(518) 265-8609

SS-01 Shut in Test

804 = -7.05

816 = -7.03

840 Purged 1.0

815 = -7.04

817 = -7.03

min - 180 ml/min

vac = 0.07

SS-02 Shut in Test

829 = -7.13

831 = -7.12

vac = 0.08

830 = -7.12

832 = -7.11

Purged Pnt
1.0 min

43

Vapor Sampling

TRD

SS-4 Shut in Test

0851 = -7.29

0853 = -7.22

0852 = -7.26

0854 = -7.21

854 Purged pnt. for 1.0 min @ ≈ 180 ml/min
vac = 0.0" Hg

SS-03 Shut in Test

0903 = -8.10

0905 = -8.08

0904 = -8.06

0906 = -8.08

0906 Purged pnt for 1.5 min vac = 0.12

SS-07

918 = -7.30

920 = -7.29

919 = -7.29

921 = -7.29

921 Purged pnt for 1.5 min @ ≈ 180 ml/min
vac = -0.11" Hg

SS-10 Shut in test

933 = -7.05

935 = -7.03

934 = -7.04

936 = -7.03

936 Purged $\approx$ for 1.5 min @ ≈ 180 ml/min

vac = -0.12" Hg

SS-06 Shut in Test

948 = -7.40" H₂ 950 = -7.40

949 = -7.21 951 = -7.39

951 Purged Vapor pnt @ ~100 ml/min for 1.5

Vac = -0.23" H₂

SS-05 +Dup.01 Shut in Test

1006 = -7.46 1008 = -7.49

1007 = -7.48 1009 = -7.49

1009 purged vapor pnt for 2.0 min @ ~160 ml/min

Vac = -0.21" H₂

SS-08 Shut in Test

1021 = -8.27 1023 = -8.28

1022 = -8.28 1024 = -8.29

1024 Purged Vapor pnt @ ~100 ml/min for 1.5 min

Vac = -0.24"

SS-09 Shut in Test

1035 = -7.56 1037 = -7.58

1036 = -7.56 1038 = -7.59

1038 Purged Vapor pnt @ ~100 ml/min for 1.5 min

Vac = -0.16" H₂

SS-11 Shut in Test

1048 = -8.08 1050 = -8.03

1049 = -8.06 1051 = -8.01

1051 Purged Vapor pnt @ ~160 ml/min for 1.5 min

Vac = -0.39

Setup and run SS/IA Vapor samples.

2000 JCO offsite.

2/1/18 0845 JCO on site
overcast 30°F

Pack Summa canisters for shipping.

Check Vapor pnts. for closure

- Plant in Full Shut down mode.

- Fume hood still in place in Lab,
will be removed.

- make up air unit in place not running
during IA sampling.

- Minimal cleaning supplies:

• Ajax - cleanser.

- 01 CRC - CD contact cleaner

- spray paint

- Zinsser - spray on stripper

CERTIFICATE OF CALIBRATION

Dwyer Instruments, Inc. P.O. Box 373 Michigan City, IN 46361
Fax: (219) 872-9057 Phone: (219) 879-8000

Customer: JOHNSON CO.

Address: 100 STATE ST. STE 600
MONTPELIER, VT. 05602

Accuracy: 1 % of Full Scale

Full Scale Range: 15

Units: PSI

Date January 4, 2018

Due January 4, 2019

PO # 8000

Model # DPGA-00

Sales

Order # S951817

RGA # 40329

Certificate No.: 18DWY20-0013

This certifies that the instrument listed below has been calibrated using a standard having an accuracy as listed, and is traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST).

Master Gage Accuracy: .05 % Full Scale

Calibration Standard Information

	Serial No.	Cert. Rpt. No.	Last Cal. Date
Base:	10703	21735	9/1/2017
Module 1:	64393	42819	3/22/2017
Module 2:			

Instrument Information

I.D. No. of Instrument being Calibrated
S755305C07AC02
Customer's I.D. No. (If Different)

Condition Of Meter	New	After Repair	X As received
--------------------	-----	--------------	------------------

Notes:

NEW / AS RECEIVED		
Customer Gage Setting	Dwyer Master Gage Reading	% Full Scale
0.000	0.000	0.00%
-7.130	-7.150	0.13%
-14.250	-14.310	0.40%
-21.380	-21.450	0.47%
-28.500	-28.550	0.33%
		0.00%
		0.00%
		0.00%
		0.00%
		0.00%

AFTER REPAIR OR CAL.		

Signed:

David D. Cohen

Procedure No.: TC-00030

Customer Please Note: When requesting recalibration please mention the I.D. number of your instrument; when requesting other information on the calibrated instrument please mention the Certificate No.

CERTIFICATE OF CALIBRATION

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Fax: (219) 872-9057 Phone: (219) 879-8000

Customer: JOHNSON CO.

Address: 100 STATE ST. STE 600
MONTPELIER, VT. 05602

Date January 4, 2018

Due January 4, 2019

PO # 8000

Model # DPGA-00

Accuracy: 1 % of Full Scale

Sales

Order # S951817

Full Scale Range: 15

Units: PSI

RGA # 40329

Certificate No.: 18DWY20-0012

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	Serial No.	Cert. Rpt. No.	Last Cal. Date
Base:	10703	21735	9/1/2017
Module 1:	64393	42819	3/22/2017
Module 2:			

Instrument Information

I.D. No. of Instrument being Calibrated
S755305C07AC01
Customer's I.D. No. (If Different)

Condition Of Meter	New	After Repair	X As received
--------------------	-----	--------------	------------------

Notes:

NEW / AS RECEIVED		
Customer Gage Setting	Dwyer Master Gage Reading	% Full Scale
0.000	0.000	0.00%
-7.130	-7.200	0.47%
-14.250	-14.250	0.00%
-21.380	-21.400	0.13%
-28.500	-28.550	0.33%
		0.00%
		0.00%
		0.00%
		0.00%
		0.00%

AFTER REPAIR OR CAL.		

