Avery Dennison Corporation
Environmental, Health & Safety
130 Walnut Street
Douglas, MA 01516 USA
Office: 508/ 476 5041
Fax: 508/476-5159

June 9, 2016

Daniel R. Lanners, P.E.
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor
Albany, NY 12233-7014

Re: Soil Vapor Intrusion Investigation Report
Avery Dennison Corporation – Orangeburg Facility
NYSDEC Site No. 344072
Orangeburg, Rockland County, NY

Dear Mr. Lanners,

ADC's consultant, The Johnson Company (JCO), performed indoor air and sub-slab soil vapor sampling at the above-referenced Avery Dennison Corporation (ADC) facility during the week of March 21, 2016. The work was performed in accordance with the Soil Vapor Intrusion Investigation Work Plan (the Work Plan) submitted to New York State Department of Environmental Conservation (the Department) on March 4, 2016. At your request, preliminary results from the investigation were provided to the Department on April 8, 2016.

Details of the investigation program and discussion of the subsequent findings are provided in the enclosed Soil Vapor Intrusion Investigation Summary Report. Also included in this submittal are the validated laboratory analytical results, as well as a Data Usability Summary Report (DUSR) prepared by a third-party data validator consistent with Department DER-10 guidance. As summarized in the investigation report, the analytical results obtained during this investigation showed no exceedances of New York State Department of Health (NYSDOH) Indoor Air Guidelines or United States Environmental Protection Agency (USEPA) Vapor Intrusion Screening Levels for indoor air or sub-slab soil vapor.

Based on these results and ADC's discussion with NYSDEC at our May 4, 2015 meeting regarding soil and groundwater at the property, ADC understands no further action will be required for characterization or remediation of this property. Therefore, ADC respectfully requests a response from the Department confirming no further action is required. In support of that objective, ADC would like to schedule a meeting with the Department and NYSDOH in

late July to discuss and resolve any remaining issues that may delay a no further action determination for this property.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

Bruce Martin

Bruce Martin
Corporate Manager, Environmental Remediation Services
Avery Dennison Corporation

Encl.

cc: Chris Turner, The Johnson Company

SOIL VAPOR INTRUSION INVESTIGATION REPORT

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

NYSDEC Site No. 334072

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

Project No.: 1-0145-15

June 2016

The Johnson Company

ENVIRONMENTAL SCIENCE AND ENGINEERING SOLUTIONS

PARTNERS FOR SMART THINKING AND CREATIVE STRATEGIES

SOIL VAPOR INTRUSION INVESTIGATION REPORT

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NYSDEC Site No. 344072

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

Prepared by:
The Johnson Company, Inc.
100 State Street, Suite 600
Montpelier, Vermont 05602

Project No.: 1-0145-15
June 2016

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

6/09/2016
Date Signed

EXECUTIVE SUMMARY

The Johnson Company (JCO) sampled soil vapor, indoor air, and outdoor air at the Avery Dennison Corporation (ADC) facility, 524 Route 303 in Orangeburg, New York (the Facility), to assess indoor air quality and evaluate the potential for soil vapor intrusion of volatile organic compounds (VOCs). The facility includes an active manufacturing area where fabrics are cut and treated with solvent-based and water-based coatings, and a non-manufacturing area containing offices and a laboratory used for product testing. For this investigation, air sampling was performed in both portions of the Facility in March 2016, with emphasis on the non-manufacturing areas.

JCO collected one outdoor air, five indoor air, and five sub-slab soil vapor time-integrated samples over a period of eight hours during a typical workday at the Facility. Samples were analyzed for ten volatile organic compounds (VOCs) 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. JCO observed Facility HVAC systems, reviewed safety data sheets (SDS) provided by ADC for VOC-containing materials used or stored in the Facility at the time of sampling, and mapped the interior layout of the office and laboratory areas. Per New York State Department of Health (NYSDOH) guidance, sampling was performed during the heating season.

No VOC analytes were detected in indoor air samples above New York State Department of Health (NYSDOH) Indoor Air Guidelines or United States Environmental Protection Agency (USEPA) risk-based screening levels. VOC concentrations detected in sub-slab soil vapor samples were also low relative to risk-based screening levels calculated by USEPA for commercial buildings, suggesting there is little potential for indoor air quality impacts from soil vapor intrusion at the Facility. The two VOCs detected in indoor air, PCE and carbon tetrachloride, were detected in indoor air at concentrations more than a factor of 10 lower than co-located sub-slab soil vapor samples, indicating attenuation of VOCs is occurring at a rate typical for commercial/industrial facilities (USEPA, 2015).

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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 (see Figure 1-1). The work described in this report was performed during the period from March 21, 2016 to March 24, 2016 as described in the Soil Vapor Intrusion Investigation Work Plan (JCO, 2016) submitted to and approved by New York State Department of Environmental Conservation (NYSDEC) on March 4, 2016 (the Work Plan) (NYSDEC, 2016). The purpose of the investigation was to assess the potential occurrence of soil vapor intrusion of volatile organic compounds (VOCs) in a mixed-use manufacturing and office building, with emphasis on the non-manufacturing portion of the facility. Results from previous subsurface investigations showed VOCs were detected in environmental samples collected from other areas of the Site. Investigation activities performed in March 2016 included concurrent collection of sub-slab soil vapor, indoor air, and outdoor air samples, and a survey for building use information relevant to assessing potential soil vapor intrusion of VOCs.

2.0 SITE DESCRIPTION AND HISTORY

ADC owns and operates a 55,000 square-foot facility (the Facility) that houses office space, warehouse space, and manufacturing operations. The Facility is located on approximately 8.3 acres of land at 524 Route 303 in Orangeburg, Rockland County, New York (the Site; see Figure 2-1). Current manufacturing operations at the Facility consist 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 are also performed at the Site.

Chemicals in use at the Facility include solvents, solvent-based coatings and coating additives, lubricant and machining oils, and maintenance and cleaning supplies. Three solvents are used in bulk quantities at the Site and are 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 are located in the northwestern portion of the Site (see Figure 2-1) and were installed in 1998 (ERM, 2008b). The Facility is currently registered as a Large Quantity Generator of hazardous waste, with waste streams including spent coatings (solvent and water-based) and waste solids (e.g., drum liners, rags, etc.).

The Facility was reportedly constructed in the 1950s or 1960s and was previously occupied by Spencer Packaging Company and Paxar Corporation (Paxar). A United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) Database record for the Site dated June 6, 2006 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). ADC purchased the Site from Paxar in 2007 and has continued to use the Facility for the coating and finishing of fabrics. After the 2007 purchase of the Site from Paxar, ADC personnel described the use of chlorinated solvents as limited to small quantities, and exclusively within a laboratory setting.

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, as well as hydrogeologic characterization of the Site. Environmental sampling locations are shown on Figure 2-1. The Phase I assessment identified VOCs as the primary constituents of concern at the Site, and identified the primary VOCs used at the Facility since the 1970s as MEK, toluene, and isopropyl alcohol.

Investigation results showed concentrations of VOCs in soil are below NYSDEC Soil Cleanup Objectives (SCOs) for unrestricted use. Groundwater monitoring performed over a period of seven years, from 2007 to 2014, showed 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. The AWQS exceedences are located outside the northwestern corner of the Facility, in the immediate vicinity of former USTs and former scupper drains identified by the Phase I site assessment as areas of potential concern. Concentrations of those compounds in groundwater did not appear to show increasing trends over seven years of monitoring, and were not detected in downgradient wells at concentrations exceeding AWQS. Hydraulic gradients indicated a southeastern groundwater flow direction across the Site.

Sub-slab soil vapor samples were collected beneath the Facility in November 2008. Four chlorinated VOCs that are included in NYSDOH soil vapor intrusion decision matrices were detected in the November 2008 sub-slab soil vapor samples: TCE and carbon tetrachloride from Matrix 1; and PCE and 1,1,1-TCA from Matrix 2 (NYSDOH, 2006; 2015). PCE was detected in a greater number of samples and at higher concentrations than the other NYSDOH Matrix compounds. Concentrations of those constituents in sub-slab soil vapor were greatest beneath the western (manufacturing) portion of the Facility, and generally decreased eastward toward the non-manufacturing portion of the Facility. Chlorinated VOCs were not detected in the sub-slab soil vapor sample collected in 2008 from the non-manufacturing portion of the Facility.

In April 2015, ADC submitted a draft Environmental Investigation Report to NYSDEC and requested a meeting to discuss the investigation results and next steps for the Site. ADC and JCO met with NYSDEC and NYSDOH in Albany on May 4, 2015. At the meeting, NYSDEC indicated no further action would be required to address VOCs in soil and groundwater at the Site; however, additional work was likely needed to complete a soil vapor intrusion assessment. In correspondence dated January 14, 2016, NYSDEC requested ADC prepare a Work Plan for concurrent sub-slab soil vapor and indoor air sampling in the non-manufacturing portion of the Facility to evaluate for PCE and TCE. The Work Plan was submitted to, and approved by, NYSDEC on March 4, 2016, and the soil vapor intrusion investigation was performed during the period of March 21, 2016 through March 24, 2016.

3.0 INVESTIGATION SCOPE AND METHODS

JCO performed a soil vapor intrusion investigation at the Facility in March 2016, as described in the Work Plan. 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; 2015), 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; 2015). 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) system operations, which include a VOC vapor collection and treatment system, as well as ventilation and climate control systems. In addition, JCO inquired about the presence of products containing VOCs within manufacturing and/or 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 five locations, as shown on Figure 3-1: SS-1, SS-2, SS-3, SS-4, and SS-5. The five sampling locations were selected to span north-south and east-west across the non-manufacturing portion of the Facility. JCO is not aware of subsurface partitions such as deep foundation walls subdividing 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 barb 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 five sub-slab soil vapor sampling points met the seal integrity testing criteria described in the Work Plan.[1] 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.

A detailed description of VaporPin™ installation and leak testing procedures, as well as other field quality assurance/quality control (QA/QC) procedures, were provided in the Work

[1] As described in the Work Plan, JCO intended to sample a pre-existing sub-slab soil vapor sampling probe (SV-5); however, leak testing of the SV-5 probe indicated the integrity of the surface seal had been comprised; therefore, JCO installed a new VaporPin™ at location SS-5, which subsequently passed the leak test.

Plan. Unless indicated otherwise in this report, the 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 March 23, 2016 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 8-hour target sample collection period corresponds with the length of a typical work shift in the office portion of the Facility. 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 55 to 68 degrees Fahrenheit (°F), 5 to 20 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-5 (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 five locations shown on Figures 3-1 and 3-2: IA-1 through IA-5, which are co-located with sub-slab soil vapor sampling locations SS-1 through SS-5, 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). 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 from the western portion of the Site, and was upwind from the Facility at the time of sampling.