Signed:

Dan Cohen

Procedure No.: TC-00030

Customer Please Note: When requesting recalibration please mention the I.D. number of your instrument; when requesting other information on the calibrated instrument please mention the Certificate No.

APPENDIX D LABORATORY ANALYTICAL REPORTS



2/16/2018

Mr. Chris Turner
The Johnson Company
100 State Street
Suite 600
Montpelier VT 05602

Project Name: AD-Orangeburg

Project #: 1-0145-15

Workorder #: 1802094A

Dear Mr. Chris Turner

The following report includes the data for the above referenced project for sample(s) received on 2/5/2018 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Ausha Scott
Project Manager

WORK ORDER #: 1802094A

Work Order Summary

CLIENT:	Mr. Chris Turner The Johnson Company 100 State Street Suite 600 Montpelier, VT 05602	BILL TO:	Accounts Payable The Johnson Company 100 State Street Suite 600 Montpelier, VT 05602
PHONE:	603.232.2974	P.O. #	
FAX:	802.229.5876	PROJECT #	1-0145-15 AD-Orangeburg
DATE RECEIVED:	02/05/2018	CONTACT:	Ausha Scott
DATE COMPLETED:	02/16/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SS-01	Modified TO-15	4.9 "Hg	4.9 psi
02A	SS-02	Modified TO-15	4.3 "Hg	4.9 psi
03A	SS-03	Modified TO-15	4.9 "Hg	5.1 psi
04A	SS-04	Modified TO-15	4.7 "Hg	5.1 psi
05A	SS-05	Modified TO-15	6.3 "Hg	5 psi
06A	SS-06	Modified TO-15	3.7 "Hg	5.1 psi
07A	SS-07	Modified TO-15	5.5 "Hg	4.9 psi
08A	SS-08	Modified TO-15	4.7 "Hg	5 psi
09A	SS-09	Modified TO-15	5.3 "Hg	5.1 psi
10A	SS-10	Modified TO-15	5.3 "Hg	5 psi
11A	SS-11	Modified TO-15	4.1 "Hg	5 psi
12A	SS-Dup01	Modified TO-15	6.5 "Hg	4.6 psi
13A	Lab Blank	Modified TO-15	NA	NA
14A	CCV	Modified TO-15	NA	NA
15A	LCS	Modified TO-15	NA	NA
15AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 02/16/18

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
 Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
The Johnson Company
Workorder# 1802094A

Twelve 6 Liter Summa Canister (SIM Certified) samples were received on February 05, 2018. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples SS-01, SS-06, SS-09 and SS-10 due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SS-01

Lab ID#: 1802094A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.32	0.52	1.3	2.0
cis-1,2-Dichloroethene	0.32	14	1.3	58
Trichloroethene	0.32	34	1.7	180
Tetrachloroethene	0.32	70	2.2	470

Client Sample ID: SS-02

Lab ID#: 1802094A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.16	0.69	1.0	4.7

Client Sample ID: SS-03

Lab ID#: 1802094A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.16	0.20	0.86	1.1
Tetrachloroethene	0.16	1.5	1.1	10

Client Sample ID: SS-04

Lab ID#: 1802094A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.16	1.2	1.1	8.1

Client Sample ID: SS-05

Lab ID#: 1802094A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.17	9.7	0.69	39
1,1,1-Trichloroethane	0.17	1.7	0.93	9.5
Carbon Tetrachloride	0.17	0.57	1.1	3.6
Trichloroethene	0.17	1.8	0.91	9.5

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SS-05

Lab ID#: 1802094A-05A

Tetrachloroethene	0.17	18	1.2	120
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Client Sample ID: SS-06

Lab ID#: 1802094A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.31	1.3	1.7	7.3
Tetrachloroethene	0.31	51	2.1	340

Client Sample ID: SS-07

Lab ID#: 1802094A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.16	0.74	0.89	4.0
Tetrachloroethene	0.16	5.8	1.1	40

Client Sample ID: SS-08

Lab ID#: 1802094A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.16	0.21	0.64	0.87
1,1,1-Trichloroethane	0.16	2.7	0.87	14
Carbon Tetrachloride	0.16	0.41	1.0	2.6
Trichloroethene	0.16	0.51	0.85	2.8
Tetrachloroethene	0.16	4.3	1.1	29

Client Sample ID: SS-09

Lab ID#: 1802094A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.55	1.2	3.0	6.5
Tetrachloroethene	0.55	140	3.7	930

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SS-10

Lab ID#: 1802094A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.33	0.46	1.8	2.5
Tetrachloroethene	0.33	54	2.2	370

Client Sample ID: SS-11

Lab ID#: 1802094A-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.16	0.21	0.98	1.3
Tetrachloroethene	0.16	2.5	1.0	17

Client Sample ID: SS-Dup01

Lab ID#: 1802094A-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.17	9.4	0.68	38
1,1,1-Trichloroethane	0.17	1.6	0.92	8.7
Carbon Tetrachloride	0.17	0.56	1.0	3.6
Trichloroethene	0.17	1.8	0.90	9.8
Tetrachloroethene	0.17	19	1.1	130



Air Toxics

Client Sample ID: SS-01

Lab ID#: 1802094A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020711	Date of Collection:	1/31/18 4:43:00 PM
Dil. Factor:	3.18	Date of Analysis:	2/7/18 03:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.32	Not Detected	0.81	Not Detected
1,1-Dichloroethene	0.32	Not Detected	1.3	Not Detected
trans-1,2-Dichloroethene	0.32	0.52	1.3	2.0
1,1-Dichloroethane	0.32	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.32	14	1.3	58
1,1,1-Trichloroethane	0.32	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.32	Not Detected	2.0	Not Detected
1,2-Dichloroethane	0.32	Not Detected	1.3	Not Detected
Trichloroethene	0.32	34	1.7	180
Tetrachloroethene	0.32	70	2.2	470