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 ten 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 sampling and 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. 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; 2015). 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, Phoenix Chemistry Services (Phoenix), 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). Phoenix 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. Phoenix prepared a Data Validation Report, as well as a Data Usability Summary Report (DUSR), as described in NYSDEC DER-10 guidance (NYSDEC, 2010). Using the criteria established in the Work Plan, Phoenix accepted the sample analytical results as reported by the laboratory without qualification, and concluded the laboratory data are useable as reported and satisfy the project objective to quantify VOC concentrations to levels at or below the applicable regulatory standards and guidance. Copies of Phoenix's Data Validation Report and DUSR are provided in Appendix E.

4.0 RESULTS AND DISCUSSION

4.1 BUILDING USE OBSERVATIONS

JCO interviewed Facility personnel, toured the Facility on March 24, 2016, 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. The completed NYSDOH form was reviewed for accuracy by William Reilley, the local Facility Environmental, Health and Safety Manager for ADC.

The non-manufacturing area in the Facility includes both office and laboratory space and is used by approximately 10 employees for five days per week during typical working hours (7:00 AM to 6:00 PM). The internal layout for the non-manufacturing portion Facility is depicted approximately on Figure 3-2. According to Facility personnel, the laboratory spaces are used for physical (not chemical) product testing. JCO observed cleaning products and an insect pesticide in the non-manufacturing portion of the Facility.

The layout of the manufacturing area is depicted approximately on Figure 3-1. The manufacturing area is typically active for two working shifts per day, from 6:00 AM to 12:00 AM, five days per week, plus occasional weekend shifts as needed. Materials containing VOCs were observed in a designated flammable materials storage area near the northwest corner of the Facility[2].

A summary table of materials that are used or stored in the Facility based on SDS forms provided by Facility personnel 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 March 23, 2016 were not listed ingredients on the SDS forms provided.

[2] Materials containing VOCs may be stored in other portions of the Facility, but were not observed by JCO.

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. Both systems service the non-manufacturing areas only. The forced hot air system is reportedly set for a fresh air exchange rate of 15%. 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 JCO's observation.

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. 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. Two separate negative-pressure ventilation systems operate for the C and E coating lines, as described below.

The C coating line (see Figure A-1 in Appendix A) utilizes a solvent-based coating system housed within an enclosure that is maintained under negative pressure. Vapors from the C coating line are pulled from the enclosure and conveyed via overhead ducts to a regenerative thermal oxidizer (RTO) vapor treatment system located outside the southern exterior of the building. An operator's manual for the RTO listed the system flow rate at 25,000 to 30,000 SCFM. Make up air for the RTO vapor collection system is piped in from the mixing room and

former reactor rooms (see Figure A-1 in Appendix A), and a separate pump and filter system installed on the south side of the C coating line that draws from ambient air in the Facility. Facility personnel reported the RTO system operates continuously during work shifts at the Facility; generally 18-hours per day (6:00AM to 12:00AM), Monday through Friday.

The E coating line (see Figure 3-1) at the Facility uses water-based coatings, and is not connected to the RTO vapor collection system. The E coating line is housed within an enclosure that is maintained under negative pressure. Ventilation for the E coating line is achieved via blowers and ducts mounted above the E line and connected to dedicated roof vents. Airflow rates for the E coating line ventilation system were not provided by Facility personnel. The E coating line operates intermittently; facility personnel estimated its operational time averages approximately 8 to 10 hours per week. In cold weather conditions, the E line ventilation system is operated only when the E coating line is in use. In warmer weather, the E line ventilation system runs continuously when the Facility is occupied, approximately two shifts per day, five days per week. Make up air is supplied through open windows, and through other outdoor air leaks into the manufacturing area (e.g., doors, leaky windows, utility/duct penetrations through walls and ceilings, etc.).

JCO observed eight (8) roof-mounted exhaust ventilation fans and a fume hood in the manufacturing area at the approximate locations depicted on Figure A-1 of Appendix A. Each ventilation fan is connected to a louvered closure mechanism at the ceiling; when in operation, the louvers are opened and the fans turned on to pull hot air from the manufacturing area. The ventilation fans are operated in warm weather conditions, and occasionally during winter months if the indoor air temperature exceeds 80 °F. Make up air is supplied through open windows, and through other outdoor air leaks into the manufacturing area (e.g., doors, leaky windows, utility/duct penetrations through walls and ceilings, etc.).

4.3 SAMPLING RESULTS AND DISCUSSION

The suitability of investigation results for evaluating soil vapor intrusion at the Facility is supported by several factors: sampling was performed during the heating season when the potential for soil vapor intrusion is increased; leak testing confirmed the integrity of sub-slab sampling equipment at each sampling location; no materials containing target analytes were identified in the Facility at the time of sampling; and third party data validation confirmed the usability of sample analytical results. Laboratory analytical reports are provided in Appendix D. A Data Validation Report and Data Usability Summary Report is are provided in Appendix E.

Validated analytical results for sub-slab soil vapor, indoor air and ambient air samples are presented in Table 4-1, in which they are compared to NYSDOH Indoor Air Guidelines and USEPA Vapor Intrusion Screening Levels for commercial buildings (USEPA, 2016). 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 were updated by USEPA in November 2015 to incorporate recent toxicological data. Evaluation of the sampling results using the generic soil vapor/indoor air decision matrices from the NYSDOH October 2006 Soil Vapor Intrusion Guidance (NYSDOH, 2006) is discussed later in this section.

Concentrations of VOCs in indoor air samples are below NYSDOH Indoor Air Guidelines and USEPA screening levels for all analytes (see Table 4-1). Only two VOCs, PCE and carbon tetrachloride, were detected in indoor air, and both were detected at three locations: IA-1, IA-2, and IA-4. Detected PCE concentrations ranged from 0.66 to 0.74 µg/m^3, well below the NYSDOH Indoor Air Guideline of 30 µg/m^3 and USEPA screening level of 47 µg/m^3. Carbon tetrachloride was detected at concentrations from 0.47 to 0.69 µg/m^3, compared to a USEPA screening level of 2.0 µg/m^3. NYSDOH has not established an Indoor Air Guideline for carbon tetrachloride. Carbon tetrachloride was also detected at a slightly lower concentration (0.47 µg/m^3) in the upwind outdoor ambient air sample (OA-1), suggesting a portion of the carbon tetrachloride concentrations detected in indoor air may be attributable to an upwind, off-site source. Carbon tetrachloride was the only analyte detected in the ambient air sample.

The indoor air sample from location IA-5, which is in the manufacturing area near the mixing room (see Figure 3-1), had elevated laboratory reporting limits due to the presence of non-target VOCs in the sample. With the exception of 1,2-DCA, the reporting limits were below NYSDOH Indoor Air Guidelines and USEPA indoor air screening levels for all analytes. Interference from of non-target VOCs at that location is explainable due to nearby use of solvents (e.g., MEK, toluene, and/or isopropyl alcohol) in the mixing room and manufacturing process, as well as the sensitivity of the indoor air SIM analyses.

Concentrations of VOCs in sub-slab soil vapor samples were below USEPA screening levels for all analytes. NYSDOH has not established compound-specific sub-slab soil vapor guidelines; however, a discussion of the soil vapor and indoor air results with respect to the generic NYSDOH soil vapor / indoor air decision matrices follows below. Six VOCs were detected in one or more sub-slab soil vapor samples: PCE; carbon tetrachloride, TCE; 1,1-DCE; 1,1,1-TCA; and 1,1-DCA (see Table 4-1). PCE concentrations in sub-slab soil vapor ranged from 4.5 to 160 $\mu g/m^3$, which is well below the USEPA screening level of 1,600 $\mu g/m^3$. Carbon tetrachloride concentrations ranged from 6.3 to 31 $\mu g/m^3$, which is below the USEPA screening level of 68 $\mu g/m^3$. The distribution of PCE and most of the detected analytes showed higher concentrations below the western portion of the manufacturing area (location SS-5), and generally lower concentrations to the east, below the non-manufacturing area. This pattern is consistent with the results from sub-slab soil vapor sampling performed below the manufacturing area in 2008, which suggested a limited and disperse source of VOCs in the unsaturated zone below the western portion of the Facility. In contrast, carbon tetrachloride concentrations were greatest in the easternmost sub-slab soil vapor samples from locations SS-2 and SS-4, located closest to the eastern exterior wall of the Facility.

NYSDOH Soil Vapor Intrusion Guidance (NYSDOH, 2006) provides two generic decision matrices for recommended additional actions based on combinations of soil vapor and indoor air sampling results. Seven of the target VOC analytes from this investigation are assigned to one of the NYSDOH matrices, as shown in Table 4-1. Matrix 1 applies to TCE,

vinyl chloride, and carbon tetrachloride. Matrix 2 applies to PCE; cis-DCE; trans-DCE; 1,1-DCE; and 1,1,1-TCA. Using the matrices to compare co-located sub-slab soil vapor and indoor air results places five of the seven analytes in the "no further action" screening category for all five sampling locations: TCE[3]; vinyl chloride; cis-DCE; 1,1-DCE, and 1,1,1-TCA. PCE concentrations in sub-slab soil vapor at locations SS-1 and SS-5 fall into the "monitor" category; however, the observed maximum values of 150 and 160 µg/m^3 are an order of magnitude below the current USEPA risk-based screening level for PCE in sub-slab soil vapor (1,600 µg/m^3). Matrix 1 also places carbon tetrachloride results from locations IA-1/SS-1, IA-2/SS-2, and IA-4/SS-4 into the "monitor" category; however, the observed maximum values of 31 µg/m^3 and 0.74 µg/m^3 for sub-slab soil vapor and indoor air, respectively, are less than one half of the current USEPA screening levels for that compound (68 and 2 µg/m^3, respectively).

In summary, the maximum concentrations of PCE and carbon tetrachloride, while greater than other analytes detected in sub-slab soil vapor, were one tenth to less than one half of their respective USEPA screening levels, indicating the maximum detected concentrations are not levels of concern for soil vapor intrusion based on USEPA's risk-based screening calculations for a commercial facility. PCE and carbon tetrachloride concentrations were detected at concentrations more than a factor of 10 lower in indoor air samples compared to co-located sub-slab soil vapor samples, indicating attenuation of VOCs is occurring at a rate similar to or greater than typical commercial/industrial facilities (USEPA, 2015). Over a seven-year period of groundwater monitoring (from 2007 to 2014) in the area surrounding and downgradient from the Facility, PCE was detected in one groundwater sample (at a concentration below the laboratory reporting limit), and carbon tetrachloride was not detected in groundwater. The absence of both compounds in groundwater provides additional evidence that a significant source of either compound is not present on the Site.

[3] TCE was not detected in the indoor air samples. Laboratory reporting limits for TCE were below the NYSDOH Indoor Air Guideline for all indoor air samples, but were greater than the lowest concentration bracket in Matrix 1.

5.0 REFERENCES

ERM (ERM, 2008a). Phase I EHS Acquisition Due Diligence Assessment Report, Former Paxar Facility, 524 Route 303, Orangeburg, New York. March 2008.

ERM (ERM, 2008b). Limited Environmental Investigation Report (Acquisition Due Diligence), Former Paxar Facility, 524 Route 303, Orangeburg, New York. April 2008.

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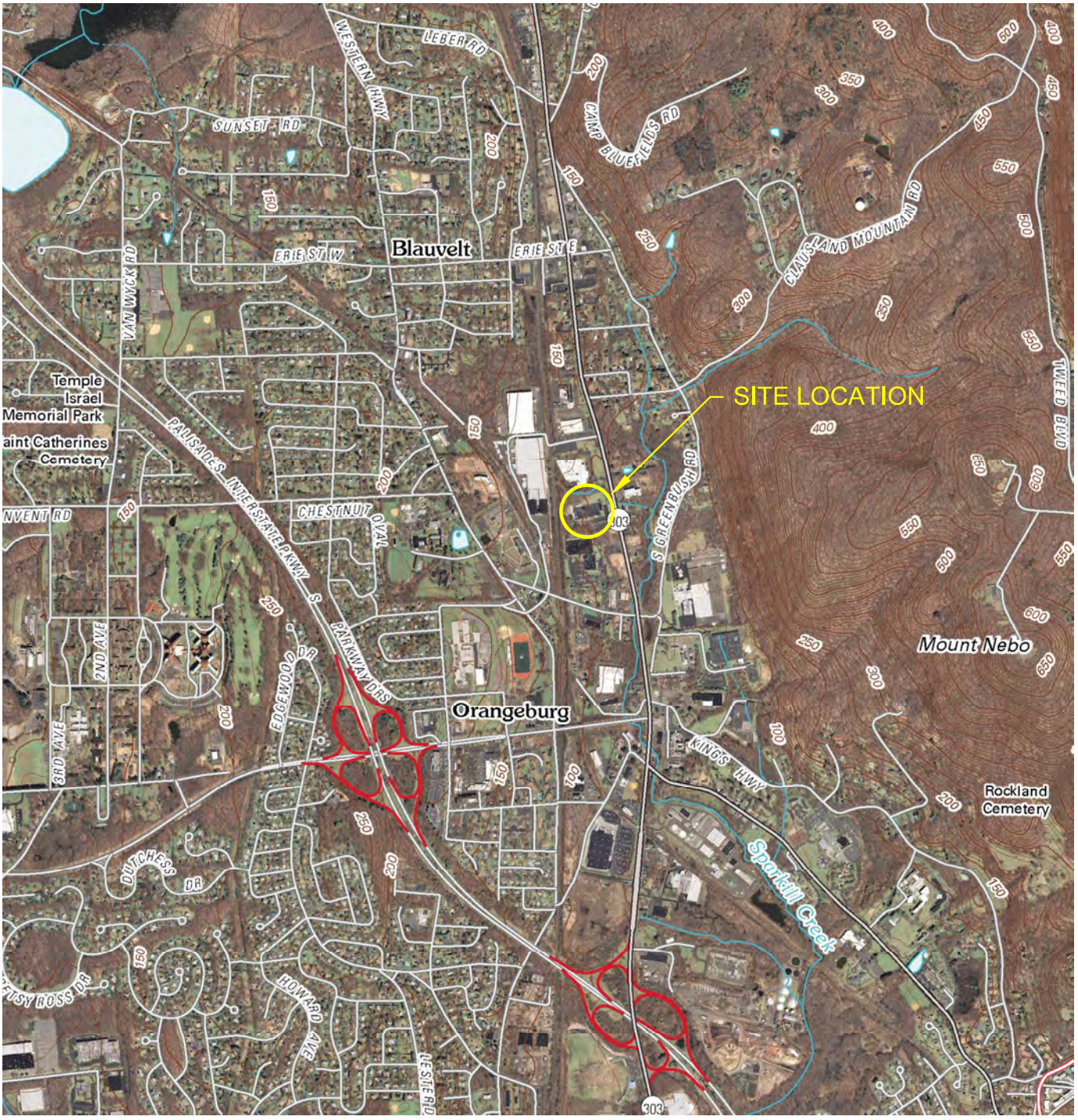
FIGURES

K:\1-0145-15\CAD\Location Map.dwg



N

1 0.5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000

FEET

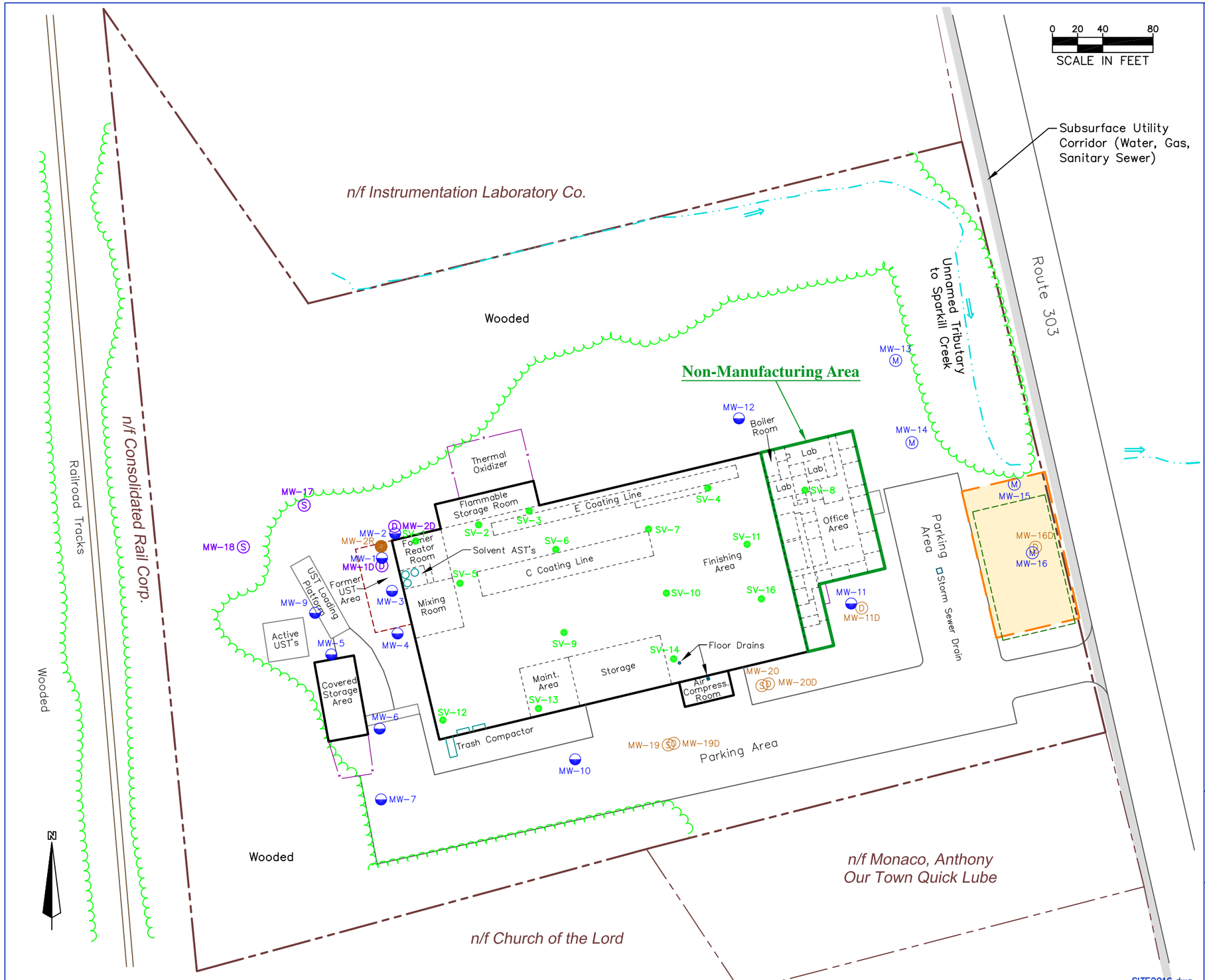
CONTOUR INTERVAL 10 FEET

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

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

The Johnson Company
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
- SV-7 — Sub-Slab Soil Vapor Point Location
- MW-1 — 2007 ERM Soil Sampling Location and Shallow Unconsolidated Deposits Groundwater Monitoring Well
- (M) MW-15 — 2010 JCO Shallow Unconsolidated Deposits Groundwater Monitoring Well Location
- (S) MW-17 — 2012 JCO Shallow Unconsolidated Deposits Groundwater Monitoring Well Location
- (D) MW-1D — 2012 JCO Deep Unconsolidated Deposits Groundwater Monitoring Well Location
- (S) MW-17 — 2013 JCO Shallow Unconsolidated Deposits Groundwater Monitoring Well Location
- (D) MW-1D — 2013 JCO Deep Unconsolidated Deposits Groundwater Monitoring Well Location
- MW-2R — 2013 JCO Bedrock Groundwater Monitoring Well Location