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Client Sample ID: SS-02

Lab ID#: 1802094A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020712	Date of Collection:	1/31/18 5:08:00 PM
Dil. Factor:	1.56	Date of Analysis:	2/7/18 04:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.98	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Trichloroethene	0.16	Not Detected	0.84	Not Detected
Tetrachloroethene	0.16	0.69	1.0	4.7

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: SS-03

Lab ID#: 1802094A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020713	Date of Collection:	1/31/18 5:26:00 PM
Dil. Factor:	1.61	Date of Analysis:	2/7/18 04:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Trichloroethene	0.16	0.20	0.86	1.1
Tetrachloroethene	0.16	1.5	1.1	10

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	111	70-130

Client Sample ID: SS-04

Lab ID#: 1802094A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020714	Date of Collection:	1/31/18 5:14:00 PM
Dil. Factor:	1.60	Date of Analysis:	2/7/18 05:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Trichloroethene	0.16	Not Detected	0.86	Not Detected
Tetrachloroethene	0.16	1.2	1.1	8.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Client Sample ID: SS-05

Lab ID#: 1802094A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020715	Date of Collection:	1/31/18 5:00:00 PM
Dil. Factor:	1.70	Date of Analysis:	2/7/18 05:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.17	9.7	0.69	39
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1,1-Trichloroethane	0.17	1.7	0.93	9.5
Carbon Tetrachloride	0.17	0.57	1.1	3.6
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Trichloroethene	0.17	1.8	0.91	9.5
Tetrachloroethene	0.17	18	1.2	120

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: SS-06

Lab ID#: 1802094A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020720	Date of Collection:	1/31/18 6:31:00 PM
Dil. Factor:	3.06	Date of Analysis:	2/7/18 09:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.31	Not Detected	0.78	Not Detected
1,1-Dichloroethene	0.31	Not Detected	1.2	Not Detected
trans-1,2-Dichloroethene	0.31	Not Detected	1.2	Not Detected
1,1-Dichloroethane	0.31	Not Detected	1.2	Not Detected
cis-1,2-Dichloroethene	0.31	Not Detected	1.2	Not Detected
1,1,1-Trichloroethane	0.31	1.3	1.7	7.3
Carbon Tetrachloride	0.31	Not Detected	1.9	Not Detected
1,2-Dichloroethane	0.31	Not Detected	1.2	Not Detected
Trichloroethene	0.31	Not Detected	1.6	Not Detected
Tetrachloroethene	0.31	51	2.1	340

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: SS-07

Lab ID#: 1802094A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020716	Date of Collection:	1/31/18 5:05:00 PM
Dil. Factor:	1.63	Date of Analysis:	2/7/18 06:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.42	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1,1-Trichloroethane	0.16	0.74	0.89	4.0
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	5.8	1.1	40

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: SS-08

Lab ID#: 1802094A-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020717	Date of Collection:	1/31/18 6:34:00 PM
Dil. Factor:	1.59	Date of Analysis:	2/7/18 07:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.16	0.21	0.64	0.87
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1,1-Trichloroethane	0.16	2.7	0.87	14
Carbon Tetrachloride	0.16	0.41	1.0	2.6
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	0.51	0.85	2.8
Tetrachloroethene	0.16	4.3	1.1	29

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: SS-09

Lab ID#: 1802094A-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020721	Date of Collection:	1/31/18 6:48:00 PM
Dil. Factor:	5.47	Date of Analysis:	2/7/18 10:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.55	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.55	Not Detected	2.2	Not Detected
trans-1,2-Dichloroethene	0.55	Not Detected	2.2	Not Detected
1,1-Dichloroethane	0.55	Not Detected	2.2	Not Detected
cis-1,2-Dichloroethene	0.55	Not Detected	2.2	Not Detected
1,1,1-Trichloroethane	0.55	1.2	3.0	6.5
Carbon Tetrachloride	0.55	Not Detected	3.4	Not Detected
1,2-Dichloroethane	0.55	Not Detected	2.2	Not Detected
Trichloroethene	0.55	Not Detected	2.9	Not Detected
Tetrachloroethene	0.55	140	3.7	930

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	118	70-130



Air Toxics

Client Sample ID: SS-10

Lab ID#: 1802094A-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020722	Date of Collection:	1/31/18 5:20:00 PM
Dil. Factor:	3.26	Date of Analysis:	2/7/18 10:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.33	Not Detected	0.83	Not Detected
1,1-Dichloroethene	0.33	Not Detected	1.3	Not Detected
trans-1,2-Dichloroethene	0.33	Not Detected	1.3	Not Detected
1,1-Dichloroethane	0.33	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.33	Not Detected	1.3	Not Detected
1,1,1-Trichloroethane	0.33	0.46	1.8	2.5
Carbon Tetrachloride	0.33	Not Detected	2.0	Not Detected
1,2-Dichloroethane	0.33	Not Detected	1.3	Not Detected
Trichloroethene	0.33	Not Detected	1.8	Not Detected
Tetrachloroethene	0.33	54	2.2	370

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	113	70-130



Air Toxics

Client Sample ID: SS-11

Lab ID#: 1802094A-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020718	Date of Collection:	1/31/18 7:16:00 PM
Dil. Factor:	1.55	Date of Analysis:	2/7/18 08:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.84	Not Detected
Carbon Tetrachloride	0.16	0.21	0.98	1.3
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Trichloroethene	0.16	Not Detected	0.83	Not Detected
Tetrachloroethene	0.16	2.5	1.0	17

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: SS-Dup01

Lab ID#: 1802094A-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020719	Date of Collection:	1/31/18 6:00:00 PM
Dil. Factor:	1.68	Date of Analysis:	2/7/18 08:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.17	9.4	0.68	38
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1,1-Trichloroethane	0.17	1.6	0.92	8.7
Carbon Tetrachloride	0.17	0.56	1.0	3.6
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Trichloroethene	0.17	1.8	0.90	9.8
Tetrachloroethene	0.17	19	1.1	130