Note: 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

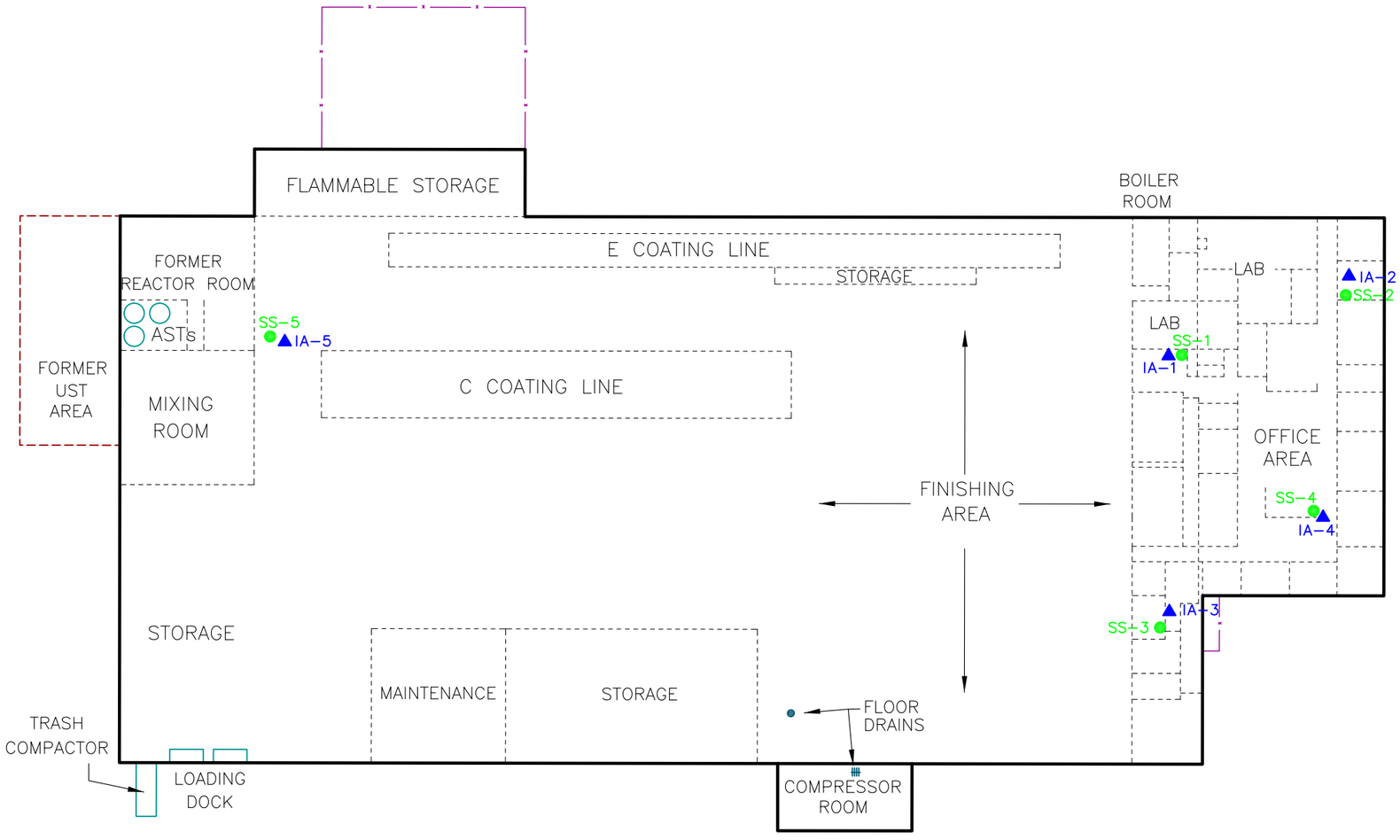
2007 aerial photography from New York State GIS Clearinghouse

Survey Plat by Tectonic Engineering & Surveying Consultants, P.C. dated 12/20/10, revised 02/28/12.

Figure 2-1: Site Plan - Previous Environmental Sampling Locations (2007-2014)
Former PAXAR Facility
Orangeburg, New York

The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 02/01/16
Reviewed by: CMT	Date: 02/01/16
Scale: As Shown	Project: 1-0145-15



LEGEND

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

N

0 20 40 80

SCALE IN FEET

SITE2010.dwg

Figure 3-1: March 2016 Sub-Slab Soil Vapor and Indoor Air Sampling Locations Former PAXAR Facility Orangeburg, New York

The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 04/07/16
Reviewed by: CMT	Date: 04/07/16
Scale: As Shown	Project: 1-0145-15

SITE2010.dwg

LEGEND

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

N

0 10 20 40

SCALE IN FEET

Figure 3-2: March 2016 Soil Vapor & Indoor Air Sampling Locations: Office Area Detail
Former PAXAR Facility
Orangeburg, New York

The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 04/07/16
Reviewed by: TRO	Date: 04/07/16
Scale: 1" = 20'	Project: 1-0145-15

TABLES

Table 4-1: Indoor Air and Sub-Slab Soil Vapor Analytical Results
Former Paxar Facility
524 Route 303
Orangeburg, New York

Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	USEPA Screening Level[1] (µg/m^3)	Sample Date: 3/23/2016 SS-1	3/23/2016 SS-2	3/23/2016 SS-3	3/23/2016 SS-4	3/23/2016 SS-5	3/23/2016 SS-5 Duplicate
Sub-Slab Soil Vapor	8 hours	Tetrachloroethene	Matrix 2	1,600	140	4.5	8.1	8.5	160	150
		Trichloroethene	Matrix 1	100	14	ND (<0.90)	1.1	ND (<0.88)	15	15
		cis-1,2-Dichloroethene	Matrix 2	--	ND (<0.65)	ND (<0.67)	ND (<0.62)	ND (<0.65)	ND (<0.64)	ND (<0.61)
		trans-1,2-Dichloroethene	--	--	ND (<0.65)	ND (<0.67)	ND (<0.62)	ND (<0.65)	ND (<0.64)	ND (<0.61)
		1,1-Dichloroethene	Matrix 2	29,000	ND (<0.65)	ND (<0.67)	ND (<0.62)	ND (<0.65)	1.1	1.1
		Vinyl chloride	Matrix 1	93	ND (<0.42)	ND (<0.43)	ND (<0.40)	ND (<0.42)	ND (<0.41)	ND (<0.39)
		1,1,1-Trichloroethane	Matrix 2	730,000	1.0	ND (<0.92)	ND (<0.86)	ND (<0.89)	14	14
		Carbon Tetrachloride	Matrix 1	68	6.8	29	6.3	31	7.1	7.4
		1,1-Dichloroethane	--	260	ND (<0.66)	ND (<0.68)	ND (<0.64)	ND (<0.66)	140	140
		1,2-Dichloroethane	--	16	ND (<0.66)	ND (<0.68)	ND (<0.64)	ND (<0.66)	ND (<0.65)	ND (<0.62)

Sample Type	Sample Duration	Analyte	NYSDOH Decision Matrix	NYSDOH Indoor Air Guideline (µg/m^3)	USEPA Screening Level[1] (µg/m^3)	Sample Date: 3/23/2016 IA-1	3/23/2016 IA-2	3/23/2016 IA-3	3/23/2016 IA-4	3/23/2016 IA-4 Duplicate	3/23/2016 IA-5	3/23/2016 OA-1
Indoor and Ambient Air	8 hours	Tetrachloroethene	Matrix 2	30	47	0.74	0.66	ND (<1.1)	0.70	0.70	ND (<2.2)	ND (<0.22)
		Trichloroethene	Matrix 1	2	3	ND (<0.45)	ND (<0.35)	ND (<0.85)	ND (<0.43)	ND (<0.34)	ND (<1.7)	ND (<0.17)
		cis-1,2-Dichloroethene	Matrix 2	--	--	ND (<0.33)	ND (<0.26)	ND (<0.63)	ND (<0.32)	ND (<0.25)	ND (<1.3)	ND (<0.13)
		trans-1,2-Dichloroethene	--	--	--	ND (<1.7)	ND (<1.3)	ND (<3.1)	ND (<1.6)	ND (<1.2)	ND (<6.4)	ND (<0.63)
		1,1-Dichloroethene	Matrix 2	--	880	ND (<0.17)	ND (<0.13)	ND (<0.31)	ND (<0.16)	ND (<0.12)	ND (<0.64)	ND (<0.063)
		Vinyl chloride	Matrix 1	--	2.8	ND (<0.11)	ND (<0.082)	ND (<0.20)	ND (<0.10)	ND (<0.081)	ND (<0.41)	ND (<0.041)
		1,1,1-Trichloroethane	Matrix 2	--	22,000	ND (<0.46)	ND (<0.35)	ND (<0.86)	ND (<0.44)	ND (<0.34)	ND (<1.8)	ND (<0.17)
		Carbon Tetrachloride	Matrix 1	--	2	0.65	0.60	ND (<0.99)	0.74	0.69	ND (<2.0)	0.47
		1,1-Dichloroethane	--	--	7.7	ND (<0.34)	ND (<0.26)	ND (<0.64)	ND (<0.32)	ND (<0.26)	ND (<1.3)	ND (<0.13)
		1,2-Dichloroethane	--	--	0.47	ND (<0.34)	ND (<0.26)	ND (<0.64)	ND (<0.32)	ND (<0.26)	ND (<1.3)	ND (<0.13)

Notes:

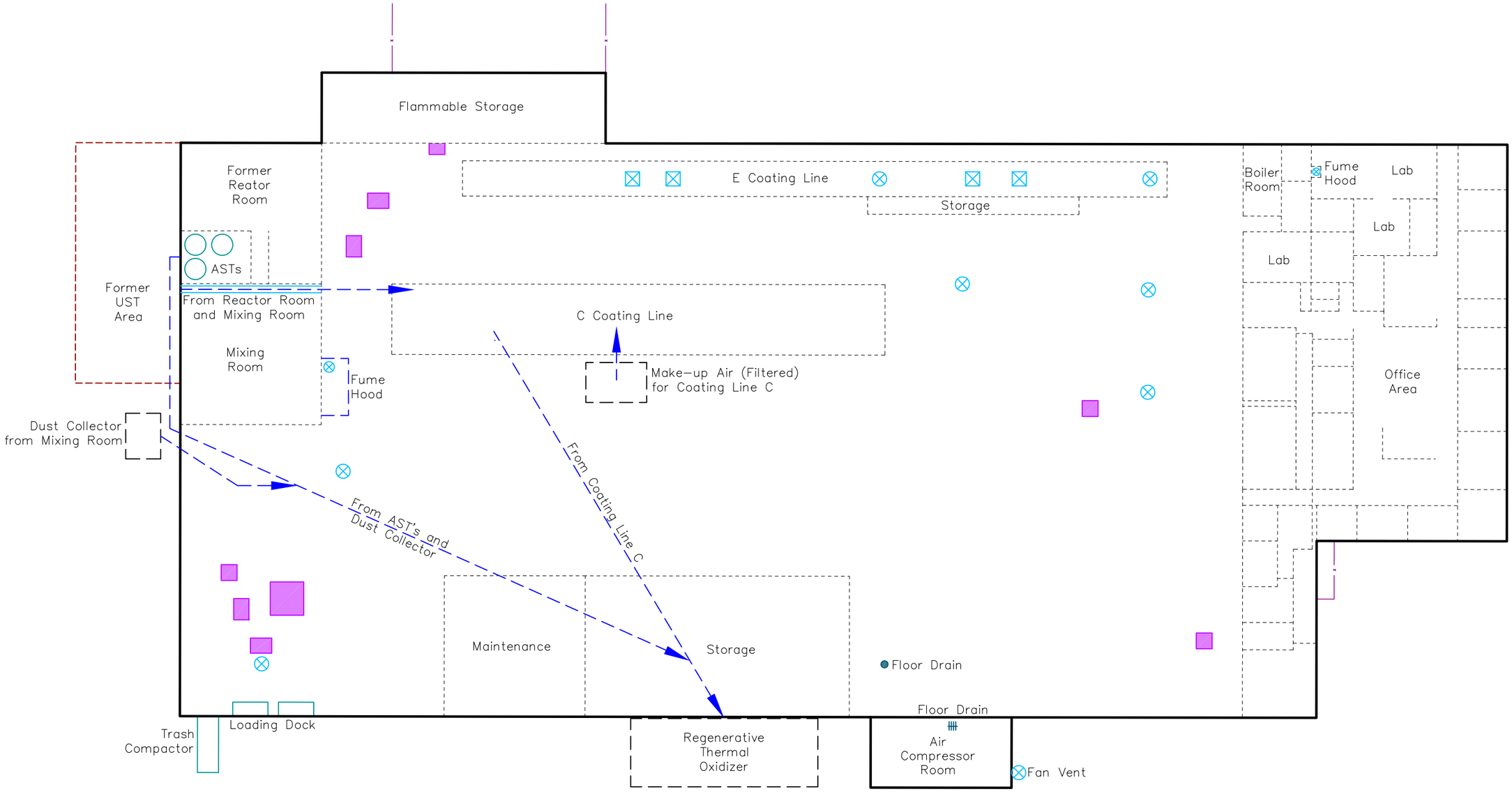
1. USEPA Screening Levels from Vapor Intrusion Screening Level Calculator version 3.4, November 2015 RSLs. Commercial Scenario, TCR = 1x10^{-6}; THQ = 1.0 (USEPA, 2016)
2. Indoor Air and Outdoor Air Samples analyzed by Eurofins Air Toxics using USEPA Method TO-15 SIM
3. Sub-Slab Soil Vapor Samples analyzed by Eurofins Air Toxics using modified USEPA Method TO-15
4. Concentrations expressed in units of micrograms per cubic meter (µg/m^3)
5. Results are preliminary and provided as reported by the analytical laboratory. Results may be modified based on data validation findings.

Abbreviations:

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

APPENDIX A

NYSDOH Indoor Air Quality Questionnaire and Building Inventory Form



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.

SITE2010.dwg

Figure A-1
Facility HVAC Observations - March 24, 2016
Former PAXAR Facility
Orangeburg, New York

The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602

Drawn by: TJK	Date: 05/20/16
Reviewed by: REN	Date: 05/20/16
Scale: As Shown	Project: 1-0145-15

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 3/24/16

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: Reilley First Name: Bill

Address: 524 Route 303; Orangeburg, NY 10962

County: Rockland

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

Number of Occupants/persons at this location 35 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	School	Commercial/Multi-use
(Industrial)	Church	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 39 years (1977)

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

There are three primary air outputs from the manufacturing area: 1) regenerative thermal oxidizer (25,000 to 30,000 SCFM), which draws air from the enclosure around the C Coating Line and the AST room (empty and inactive); 2) ceiling/roof mounted fans above the E Coating Line; 3) fume hood (100 SCFM) near mixing room. There is also one intermittent air output from the office area: a fume hood in the lab area (~100 SCFM). The lab was not in use and the fume hood was turned off when JCO observed it.

Outdoor air infiltration

Air input into the Facility is through roof vents (generally in the manufacturing areas) and exterior windows. JCO observed a negative pressure in the manufacturing area during operation. This was noticeable when opening exterior doors. The pressure differential was not measurable with a barometer at the time of JCO's visit.

Infiltration into air ducts

The pressure differential was not measurable with a barometer at the time of JCO's visit.

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

a. Above grade construction:	(wood frame)	(concrete Block)	stone	brick
b. Basement type:	full	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 noted (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)

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

The primary type of fuel used is:

(Natural Gas)	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 flowing in to the C line is pumped into the C Coating Line from indoor air elsewhere in the facility. A duct system collects air from the floor level of the mixing room and former reactor room and delivers it to the C Line. The other C Line make-up air comes from a large overhead mounted filter unit with fan that actively pulls interior air (not exterior air) into the C Line. The C Line is maintained under negative pressure. Additional indoor make-up air leaks in through door cracks in the C-line enclosure. The E Coating Line is water-based, not solvent-based, and generates heat, which is removed through roof fans installed above the E Line. The flow rate of the roof fans was not provided.

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	Not applicable
1st Floor	Office (7am to 6pm); Manufacturing Area (6am to 12am)
2nd Floor	
3rd Floor	
4th Floor	

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? Plant Maintenance Shop

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? Plant, 01/16

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? March 15, 2016

Are there odors in the building? (Y) / N

If yes, please describe: Odors associated with manufacturing process; 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) Manufacturing, laboratory, cleaning

If yes, what types of solvents are used? MEK, Isopropanol, Toluene

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) (No)
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

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

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 ** Y / N
	See Appendix B					

* 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.

APPENDIX B

Facility VOC Materials List

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Table B-1: Material Safety Data Sheets Provided by ADC Facility Personnel
Former Paxar Facility
Orangeburg, New York

Product Name	Manufacturer	Area of Use/Storage
30096 Aqueous Label Coating	AllCoat Technology	Manufacturing
3M Polystyrene Foam Insulation Spray Adhesive 78	3M	Manufacturing
52026 Clear M-81 Polymer	AllCoat Technology	Manufacturing
52406-1 White Base Coat (Solvent Based Compound)	AllCoat Technology	Manufacturing
7400 System DTM 450 VOC Alkyd Enamel (epoxy)	Rust-Oleum Corporation	Manufacturing
Acrylic 1-GL 2PK 5200 Silver Gray	Rust-Oleum Corporation	Manufacturing
Acrysol RM-8W Rheology Modifier	The Dow Chemical Company	Manufacturing
Aerotex 4040 Accelerator	CYTEC Industries Inc.	Manufacturing
Amgard CT	Rhodia, Inc.	Manufacturing
BYK-A 501	BYK USA Inc.	Manufacturing
Bykumen	BYK USA Inc.	Manufacturing
Cellanese Methyl Ethyl Ketone	Celanese Ltd.	Manufacturing
CHEVRON Lubricating Oil FM ISO 68	ChevronTexaco Global Lubricants	Manufacturing
CITGO North Star Refrigeration Oil 32	CITGO Petroleum Corporation	Manufacturing
Cleaning and Etching Solution (0108 402)	Rust-Oleum Corporation	Manufacturing
Commercial Alcohols Isopropyl Alcohol	Commercial Alcohols	Manufacturing
Concrete Saver 6501 Activator S6501410 (floor coating)	Rust-Oleum Corporation	Manufacturing
Cymel 325 Resin	CYTEC Industries Inc.	Manufacturing
Dermol AL-5	Alzo International Inc.	Manufacturing
Desmodur I	Bayer MaterialScience LLC	Manufacturing
Desmodur N 75 BA/X	Bayer Corporation	Manufacturing
Desmophen 651A-65 PMA	Bayer MaterialScience LLC	Manufacturing
Durane (52448 Clear Urethane)	AllCoat Technology	Manufacturing
Eastman Cellulose Acetate Propionate (CAP-504-0.2)	Eastman Chemical Company	Manufacturing
Estane 5719	The Lubrizol Corporation	Manufacturing
Eutex OB-1	Aceto Corporation	Manufacturing
Expancel Microspheres 051 DE 40 d60	Eka Chemicals Inc.	Manufacturing
Exxonmobil IPA	Exxonmobil Chemical Company	Manufacturing
Foamquat SAQ-90	Alzo International Inc.	Manufacturing
G-Biosciences Sodium Chloride (extra fine 325 salt)	G-Biosciences/ Geno Technology, Inc.	Manufacturing
Griltex D 1682E P 82	EMS-GRILTECH CH-7013 Domat/Ems	Manufacturing
Heat Transfer Oil 32	Phillips 66 Lubricants	Manufacturing
Hydrazine Hydrate 55%	LANXESS Deutschland GmbH	Manufacturing
JM100	The J. Mazzacca Corp	Manufacturing
Loctite Super Flex Red High Temp RTV Silicone Adhesive Sealant	Henkel Corporation	Manufacturing
LUBRIPLATE HO-1 (petroleum lubricating oil)	LUBRIPLATE Lubricants Co.	Manufacturing
Mobil Methyl Ethyl Ketone	Exxonmobil Chemical Company	Manufacturing
N-methyl-pyrrolidone	LyondellBasell	Manufacturing
Nuosperse 15	Elementis Specialties, Inc.	Manufacturing
O'Reilly Multi-Purpose GL-5 Gear Lubricant 85/140	Omni Specialty Packaging	Manufacturing
PanTINT Black Dispersion	Pan Technology, Inc.	Manufacturing
Paraloid A-21 100% Resin	Rohm and Haas Company	Manufacturing
PFAZ 322	Bayer MaterialScience LLC	Manufacturing
Rust-Oleum High Performance Industrial DTM Epoxy Mastic Aluminum	Rust-Oleum Corporation	Manufacturing
Rust-Oleum High Performance Industrial Enamel Aerosol - Inverted Marking Spray (hard hat marking paint)	Rust-Oleum Corporation	Manufacturing
Safety-Kleen 105 Solvent Virgin	Safety-Kleen Systems, Inc.	Manufacturing
Safety-Kleen Premium Solvent	Safety-Kleen Systems, Inc.	Manufacturing
Shell IPA	Shell Chemical LP	Manufacturing
Shell Methyl Ethyl Ketone	Shell Chemical LP	Manufacturing
SLIP-AYD SL 295A	Elementis Specialties, Inc.	Manufacturing
Solvesso 150 Solvent	Imperial Oil Chemicals Division	Manufacturing

Table B-1: Material Safety Data Sheets Provided by ADC Facility Personnel
Former Paxar Facility
Orangeburg, New York