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	110	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1802094A-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020707	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/7/18 12:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	115	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1802094A-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020703	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/7/18 09:10 AM

Compound	%Recovery
Vinyl Chloride	80
1,1-Dichloroethene	81
trans-1,2-Dichloroethene	81
1,1-Dichloroethane	80
cis-1,2-Dichloroethene	80
1,1,1-Trichloroethane	88
Carbon Tetrachloride	70
1,2-Dichloroethane	98
Trichloroethene	97
Tetrachloroethene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1802094A-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020704	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/7/18 09:58 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	79	70-130
1,1-Dichloroethene	80	70-130
trans-1,2-Dichloroethene	71	70-130
1,1-Dichloroethane	80	70-130
cis-1,2-Dichloroethene	86	70-130
1,1,1-Trichloroethane	88	70-130
Carbon Tetrachloride	84	70-130
1,2-Dichloroethane	100	70-130
Trichloroethene	99	70-130
Tetrachloroethene	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1802094A-15AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v020705	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/7/18 10:56 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	76	70-130
1,1-Dichloroethene	79	70-130
trans-1,2-Dichloroethene	70	70-130
1,1-Dichloroethane	78	70-130
cis-1,2-Dichloroethene	85	70-130
1,1,1-Trichloroethane	85	70-130
Carbon Tetrachloride	82	70-130
1,2-Dichloroethane	101	70-130
Trichloroethene	98	70-130
Tetrachloroethene	104	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	106	70-130

2/16/2018

Mr. Chris Turner
The Johnson Company
100 State Street
Suite 600
Montpelier VT 05602

Project Name: AD-Orangeburg

Project #: 1-0145-15

Workorder #: 1802094B

Dear Mr. Chris Turner

The following report includes the data for the above referenced project for sample(s) received on 2/5/2018 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Ausha Scott
Project Manager

WORK ORDER #: 1802094B

Work Order Summary

CLIENT:	Mr. Chris Turner The Johnson Company 100 State Street Suite 600 Montpelier, VT 05602	BILL TO:	Accounts Payable The Johnson Company 100 State Street Suite 600 Montpelier, VT 05602
PHONE:	603.232.2974	P.O. #	
FAX:	802.229.5876	PROJECT #	1-0145-15 AD-Orangeburg
DATE RECEIVED:	02/05/2018	CONTACT:	Ausha Scott
DATE COMPLETED:	02/16/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
13A	OA-01	Modified TO-15 SIM	3.1 "Hg	4.9 psi
14A	IA-01	Modified TO-15 SIM	5.7 "Hg	5 psi
15A	IA-02	Modified TO-15 SIM	5.9 "Hg	4.8 psi
16A	IA-03	Modified TO-15 SIM	3.9 "Hg	5 psi
17A	IA-04	Modified TO-15 SIM	5.3 "Hg	4.8 psi
18A	IA-05	Modified TO-15 SIM	4.9 "Hg	5 psi
19A	IA-06	Modified TO-15 SIM	6.1 "Hg	5.1 psi
20A	IA-07	Modified TO-15 SIM	5.3 "Hg	4.8 psi
21A	IA-08	Modified TO-15 SIM	5.1 "Hg	5.1 psi
22A	IA-09	Modified TO-15 SIM	4.3 "Hg	5.1 psi
23A	IA-10	Modified TO-15 SIM	5.3 "Hg	5 psi
24A	IA-11	Modified TO-15 SIM	6.3 "Hg	4.9 psi
25A	IA-Dup01	Modified TO-15 SIM	5.1 "Hg	5 psi
26A	Lab Blank	Modified TO-15 SIM	NA	NA
26B	Lab Blank	Modified TO-15 SIM	NA	NA
27A	CCV	Modified TO-15 SIM	NA	NA
27B	CCV	Modified TO-15 SIM	NA	NA
28A	LCS	Modified TO-15 SIM	NA	NA
28AA	LCSD	Modified TO-15 SIM	NA	NA
28B	LCS	Modified TO-15 SIM	NA	NA
28BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY:



Technical Director

DATE: 02/16/18

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
The Johnson Company
Workorder# 1802094B

Thirteen 6 Liter Summa Canister (SIM Certified) samples were received on February 05, 2018. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: OA-01

Lab ID#: 1802094B-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.030	0.063	0.19	0.40

Client Sample ID: IA-01

Lab ID#: 1802094B-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.033	0.069	0.21	0.43
Tetrachloroethene	0.033	0.083	0.22	0.56

Client Sample ID: IA-02

Lab ID#: 1802094B-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.033	0.062	0.21	0.39
Tetrachloroethene	0.033	0.10	0.22	0.69

Client Sample ID: IA-03

Lab ID#: 1802094B-16A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.031	0.070	0.19	0.44
Tetrachloroethene	0.031	0.077	0.21	0.52

Client Sample ID: IA-04

Lab ID#: 1802094B-17A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.064	0.20	0.40
Tetrachloroethene	0.032	0.090	0.22	0.61

Client Sample ID: IA-05

Lab ID#: 1802094B-18A

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: IA-05

Lab ID#: 1802094B-18A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.068	0.20	0.42
Tetrachloroethene	0.032	0.035	0.22	0.24

Client Sample ID: IA-06

Lab ID#: 1802094B-19A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.034	0.064	0.21	0.40
Tetrachloroethene	0.034	0.044	0.23	0.30

Client Sample ID: IA-07

Lab ID#: 1802094B-20A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.067	0.20	0.42
Tetrachloroethene	0.032	0.046	0.22	0.31

Client Sample ID: IA-08

Lab ID#: 1802094B-21A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.067	0.20	0.42
Tetrachloroethene	0.032	0.035	0.22	0.24

Client Sample ID: IA-09

Lab ID#: 1802094B-22A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.031	0.059	0.20	0.37
Tetrachloroethene	0.031	0.047	0.21	0.32