Product Name	Manufacturer	Area of Use/Storage
Speedway Heavy Duty SAE 30 Motor Oil	Speedway LLC	Manufacturing
SSR Ultra Coolant	Ingersoll-Rand	Manufacturing
Sunbrite Yellow 14	Sun Chemical Corporation	Manufacturing
Sunoco Toluene	Sunoco, Inc. (R&M)	Manufacturing
T*Zap 232	Trico Technologies, Inc.	Manufacturing
Thinner 190	Rust-Oleum Corporation	Manufacturing
Tint-AYD AL 234A	Elementis Specialties, Inc.	Manufacturing
Tint-AYD BB 1331	Elementis Specialties, Inc.	Manufacturing
Tint-AYD ST 8317	Elementis Specialties, Inc.	Manufacturing
Tint-AYD ST 8454	Elementis Specialties, Inc.	Manufacturing
Tint-AYD ST 8619	Elementis Specialties, Inc.	Manufacturing
Tint-AYD ST 8703 Phthalo Green	Elementis Specialties, Inc.	Manufacturing
Ti-Pure Titanium Dioxide Pigment - Plastics Grades	DuPont	Manufacturing
Ti-Pure Titanium Dioxide Pigment R-931	DuPont	Manufacturing
Universal Gear Lube EP SAE 90	Productos Texaco S.A. de C.V.	Manufacturing
UVITEX NFW LIQ	Ciba Specialty Chemicals Corporation	Manufacturing
Yellow 9702478, 2348	Rust-Oleum Corporation	Manufacturing
Air Wick Freshmatic Ultra	Reckitt Benckiser LLC	Office/Labs
Ajax Oxygen Bleach Cleaner (powder)	Colgate Palmolive Co.	Office/Labs
BreakDown 4291110 Odor Eliminator Concentrate	Sealed Air	Office/Labs
Bright Eyes Premium Grade Floor Finish	National Chemical Laboratories	Office/Labs
Brighton Professional Lemon Peel Dry Air Freshener	Staples Contract & Commercial, Inc.	Office/Labs
Carpet Spotter	Multi-Clean	Office/Labs
Clorox Clean-up Cleaner + Bleach	The Clorox Company	Office/Labs
Comet Bathroom Cleaner	Procter & Gamble Professional	Office/Labs
Fabuloso Professional Products	Colgate Palmolive Co.	Office/Labs
Flat Screen S-8128	Uline Inc.	Office/Labs
Glass Cleaner S-19451	Uline Inc.	Office/Labs
Neutral Cleaner Disinfectant Morning Mist 33	Diversey, Inc.	Office/Labs
Pledge Furniture Spray Lemon Clean	S.C. Johnson & Son, Inc.	Office/Labs
Pro Formula Window Clean	Unger Enterprises, LLC	Office/Labs
Purell Advanced Instant Hand Sanitizer Foam 5392-02	GOJO Industries, Inc.	Office/Labs
Raid Ant Killer 16	S.C. Johnson & Son, Inc.	Office/Labs
Sealed Air Speedball 2000 Power Cleaner	Diversey, Inc.	Office/Labs
Solution Series White Lotion Hand Soap LHS-77	American Cleaning Solutions	Office/Labs
Spot Shot Professional	WD-40 Company	Office/Labs
Stonemedic CIC Ceramic Intensive Cleaner	Ecolab 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 March 2016.
2. Safety data sheet (SDS) information for products used in the manufacturing areas were previously provided to JCO by Facility representatives (March 2015); 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,

APPENDIX C

Soil Vapor and Indoor Air Sampling Field Data

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

Ambient Air and Soil Vapor Sampling Form

Site Name: Avery Dennison Orangeburg, NY Personnel: TRO JCO #: 1-0145-15

Canister Size: 6 L Barometer/Thermometer Source/ID: Veloci Cal 9565P / S/N 9565P1244021

Pressure Check: Summa Canister ID #: NA Pressure Gauge Make/Model: Dwyer / DPGA-00-NIST / ID# C017B5514453O2

Gauge Calibration Date: 12/23/15 *Pre-Sampling* Pressure Check: Location: — Pressure Gauge Reading: —

Post-Sampling Pressure Check: Location: — Pressure Gauge Reading: —

Certification # 15DWY20-0681

Sample ID	IA-01	IA-02	IA-03	IA-04	IA-05	IA-Dup	OA-01
Summa Canister ID (not barcode)	34004	N0628	33562	4936	11871	N0580	24491
Flow Controller #	00149	~~00693~~ 06494 TRO	06494	00953	00444	00853	40820
Sampling Height (ft)"	55"	52"	54"	57"	57"	57"	55"
Date	Start: 3/23/16	Start:	Start:	Start:	Start:	Start:	Start: 3/23/16
	End: 3/23/16	End:	End:	End:	End:	End:	End: 3/23/16
Time	Start: 1132	Start: 1130	Start: 1157	Start: 1134	Start: ~~1140~~ 1200	Start: 1034	Start: 1213
	End: 1901	End: 1949	End: 2020	End: 2006	End: 2023	End: 1906	End: 2037
Flow Controller Vacuum (in Hg)	Start: 29"	Start: 30"+	Start: 30"	Start: 30"+	Start: 30"+	Start: 30"+	Start: 30"+
	End: 5"	End: 7"	End: 6"	End: 5.5"	End: 5.5	End: 6.0"	End: 7.5"
Digital Pressure Gauge (in Hg)	Start: 29.75	Start: 29.06	Start: 28.86	Start: 30.01	Start: 28.63	Start: 29.88	Start: 30.01
	End: 6.28	End: 5.93	End: 4.93	End: 5.11	End: 4.98	End: 4.60	End: 6.03
Ambient Temperature (°C)	Start: 77.6	Start: 76.2	Start: 72.7	Start: 77.6	Start: 74.0	Start: 72.6	Start: 67.7
	End: 77.8	End: 75.2	End: 77.3	End: 77.5	End: 74.4	End: 77.5	End: 60.0
Barometric Pressure (in Hg)	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82
	End: 29.85	End: 29.85	End: 29.87	End: 29.86	End: 29.88	End: 29.86	End: 29.89
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-04 / SS-05 Replicate Name: IA-Dup / SS-Dup

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

Avery Dennison - Orangeburg NY 1-0145-15

TRP 3/23/16

Sample ID	SS-01	SS-02	SS-03	SS-04	SS-05	~~SS-DUP~~	SS DUP
Summa Canister ID (not barcode)	33925	24479	34429	34015	N0640	~~05359~~	13669
Flow Controller #	00282	00842	00252	00633	06852	~~08596~~	00549
Sampling Height (ft)	Below Concrete ≈0.5' Bgs	≈0.38' Bgs	≈0.46' Bgs	≈0.38' Bgs	≈0.42' Bgs	—	Below Concrete ≈0.42' Bgs
Date	Start: 3/23/16	Start: 3/23/16	Start: 3/23/16	Start: 3/23/16	Start: 3/23/16	Start: —	Start: 3/23/16
	End: 3/23/16	End: 3/23/16	End: 3/23/16	End: 3/23/16	End: 3/23/16 1200	End: —	End: 3/23/16
Time	Start: 1132	Start: 1130	Start: 1137	Start: 1134	Start: 1140	Start: ~~1040~~	Start: 1100
	End: 2014	End: 1916	End: 2021	End: 1918	End: 2024	End: —	End: 1924
Flow Controller Vacuum (in Hg)	Start: 30"+	Start: 28"	Start: 30"+	Start: 29	Start: 30	Start: TRP 3/23/16	Start: 30"+
	End: 7"	End: 5"	End: 6"	End: 5"	End: 5.0	End: —	End: 5.5
Digital Pressure Gauge (in Hg)	Start: 29.75	Start: 30.00	Start: 30.06	Start: 29.33	Start: 30.06	Start: ~~30.05~~	Start: 29.59
	End: 6.32	End: 6.16	End: 4.84	End: 5.2"	End: 5.60	End: —	End: 4.34
Ambient Temperature (°C)	Start: 77.6	Start: 76.2	Start: 72.9	Start: 77.6	Start: 74.0	Start: —	Start: 70.9
	End: 77.8	End: 75.2	End: 77.3	End: 77.5	End: 74.4	End: —	End: 74.4
Barometric Pressure (in Hg)	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82	Start: 29.82	Start:	Start: 29.82
	End: 29.85	End: 29.84	End: 29.87	End: 29.85	End: 29.85	End:	End: 29.88
Controller Flow Rate (mL/min)	11.46	11.46	11.46	11.46	11.46		11.46
COC Number							

Background Sample Information: Sample Name: DA-01 Location: West side of facility, N. of Covered Storage area

Other weather conditions: _____ Wind Speed/Direction (Start): out of west / variable ∠15 mph

Wind Speed/Direction (specify interval): out of West Calm /

Shipping Information: Shipping Method: Fed Ex, standard overnight Date Shipped: 3/24/16

Notes: _____

14 Avery Dennison - Orangeburg, NY 1-0145-15

Vapor Pnt. Insalation 3/21/16 TTeo

1200 JCo onsite

1150 Enviroprobe utility Clearance contractor on site. (EPS)

Weather: Mostly Clear skys Breezy 40°F

Met w/Bill Rielly and walked the facility w/EPS to look @ points

1130 set up to install Vapor pnts.

SS-2 Concrete ≅ 4½" Thick. Located Behind door to 2nd office along Hall way. Carpet

1930-1939 Install SS-1 through Lynolum Concrete ≅ 5.5-6" Thick

1930-2000 Install SS-4 through Carpet Concrete ≅ 4.5" Thick

2015-2055 Install SS-3 through Lyndum Concrete Thickness 5.5" Thick

2130 offsite

Bill Reilly (845) 664-5070 (c)
(845) 680-3890 (o)

AD - Orangeburg NY 1-0145-15 3/22/16

Vapor Pnt. Installation/Leak Test TTeo

0715 onsite

Weather: Clear Breezy 30s

Set up for leak Testing @ SV-05

Temp = 18.5°C/65.5°F,

Rel. Humidity (York) = 32.5

BP = 30.05" Hg.

0910 He @ the SV-05 = 0.0ppm/stable

0912 Apply He 50 sec.

0913 He = 5400 ppm and climbing He Test Failed.

SS-03 Leak Test

0932-0936 Base Line 0.0 ppm (≅500 ml/min)

0937 Apply He (30 sec)

0938 He = 0.0 ppm (He ≅ 20sec)

0939 He = 0.0 ppm (He ≅ 20sec)

0940 He = 0.0 ppm

0941 He = 0.0 ppm Vac = -0.29" Hg

0942 He = 0.0 ppm (He ≅ 20sec) Vac = -0.31" Hg

Temp = 71.3°F

%RH = 29.2%

BP = 30.07/ Certification Date 12/23/15

Digital Pressure Gauge used for Leak Test/shut in Test/Purging. Gauge # C01ABS514453-01
Certification # 15WY20-0680

Avery Dennison · Orangeburg, NY 1-0145-15 TRO

Vapor Pnt. Leak Test. 3/22/16

SS-02 Leak Test

Pump on 1012 ≈500 ml/min Baseline = 0.0ppm

1014 Apply He (30sec)

1015 He 25ppm Vac = 0.19"

1016 He = 0.0 ppm = 0.21"

1017 He = 0.0ppm = 0.21"

1018 He = 0.0ppm = 0.21

1019 He = 25ppm = 0.22"

1020 He = 0.0 ppm = 0.22"

Temp = 75.2°F Pulse He 10-20sec during

RH = 27.5% test.