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: IA-10

Lab ID#: 1802094B-23A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.033	0.065	0.20	0.41
Tetrachloroethene	0.033	0.046	0.22	0.31

Client Sample ID: IA-11

Lab ID#: 1802094B-24A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.034	0.054	0.23	0.37

Client Sample ID: IA-Dup01

Lab ID#: 1802094B-25A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.069	0.20	0.44
Tetrachloroethene	0.032	0.053	0.22	0.36

Client Sample ID: OA-01

Lab ID#: 1802094B-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020813sim	Date of Collection: 1/31/18 7:09:00 PM
Dil. Factor:	1.48	Date of Analysis: 2/8/18 05:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.038	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.059	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
1,1-Dichloroethane	0.030	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.030	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.030	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.030	0.063	0.19	0.40
1,2-Dichloroethane	0.030	Not Detected	0.12	Not Detected
Trichloroethene	0.030	Not Detected	0.16	Not Detected
Tetrachloroethene	0.030	Not Detected	0.20	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	117	70-130



Air Toxics

Client Sample ID: IA-01

Lab ID#: 1802094B-14A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020814sim	Date of Collection: 1/31/18 7:36:00 PM
Dil. Factor:	1.66	Date of Analysis: 2/8/18 05:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.017	Not Detected	0.042	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.066	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.033	0.069	0.21	0.43
1,2-Dichloroethane	0.033	Not Detected	0.13	Not Detected
Trichloroethene	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	0.083	0.22	0.56

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: IA-02

Lab ID#: 1802094B-15A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020815sim	Date of Collection: 1/31/18 7:38:00 PM
Dil. Factor:	1.65	Date of Analysis: 2/8/18 06:29 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.042	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.065	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.033	0.062	0.21	0.39
1,2-Dichloroethane	0.033	Not Detected	0.13	Not Detected
Trichloroethene	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	0.10	0.22	0.69

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	118	70-130

Client Sample ID: IA-03

Lab ID#: 1802094B-16A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020816sim	Date of Collection: 1/31/18 7:43:00 PM
Dil. Factor:	1.54	Date of Analysis: 2/8/18 07:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.061	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Carbon Tetrachloride	0.031	0.070	0.19	0.44
1,2-Dichloroethane	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.16	Not Detected
Tetrachloroethene	0.031	0.077	0.21	0.52

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: IA-04

Lab ID#: 1802094B-17A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020817sim	Date of Collection: 1/31/18 8:25:00 PM
Dil. Factor:	1.61	Date of Analysis: 2/8/18 08:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.032	0.064	0.20	0.40
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	0.090	0.22	0.61

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	113	70-130

Client Sample ID: IA-05

Lab ID#: 1802094B-18A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020818sim	Date of Collection: 1/31/18 9:20:00 PM
Dil. Factor:	1.60	Date of Analysis: 2/8/18 08:47 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.063	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.17	Not Detected
Carbon Tetrachloride	0.032	0.068	0.20	0.42
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	0.035	0.22	0.24

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: IA-06

Lab ID#: 1802094B-19A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020819sim	Date of Collection: 1/31/18 8:10:00 PM
Dil. Factor:	1.69	Date of Analysis: 2/8/18 09:22 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.017	Not Detected	0.043	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.067	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.034	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.034	0.064	0.21	0.40
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	Not Detected	0.18	Not Detected
Tetrachloroethene	0.034	0.044	0.23	0.30

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: IA-07

Lab ID#: 1802094B-20A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020820sim	Date of Collection: 1/31/18 8:28:00 PM
Dil. Factor:	1.61	Date of Analysis: 2/8/18 09:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.032	0.067	0.20	0.42
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	0.046	0.22	0.31

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: IA-08

Lab ID#: 1802094B-21A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020821sim	Date of Collection: 1/31/18 9:19:00 PM
Dil. Factor:	1.62	Date of Analysis: 2/8/18 10:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.032	0.067	0.20	0.42
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	0.035	0.22	0.24

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: IA-09

Lab ID#: 1802094B-22A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020822sim	Date of Collection: 1/31/18 8:56:00 PM
Dil. Factor:	1.57	Date of Analysis: 2/9/18 06:32 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Carbon Tetrachloride	0.031	0.059	0.20	0.37
1,2-Dichloroethane	0.031	Not Detected	0.13	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	0.047	0.21	0.32

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Client Sample ID: IA-10

Lab ID#: 1802094B-23A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020823sim	Date of Collection: 1/31/18 8:52:00 PM
Dil. Factor:	1.63	Date of Analysis: 2/9/18 07:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.042	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.065	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.033	0.065	0.20	0.41
1,2-Dichloroethane	0.033	Not Detected	0.13	Not Detected
Trichloroethene	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	0.046	0.22	0.31

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	111	70-130

Client Sample ID: IA-11

Lab ID#: 1802094B-24A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020921sim	Date of Collection: 1/31/18 9:34:00 PM
Dil. Factor:	1.69	Date of Analysis: 2/9/18 09:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.017	Not Detected	0.043	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.067	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.034	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.034	Not Detected	0.21	Not Detected
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	Not Detected	0.18	Not Detected
Tetrachloroethene	0.034	0.054	0.23	0.37

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	78	70-130

Client Sample ID: IA-Dup01

Lab ID#: 1802094B-25A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020922sim	Date of Collection: 1/31/18 9:52:00 PM
Dil. Factor:	1.61	Date of Analysis: 2/9/18 10:15 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.032	0.069	0.20	0.44
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	0.053	0.22	0.36

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	77	70-130

Client Sample ID: Lab Blank

Lab ID#: 1802094B-26A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020808sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/8/18 01:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	115	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1802094B-26B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020908sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/18 11:19 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	86	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1802094B-27A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020802sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/8/18 08:26 AM