BP = 30.07" Hg

SS-01 Leak Test

1029 Pump on ≈500 ml/min

1030 Back / Baseline He = 0.0

1036 Baseline · He = 425ppm Vac = 0.15" Hg

1056 Apply He He (30sec)

1037 He = 450 ppm (20sec) Vac = 0.5" Hg

1038 He = 475 ppm (20sec) Vac = 0.16"

1039 He = 500 ppm (20sec) Vac = 0.17" Hg

1040 He = 525 ppm (20sec) Vac = 0.16" Hg

1041 He = 525ppm (20sec) Vac = 0.17" Hg

1042 He = 550 ppm Vac = 0.16" Hg

Temp = 78.5°F, RH = 25.7%, BP = 30.07

AD - Orangeburg NY 1-0145-15 TRO

Vapor Pnt. Leak Test 3/22/16

SS-04 Leak Test

1010 Pump on ≈500 ml/min

1112 Base Line He = 0.0 ppm Vac = 0.1" Hg.

1115 Apply He (He 30sec) Vac = 0.08" Hg.

1116 He = 0.0 ppm (He 20sec) = 0.10

1117 He = 0.0 ppm (He 20sec) = 0.09

1118 He = 0.0 ppm = 0.09

1119 He = 0.0 ppm = 0.0

1120 He = 0.0 ppm (He = 20sec)

End Test

Temp = 75.7°F, RH = 25.7%, BP = 30.05" Hg

1250 Install Replacement vapor pnt for SS05

New table SS-05. Concrete Thickness ≈ 5.0"

SS-05 Leak Test Temp = 70.2°F, RH = 22.4% BP = 29.93" Hg

1450 Pump on ≈500 ml/min

1456 Baseline He = 0.0 ppm

1456 Apply He 0.0 (30sec) Vac = 0.0" Hg

1457 He = 0.0 (20sec) Vac = 0.15"

1458 He = 0.0 (20sec) Vac = 0.12"

1459 He = 0.0 (20sec.) = 0.14"

1500 He = 0.0 (30sec) = 0.11

1501 He = 0.0 (20sec) Vac = 0.12

End Test

Avery Dennison - Orangeburg, NY TRO

Air Sampling I-0145-15 3/23/10

0705 JCO on site

Weather: overcast 45°F

Sample Location	Canister #	Reg #	START Time	START Vac	Temp	STOP Time	STOP Vac	Temp	Intake Hg	Baro Pressure Start	Baro Pressure Stop
SS-01											
SS-02											
SS-03											
SS-04											
SS-05											
SS-Dup											
IA-01											
IA-02											
IA-03											
IA-04											
IA-05											
IA-Dup											
OA-01											

See Field Forms (TRO)

Wind direction throughout the day was out of the west southwest Calm to little breeze throughout the day, to Breezy (≈ 5-15 mph) afternoon into evening.

Avery Dennison - Orangeburg NY TRO

Air Sampling 1-0145-15 3/23/16

SS-02 Shut in Test

09.08 = -7.51 0910 = -8.48

0909 = -7.49 0911 = -7.49

Purged vapor pnt into Tedlar Bag for 1.5min @ ≈ 180 ml/min. Vol purged ≈

Vac = -0.29" Hg.

SS-01 Shut in Test

0936 = -8.06 0938 = -8.04

0937 = -8.05 0939 = -8.06

Purged (0911) Vapor pnt. into Tedlar bag for ≈2min @ ≈ 180 ml/min. Purge Vol ≈ 360 ml.

Vac = -0.19" Hg.

SS-04 Shut in Test

1010 = -8.25 1012 = -8.27

1011 = -8.25 1013 = -8.25

1014 Purged VP for 2min @ ≈ 180 ml/min

Vac = 0.0" Hg Purge Vol. ≈360 ml into Tedlar Bag.

Avery Dennison - Orangeburg NY 3/23/16

Air Sampling 1-0145-15 TRO

SS-03 Shut in Test

1038 = -8.83" 1040 = -8.84

1039 = -8.85" 1041 = -8.83

1042 Purged VP for 2min @ ≈ 180 ml/min into Tedlar Bag. Purge Vol ≈ 360mls. Vac = 0.22" Hg

SS05 Shut in Test

1106 = -8.48 1108 = -8.45

1107 = -8.46 1109 = -8.45" Hg

1109 Purged VP for 2min @ ≈ 180 ml/min into a Tedlar Bag. Purge Vol. ≈ 360mls.

Vac = 0.0" Hg / Dup Canister Rontroler reading 25" Hg → "Reject"

SS-05 Shut in Test (Repeat)

1152 = -8.33 1154 = -8.32

1153 = -8.33 1155 = -8.32

1155 Purged VP for 2min @ ≈ 180 ml/min into a Tedlar Bag. Vol. Purged ≈ 360 mls.

Vac = 0.0" Hg.

2145 JCO off site

DWYER INSTRUMENTS, INC.
P.O. BOX 373 • 102 INDIANA HWY. 212
MICHIGAN CITY, INDIANA 46361-0373
SALES ONLY (219) 879-8000 • GEN. OFFICE (219) 879-8868
FAX (219) 872-9057
E-MAIL: info@dwyer-inst.com • WEB SITE: www.dwyer-inst.com

Customer:	OMEGA ENGINEERING INC	**Date**	December 23, 2015
Address:	SPRINGDALE STATION	**Due**	December 22, 2016
	PO BOX 4047	**PO #**	PCJOB00799
	STAMFORD, CT 069070047	**Model #**	DPGA-00
Accuracy:	1 % of Full Scale	**Sales Order #**	S514453
		RGA #	
Full Scale Range:	30 Units: IN GH	**Certificate No.:**	15DWY20-0681

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:** .005 **% Full Scale**

Calibration Standard Information

	Serial No.	Cert. Rpt. No.	Last Cal. Date
Base:	03812016		
Module 1:	4273510	5-A206K-401	07/13/15
Module 2:			

Instrument Information

I.D. No. of Instrument being Calibrated
C01ABS51445302
Customer's I.D. No. (If Different)

Condition	X		
Of Meter	New	After Repair	As Received

Notes:

NEW / AS RECEIVED			AFTER REPAIR	
Customer Gage Setting	Dwyer Master Gage Reading	% Full Scale		
-28.5	-28.560	0.20%		
-21.4	-21.430	0.10%		
-14.25	-14.230	-0.07%		
-7.13	-7.080	-0.17%		
0	0.000	0.00%		
		0.00%		
		0.00%		
		0.00%		
		0.00%		
		0.00%		

Signed: Nicole Mazur **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

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4/6/2016
Mr. Chris Turner
The Johnson Company
100 State Street
Suite 600
Montpelier VT 05602

Project Name: Avery Dennison Orangeburg, NY
Project #: 1-0145-15
Workorder #: 1603511B

Dear Mr. Chris Turner

The following report includes the data for the above referenced project for sample(s) received on 3/25/2016 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 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

eurofins | Air Toxics

WORK ORDER #: 1603511B

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 Avery Dennison Orangeburg, NY
DATE RECEIVED:	03/25/2016	**CONTACT:**	Ausha Scott
DATE COMPLETED:	04/06/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
08A	SS-01	Modified TO-15	5.5 "Hg	5 psi
09A	SS-02	Modified TO-15	6.1 "Hg	5 psi
10A	SS-03	Modified TO-15	4.3 "Hg	5 psi
11A	SS-04	Modified TO-15	5.3 "Hg	5.1 psi
12A	SS-05	Modified TO-15	5.1 "Hg	4.9 psi
13A	SS-DUP	Modified TO-15	4.1 "Hg	5 psi
14A	Lab Blank	Modified TO-15	NA	NA
15A	CCV	Modified TO-15	NA	NA
16A	LCS	Modified TO-15	NA	NA
16AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 04/06/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# 1603511B

Six 6 Liter Summa Canister (SIM Certified) samples were received on March 25, 2016. 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

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

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

Client Sample ID: SS-01

Lab ID#: 1603511B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.16	0.19	0.89	1.0
Carbon Tetrachloride	0.16	1.1	1.0	6.8
Trichloroethene	0.16	2.6	0.88	14
Tetrachloroethene	0.16	20	1.1	140

Client Sample ID: SS-02

Lab ID#: 1603511B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.17	4.7	1.0	29
Tetrachloroethene	0.17	0.66	1.1	4.5

Client Sample ID: SS-03

Lab ID#: 1603511B-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.16	1.0	0.99	6.3
Trichloroethene	0.16	0.21	0.84	1.1
Tetrachloroethene	0.16	1.2	1.1	8.1

Client Sample ID: SS-04

Lab ID#: 1603511B-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.16	5.0	1.0	31
Tetrachloroethene	0.16	1.3	1.1	8.5

Client Sample ID: SS-05

Lab ID#: 1603511B-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	0.16	0.28	0.64	1.1

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

Client Sample ID: SS-05

Lab ID#: 1603511B-12A

1,1-Dichloroethane	0.16	33	0.65	140
1,1,1-Trichloroethane	0.16	2.5	0.88	14
Carbon Tetrachloride	0.16	1.1	1.0	7.1
Trichloroethene	0.16	2.8	0.86	15
Tetrachloroethene	0.16	23	1.1	160

Client Sample ID: SS-DUP

Lab ID#: 1603511B-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	0.15	0.27	0.61	1.1
1,1-Dichloroethane	0.15	36	0.62	140
1,1,1-Trichloroethane	0.15	2.6	0.84	14
Carbon Tetrachloride	0.15	1.2	0.97	7.4
Trichloroethene	0.15	2.8	0.83	15
Tetrachloroethene	0.15	23	1.0	150

eurofins | Air Toxics

Client Sample ID: SS-01

Lab ID#: 1603511B-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033009**	**Date of Collection:**	**3/23/16 8:14:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**3/30/16 02:09 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	0.19	0.89	1.0
Carbon Tetrachloride	0.16	1.1	1.0	6.8
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	2.6	0.88	14
Tetrachloroethene	0.16	20	1.1	140

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: SS-02

Lab ID#: 1603511B-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033010**	**Date of Collection:**	**3/23/16 7:16:00 PM**
Dil. Factor:	**1.68**	**Date of Analysis:**	**3/30/16 02:54 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	Not Detected	0.68	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Carbon Tetrachloride	0.17	4.7	1.0	29
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Trichloroethene	0.17	Not Detected	0.90	Not Detected
Tetrachloroethene	0.17	0.66	1.1	4.5

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: SS-03

Lab ID#: 1603511B-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033011**	**Date of Collection:**	**3/23/16 8:21:00 PM**
Dil. Factor:	**1.57**	**Date of Analysis:**	**3/30/16 03:29 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	0.64	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Carbon Tetrachloride	0.16	1.0	0.99	6.3
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	0.21	0.84	1.1
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	108	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: SS-04

Lab ID#: 1603511B-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033012**	**Date of Collection:**	**3/23/16 7:18:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**3/30/16 04:06 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	Not Detected	0.89	Not Detected
Carbon Tetrachloride	0.16	5.0	1.0	31
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	1.3	1.1	8.5

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: SS-05

Lab ID#: 1603511B-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033013**	**Date of Collection:**	**3/23/16 8:24:00 PM**
Dil. Factor:	**1.61**	**Date of Analysis:**	**3/30/16 04:41 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	0.28	0.64	1.1
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.16	33	0.65	140
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1,1-Trichloroethane	0.16	2.5	0.88	14
Carbon Tetrachloride	0.16	1.1	1.0	7.1
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Trichloroethene	0.16	2.8	0.86	15
Tetrachloroethene	0.16	23	1.1	160