Compound	%Recovery
Vinyl Chloride	70
1,1-Dichloroethene	72
trans-1,2-Dichloroethene	80
1,1-Dichloroethane	79
cis-1,2-Dichloroethene	79
1,1,1-Trichloroethane	89
Carbon Tetrachloride	108
1,2-Dichloroethane	111
Trichloroethene	100
Tetrachloroethene	105

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1802094B-27B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020904sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/18 08:19 AM

Compound	%Recovery
Vinyl Chloride	89
1,1-Dichloroethene	84
trans-1,2-Dichloroethene	86
1,1-Dichloroethane	90
cis-1,2-Dichloroethene	86
1,1,1-Trichloroethane	85
Carbon Tetrachloride	87
1,2-Dichloroethane	86
Trichloroethene	80
Tetrachloroethene	80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1802094B-28A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020805sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/8/18 11:26 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	72	70-130
1,1-Dichloroethene	77	70-130
trans-1,2-Dichloroethene	72	70-130
1,1-Dichloroethane	83	70-130
cis-1,2-Dichloroethene	91	70-130
1,1,1-Trichloroethane	92	70-130
Carbon Tetrachloride	112	60-140
1,2-Dichloroethane	116	70-130
Trichloroethene	105	70-130
Tetrachloroethene	111	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: LCSD

Lab ID#: 1802094B-28AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	v020806sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/8/18 12:27 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	73	70-130
1,1-Dichloroethene	77	70-130
trans-1,2-Dichloroethene	72	70-130
1,1-Dichloroethane	84	70-130
cis-1,2-Dichloroethene	92	70-130
1,1,1-Trichloroethane	92	70-130
Carbon Tetrachloride	112	60-140
1,2-Dichloroethane	116	70-130
Trichloroethene	106	70-130
Tetrachloroethene	111	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1802094B-28B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020906sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/18 09:26 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	86	70-130
1,1-Dichloroethene	78	70-130
trans-1,2-Dichloroethene	70	70-130
1,1-Dichloroethane	85	70-130
cis-1,2-Dichloroethene	88	70-130
1,1,1-Trichloroethane	81	70-130
Carbon Tetrachloride	65	60-140
1,2-Dichloroethane	83	70-130
Trichloroethene	76	70-130
Tetrachloroethene	79	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	86	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1802094B-28BB

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21020907sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/18 10:07 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	86	70-130
1,1-Dichloroethene	78	70-130
trans-1,2-Dichloroethene	70	70-130
1,1-Dichloroethane	86	70-130
cis-1,2-Dichloroethene	89	70-130
1,1,1-Trichloroethane	82	70-130
Carbon Tetrachloride	66	60-140
1,2-Dichloroethane	84	70-130
Trichloroethene	76	70-130
Tetrachloroethene	80	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	86	70-130

APPENDIX E DATA USABILITY SUMMARY REPORT





DATA USABILITY SUMMARY REPORT

FOR

**AD-Orangeburg Project (1-0145-15)
ORANGEBURG, NY
NYSDEC Site No. 344072**

**ORGANIC ANALYSIS DATA
Volatile Compounds in Air Samples**

**Sample Delivery Group (SDG) Nos.
1802094A and 1802094B**

Chemical Analyses Performed by:

**Eurofins Air Toxics, Inc.
Folsom, CA 95630-4719**

FOR

**The Johnson Co.
Montpelier, VT 05602**

Data Validation By:

**ddms, inc.
St. Paul, Minnesota 55108**

March 9, 2018

**2091-0010/PSN
\\Jan2018_Voa.docx**

EXECUTIVE SUMMARY

Validation of the volatile organic data prepared by Eurofins Air Toxics laboratory for 12 sub-slab air samples and 13 indoor air samples from the former Avery Dennison Site in Orangeburg, NY (NYSDEC Site No. 344072) has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under SDG Nos. 1802094A and 1802094B. The following samples were reported:

1802094A

SS-01	SS-02	SS-03	SS-04
SS-05	SS-06	SS-07	SS-08
SS-09	SS-10	SS-11	SS-Dup01

1802094B

OA-01	IA-01	IA-02	IA-03
IA-04	IA-05	IA-06	IA-07
IA-08	IA-09	IA-10	IA-11
IA-Dup01			

Below is the Data Usability Summary Report (DUSR) associated with these samples.

Data Usability Summary Report	
1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?	Yes
2. Have all holding times been met?	Yes
3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, replicate analyses, laboratory controls, and sample data fall within the protocol required limits and specifications?	Yes
4. Have all of the data been generated using established and agreed upon analytical protocols?	Yes
5. Does an evaluation of the raw data confirm the results provided in the data summary sheet and the quality control verification forms?	Yes
6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?	Yes

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data packages been attached to the DUSR?	N/A
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All results were determined to be valid as reported. Details of the validation findings and conclusions based on review of the results for each quality control requirement are provided in the remaining sections of this report.

Documentation issues are discussed in Section XIII.

This report should be considered part of the data package for all future distributions of the volatiles data.

INTRODUCTION

Analyses were performed according to U.S. EPA Compendium Method TO-15, as documented in Eurofins Air Toxics Standard Operating Procedure (SOP) #83, Rev. 14, and by Method TO-15 modified for selected ion monitoring (SIM), as documented in SOP #38, Rev. 19. The compound list was specified by the client, and includes ten volatile compounds. Site contaminants of concern are chlorinated solvents, primarily tetrachloroethene, trichloroethene, carbon tetrachloride, and 1,1,1-trichloroethane, and their degradation products. This methodology does not stipulate a reporting format; however, the laboratory provided a "CLP-type" data package for review.

The validation was performed in accordance with ddms' Standard Operating Procedure Validation and Review of Standard Operating Procedure Validation and Review of Organic Air Data (ECS-SOP-001), Standard Operating Procedure Validation and Review of Organic Analyses Using SIM Data (ECS-SOP-004), and the requirements of the analytical method. Professional judgment was applied as necessary and appropriate.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis, for chemical analyses conducted under the referenced methods. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate quality review by the laboratory, to ensure a defensible data package has been submitted for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the evaluation, qualifier codes may be added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the National Function Guidelines:

Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies

	in meeting QC criteria. The analyte may or may not be present in the sample.
--	--

These codes are recorded on the data summary forms contained in Attachment A of this validation report to qualify the results as appropriate according to the review of the data package.

All data users should note two facts. First, the "R" qualifier means that the laboratory-reported value is unusable. In other words, due to significant quality control problems, the analysis is invalid and provides no information as to whether the analyte is present or not. Rejected values should not appear on data tables because they cannot be relied upon, even as a last resort. Second, no concentration is guaranteed to be accurate even if all associated quality control is acceptable. Strict quality control conformance serves only to increase confidence in reported results; any analytical result will always contain some error.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

I. Holding Times, Preservation and Sample Integrity

Copies of the applicable chain of custody (COC) records were included in the data package, documenting a sample collection date of January 31, 2018. Samples were received by the laboratory on February 5, 2018. The samples were analyzed within the method specific holding time of 30 days from sample collection.

II. GC/MS Instrument Performance Check

Summary forms were provided for bromofluorobenzene (BFB) instrument performance checks run on GC/MS instrument 'msdv.i', representing each period during which the samples or associated standards were analyzed. All of the performance checks were fully documented and were acceptable.

III. Calibration

A. Initial Calibration (IC)

Summary results for two initial calibrations (ICs) were reported in support of all sample analyses. Documentation of all IC standards was present in the data packages. Although the standards included more compounds than were specifically applicable to these analyses, only project-specified target analytes were reviewed. Documentation of manual integrations were included in the data packages and appear to have been appropriately performed based on the raw data provided. Percent relative standard deviations (RSD) and relative response factors were acceptable for all reported target analytes in the associated ICs. IC verification standards were analyzed as appropriate. Percent differences were acceptable.

B. Continuing Calibration (CC)

Two CC standards were run in support of sample analysis. Documentation for each CC was present in the data packages, and the percent differences (%D) were acceptable.

Two second source standards were also analyzed, and supporting documentation was present in the data packages. Percent differences were acceptable.

IV. Blanks

Laboratory method blanks were analyzed with each analytical batch in support of these samples. No target analytes were detected in the method blanks.

V. Surrogate Compound Recovery

All surrogates were correctly calculated, accurately reported, and within acceptance limits for all samples.

VI. Laboratory Control Sample (LCS)/LCS Duplicate (LCSD)

LCS/LCSD analyses were performed at the appropriate frequencies. All percent recoveries and relative percent differences (RPD) were acceptable.

VII. Field Duplicate

Field duplicate submitted are summarized below:

Duplicate ID	Location ID	SDG
SS-Dup01	SS-05	1802094A
IA-Dup01	IA-01	1802094B

Precision between paired results was acceptable.

VIII. Internal Standard Performance

All internal standard areas and retention times were within quality control limits for the applicable analyses.

IX. Target Compound Identification

Target analytes were detected in many of the samples in these SDGs, and an acceptable mass spectrum was provided for each sample in which the compound was detected.

X. Compound Quantitation and Reporting Limits

Target compound concentrations and RLs were correctly calculated and accurately reported for all samples and spike samples. All non-detected results in samples were at or below applicable screening limits documented in the Work Plan.

The Data Summary Forms in Attachment A list individual sample results as well as the sample specific reporting limit for each compound. Where RL has been "greyed out", the RL was not qualified.

XI. Tentatively Identified Compounds (TIC)

Tentative identification of non-target compounds (TICs) was not requested for these analyses.

XII. System Performance

The analytical systems appear to have been working satisfactorily at the time of these analyses, based on evaluation of the available raw data.

XIII. Documentation

The chain-of-custody records were present and accurately completed for the samples reported in these data packages. The laboratory appended the sample date to the end of the sample location identification in order to meet database requirements. This report reflects the original sample identifications assigned at collection.

XIV. Overall Assessment

All results were determined to be valid as reported based on the available raw data.

Documentation issues observed in the data package are described in Section XIII.

This validation report should be considered part of the data package for all future distributions of the volatiles data.

ATTACHMENT A

DATA SUMMARY FORMS

SDG Nos.

1802094A and 1802094B

Volatiles in Air

Field Sample ID Lab Sample ID Dilution Factor			SS-01_20180131 1802094A-01A 3.18		SS-02_20180131 1802094A-02A 1.56		SS-03_20180131 1802094A-03A 1.61		SS-04_20180131 1802094A-04A 1.6		SS-05_20180131 1802094A-05A 1.7		SS-06_20180131 1802094A-06A 3.06		SS-07_20180131 1802094A-07A 1.63	
Analytical Method	Parameter	Unit														
TO-15	1,1,1-Trichloroethane	ug/m3	1.7	U	0.85	U	0.88	U	0.87	U	9.5		7.3		4.0	
TO-15	1,1-Dichloroethane	ug/m3	1.3	U	0.63	U	0.65	U	0.65	U	39		1.2	U	0.66	U
TO-15	1,1-Dichloroethene	ug/m3	1.3	U	0.62	U	0.64	U	0.63	U	0.67	U	1.2	U	0.65	U
TO-15	1,2-Dichloroethane	ug/m3	1.3	U	0.63	U	0.65	U	0.65	U	0.69	U	1.2	U	0.66	U
TO-15	Carbon Tetrachloride	ug/m3	2	U	0.98	U	1	U	1	U	3.6		1.9	U	1	U
TO-15	cis-1,2-Dichloroethene	ug/m3	58		0.62	U	0.64	U	0.63	U	0.67	U	1.2	U	0.65	U
TO-15	Tetrachloroethene	ug/m3	470		4.7		10		8.1		120		340		40	
TO-15	trans-1,2-Dichloroethene	ug/m3	2.0		0.62	U	0.64	U	0.63	U	0.67	U	1.2	U	0.65	U
TO-15	Trichloroethene	ug/m3	180		0.84	U	1.1		0.86	U	9.5		1.6	U	0.88	U
TO-15	Vinyl Chloride	ug/m3	0.81	U	0.4	U	0.41	U	0.41	U	0.43	U	0.78	U	0.42	U

Field Sample ID Lab Sample ID Dilution Factor			SS-08_20180131 1802094A-08A 1.59		SS-09_20180131 1802094A-09A 5.47		SS-10_20180131 1802094A-10A 3.26		SS-11_20180131 1802094A-11A 1.55		SS-DUP01_20180131 1802094A-12A 1.68	
Analytical Method	Parameter	Unit										
TO-15	1,1,1-Trichloroethane	ug/m3	14		6.5		2.5		0.84	U	8.7	
TO-15	1,1-Dichloroethane	ug/m3	0.87		2.2	U	1.3	U	0.63	U	38	
TO-15	1,1-Dichloroethene	ug/m3	0.63	U	2.2	U	1.3	U	0.61	U	0.67	U
TO-15	1,2-Dichloroethane	ug/m3	0.64	U	2.2	U	1.3	U	0.63	U	0.68	U
TO-15	Carbon Tetrachloride	ug/m3	2.6		3.4	U	2	U	1.3		3.6	
TO-15	cis-1,2-Dichloroethene	ug/m3	0.63	U	2.2	U	1.3	U	0.61	U	0.67	U
TO-15	Tetrachloroethene	ug/m3	29		930		370		17		130	
TO-15	trans-1,2-Dichloroethene	ug/m3	0.63	U	2.2	U	1.3	U	0.61	U	0.67	U
TO-15	Trichloroethene	ug/m3	2.8		2.9	U	1.8	U	0.83	U	9.8	
TO-15	Vinyl Chloride	ug/m3	0.41	U	1.4	U	0.83	U	0.4	U	0.43	U

Field Sample ID Lab Sample ID Dilution Factor			IA-01_20180131 1802094B-14A 1.66		IA-02_20180131 1802094B-15A 1.65		IA-03_20180131 1802094B-16A 1.54		IA-04_20180131 1802094B-17A 1.61		IA-05_20180131 1802094B-18A 1.6		IA-06_20180131 1802094B-19A 1.69		IA-07_20180131 1802094B-20A 1.61	
Analytical Method	Parameter	Unit														
TO-15 SIM	1,1,1-Trichloroethane	ug/m3	0.18	U	0.18	U	0.17	U	0.18	U	0.17	U	0.18	U	0.18	U
TO-15 SIM	1,1-Dichloroethane	ug/m3	0.13	U	0.13	U	0.12	U	0.13	U	0.13	U	0.14	U	0.13	U
TO-15 SIM	1,1-Dichloroethene	ug/m3	0.066	U	0.065	U	0.061	U	0.064	U	0.063	U	0.067	U	0.064	U
TO-15 SIM	1,2-Dichloroethane	ug/m3	0.13	U	0.13	U	0.12	U	0.13	U	0.13	U	0.14	U	0.13	U
TO-15 SIM	Carbon Tetrachloride	ug/m3	0.21	U	0.21	U	0.19	U	0.2	U	0.2	U	0.21	U	0.2	U
TO-15 SIM	cis-1,2-Dichloroethene	ug/m3	0.13	U	0.13	U	0.12	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15 SIM	Tetrachloroethene	ug/m3	0.22	U	0.22	U	0.21	U	0.22	U	0.22	U	0.23	U	0.22	U
TO-15 SIM	trans-1,2-Dichloroethene	ug/m3	0.66	U	0.65	U	0.61	U	0.64	U	0.63	U	0.67	U	0.64	U
TO-15 SIM	Trichloroethene	ug/m3	0.18	U	0.18	U	0.16	U	0.17	U	0.17	U	0.18	U	0.17	U
TO-15 SIM	Vinyl Chloride	ug/m3	0.042	U	0.042	U	0.039	U	0.041	U	0.041	U	0.043	U	0.041	U

Field Sample ID Lab Sample ID Dilution Factor			IA-08_20180131 1802094B-21A 1.62		IA-09_20180131 1802094B-22A 1.57		IA-10_20180131 1802094B-23A 1.63		IA-11_20180131 1802094B-24A 1.69		IA-DUP01_20180131 1802094B-25A 1.61		OA-01_20180131 1802094B-13A 1.48	
Analytical Method	Parameter	Unit												
TO-15 SIM	1,1,1-Trichloroethane	ug/m3	0.18	U	0.17	U	0.18	U	0.18	U	0.18	U	0.16	U
TO-15 SIM	1,1-Dichloroethane	ug/m3	0.13	U	0.13	U	0.13	U	0.14	U	0.13	U	0.12	U
TO-15 SIM	1,1-Dichloroethene	ug/m3	0.064	U	0.062	U	0.065	U	0.067	U	0.064	U	0.059	U
TO-15 SIM	1,2-Dichloroethane	ug/m3	0.13	U	0.13	U	0.13	U	0.14	U	0.13	U	0.12	U
TO-15 SIM	Carbon Tetrachloride	ug/m3	0.2	U	0.2	U	0.2	U	0.21	U	0.2	U	0.19	U
TO-15 SIM	cis-1,2-Dichloroethene	ug/m3	0.13	U	0.12	U	0.13	U	0.13	U	0.13	U	0.12	U
TO-15 SIM	Tetrachloroethene	ug/m3	0.22	U	0.21	U	0.22	U	0.23	U	0.22	U	0.2	U
TO-15 SIM	trans-1,2-Dichloroethene	ug/m3	0.64	U	0.62	U	0.65	U	0.67	U	0.64	U	0.59	U
TO-15 SIM	Trichloroethene	ug/m3	0.17	U	0.17	U	0.18	U	0.18	U	0.17	U	0.16	U
TO-15 SIM	Vinyl Chloride	ug/m3	0.041	U	0.04	U	0.042	U	0.043	U	0.041	U	0.038	U