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: SS-DUP

Lab ID#: 1603511B-13A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033014**	**Date of Collection: 3/23/16 7:24:00 PM**	
Dil. Factor:	**1.54**	**Date of Analysis: 3/30/16 05:15 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.15	Not Detected	0.39	Not Detected
1,1-Dichloroethene	0.15	0.27	0.61	1.1
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.15	36	0.62	140
cis-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected
1,1,1-Trichloroethane	0.15	2.6	0.84	14
Carbon Tetrachloride	0.15	1.2	0.97	7.4
1,2-Dichloroethane	0.15	Not Detected	0.62	Not Detected
Trichloroethene	0.15	2.8	0.83	15
Tetrachloroethene	0.15	23	1.0	150

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1603511B-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033005**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 10:42 AM**	

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	95	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: CCV

Lab ID#: 1603511B-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033002**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 08:41 AM**	

Compound	%Recovery
Vinyl Chloride	113
1,1-Dichloroethene	113
trans-1,2-Dichloroethene	114
1,1-Dichloroethane	114
cis-1,2-Dichloroethene	115
1,1,1-Trichloroethane	111
Carbon Tetrachloride	110
1,2-Dichloroethane	106
Trichloroethene	106
Tetrachloroethene	113

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1603511B-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 09:16 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	106	70-130
1,1-Dichloroethene	105	70-130
trans-1,2-Dichloroethene	106	70-130
1,1-Dichloroethane	107	70-130
cis-1,2-Dichloroethene	103	70-130
1,1,1-Trichloroethane	100	70-130
Carbon Tetrachloride	98	70-130
1,2-Dichloroethane	100	70-130
Trichloroethene	104	70-130
Tetrachloroethene	112	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: LCSD

Lab ID#: 1603511B-16AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**v033004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 09:50 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	112	70-130
1,1-Dichloroethene	111	70-130
trans-1,2-Dichloroethene	108	70-130
1,1-Dichloroethane	110	70-130
cis-1,2-Dichloroethene	108	70-130
1,1,1-Trichloroethane	105	70-130
Carbon Tetrachloride	103	70-130
1,2-Dichloroethane	102	70-130
Trichloroethene	103	70-130
Tetrachloroethene	110	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Chris Turner

Collected by: (Print and Sign) Bob Osborne (IRO)

Company The Johnson Co Email CMT@TCOMAIL.com

Address 100 State St, Suite 600 City Montpelier State VT Zip 05602

Phone (802) 229-4600 Fax

Project Info:
P.O. #
Project # 1-0145-15
Avery Dennison
Project Name Orangeburg, NY

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
08a	SS-01	33925	3/23/2016	1132-2014	TO-15 * short List	30"	7"		
09a	SS-02	24479		1130-1916	TO-15	28"	5"		
10a	SS-03	34429		1137-2021	TO-15	30"	6"		
11a	SS-04	34015		1134-1918	TO-15	29"	5"		
12a	SS-05	NO640		1200-2024	TO-15	30"	5.0		
13a	SS-Dup	13669	3/23/2016	1100-1924	TO-15 * short List	30"	5.5"		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
[signature] 3/24/16 1100	[signature] 3-25-16 1020
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes: *short list: PCE, TCE cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE Vinyle Chloride, Carbon Tetrachloride, 1,1,1-TCA, 1,1-DCA + 1,2-DCA.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEX		n/a	Good	(Yes) No None	160311

Form 1293 rev.11

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4/6/2016
Mr. Chris Turner
The Johnson Company
100 State Street
Suite 600
Montpelier VT 05602

Project Name: Avery Dennison Orangeburg, NY
Project #: 1-0145-15
Workorder #: 1603511A

Dear Mr. Chris Turner

The following report includes the data for the above referenced project for sample(s) received on 3/25/2016 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 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

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WORK ORDER #: 1603511A

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 Avery Dennison Orangeburg, NY
DATE RECEIVED:	03/25/2016	**CONTACT:**	Ausha Scott
DATE COMPLETED:	04/06/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-01	Modified TO-15 SIM	6.1 "Hg	5.1 psi
02A	IA-02	Modified TO-15 SIM	5.1 "Hg	4.9 psi
03A	IA-03	Modified TO-15 SIM	4.5 "Hg	5.1 psi
04A	IA-04	Modified TO-15 SIM	5.1 "Hg	4.9 psi
05A	IA-05	Modified TO-15 SIM	4.9 "Hg	5.1 psi
06A	IA-DUP	Modified TO-15 SIM	4.5 "Hg	5.1 psi
07A	OA-01	Modified TO-15 SIM	4.9 "Hg	5 psi
08A	Lab Blank	Modified TO-15 SIM	NA	NA
08B	Lab Blank	Modified TO-15 SIM	NA	NA
09A	CCV	Modified TO-15 SIM	NA	NA
09B	CCV	Modified TO-15 SIM	NA	NA
10A	LCS	Modified TO-15 SIM	NA	NA
10AA	LCSD	Modified TO-15 SIM	NA	NA
10B	LCS	Modified TO-15 SIM	NA	NA
10BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 04/06/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# 1603511A

Seven 6 Liter Summa Canister (SIM Certified) samples were received on March 25, 2016. 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	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=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

Dilution was performed on samples IA-01, IA-02, IA-03, IA-04, IA-05, and IA-DUP due to the presence of high level non-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

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

Client Sample ID: IA-01

Lab ID#: 1603511A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.084	0.10	0.53	0.65
Tetrachloroethene	0.084	0.11	0.57	0.74

Client Sample ID: IA-02

Lab ID#: 1603511A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.064	0.096	0.40	0.60
Tetrachloroethene	0.064	0.097	0.44	0.66

Client Sample ID: IA-03

Lab ID#: 1603511A-03A

No Detections Were Found.

Client Sample ID: IA-04

Lab ID#: 1603511A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.080	0.12	0.50	0.74
Tetrachloroethene	0.080	0.10	0.54	0.70

Client Sample ID: IA-05

Lab ID#: 1603511A-05A

No Detections Were Found.

Client Sample ID: IA-DUP

Lab ID#: 1603511A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.063	0.11	0.40	0.69
Tetrachloroethene	0.063	0.10	0.43	0.70

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

Client Sample ID: OA-01

Lab ID#: 1603511A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.032	0.075	0.20	0.47

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Client Sample ID: IA-01

Lab ID#: 1603511A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032917sim**	**Date of Collection:**	**3/23/16 7:01:00 PM**
Dil. Factor:	**4.22**	**Date of Analysis:**	**3/29/16 08:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.042	Not Detected	0.11	Not Detected
1,1-Dichloroethene	0.042	Not Detected	0.17	Not Detected
trans-1,2-Dichloroethene	0.42	Not Detected	1.7	Not Detected
1,1-Dichloroethane	0.084	Not Detected	0.34	Not Detected
cis-1,2-Dichloroethene	0.084	Not Detected	0.33	Not Detected
1,1,1-Trichloroethane	0.084	Not Detected	0.46	Not Detected
Carbon Tetrachloride	0.084	0.10	0.53	0.65
1,2-Dichloroethane	0.084	Not Detected	0.34	Not Detected
Trichloroethene	0.084	Not Detected	0.45	Not Detected
Tetrachloroethene	0.084	0.11	0.57	0.74

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: IA-02

Lab ID#: 1603511A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032918sim**	**Date of Collection: 3/23/16 7:49:00 PM**	
Dil. Factor:	**3.22**	**Date of Analysis: 3/29/16 08:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.032	Not Detected	0.082	Not Detected
1,1-Dichloroethene	0.032	Not Detected	0.13	Not Detected
trans-1,2-Dichloroethene	0.32	Not Detected	1.3	Not Detected
1,1-Dichloroethane	0.064	Not Detected	0.26	Not Detected
cis-1,2-Dichloroethene	0.064	Not Detected	0.26	Not Detected
1,1,1-Trichloroethane	0.064	Not Detected	0.35	Not Detected
Carbon Tetrachloride	0.064	0.096	0.40	0.60
1,2-Dichloroethane	0.064	Not Detected	0.26	Not Detected
Trichloroethene	0.064	Not Detected	0.35	Not Detected
Tetrachloroethene	0.064	0.097	0.44	0.66

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: IA-03

Lab ID#: 1603511A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032919sim**	**Date of Collection:**	**3/23/16 8:20:00 PM**
Dil. Factor:	**7.90**	**Date of Analysis:**	**3/29/16 09:41 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.079	Not Detected	0.20	Not Detected
1,1-Dichloroethene	0.079	Not Detected	0.31	Not Detected
trans-1,2-Dichloroethene	0.79	Not Detected	3.1	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.99	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	Not Detected	0.85	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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

eurofins | Air Toxics

Client Sample ID: IA-04

Lab ID#: 1603511A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032920sim**	**Date of Collection:**	**3/23/16 8:00:00 PM**
Dil. Factor:	**4.02**	**Date of Analysis:**	**3/29/16 10:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.040	Not Detected	0.10	Not Detected
1,1-Dichloroethene	0.040	Not Detected	0.16	Not Detected
trans-1,2-Dichloroethene	0.40	Not Detected	1.6	Not Detected
1,1-Dichloroethane	0.080	Not Detected	0.32	Not Detected
cis-1,2-Dichloroethene	0.080	Not Detected	0.32	Not Detected
1,1,1-Trichloroethane	0.080	Not Detected	0.44	Not Detected
Carbon Tetrachloride	0.080	0.12	0.50	0.74
1,2-Dichloroethane	0.080	Not Detected	0.32	Not Detected
Trichloroethene	0.080	Not Detected	0.43	Not Detected
Tetrachloroethene	0.080	0.10	0.54	0.70

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: IA-05

Lab ID#: 1603511A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033006sim**	**Date of Collection:**	**3/23/16 8:23:00 PM**
Dil. Factor:	**16.1**	**Date of Analysis:**	**3/30/16 11:45 AM**

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	1.6	Not Detected	6.4	Not Detected
1,1-Dichloroethane	0.32	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.32	Not Detected	1.3	Not Detected
1,1,1-Trichloroethane	0.32	Not Detected	1.8	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	Not Detected	1.7	Not Detected
Tetrachloroethene	0.32	Not Detected	2.2	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: IA-DUP

Lab ID#: 1603511A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033007sim**	**Date of Collection: 3/23/16 7:06:00 PM**	
Dil. Factor:	**3.16**	**Date of Analysis: 3/30/16 12:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.032	Not Detected	0.081	Not Detected
1,1-Dichloroethene	0.032	Not Detected	0.12	Not Detected
trans-1,2-Dichloroethene	0.32	Not Detected	1.2	Not Detected
1,1-Dichloroethane	0.063	Not Detected	0.26	Not Detected
cis-1,2-Dichloroethene	0.063	Not Detected	0.25	Not Detected
1,1,1-Trichloroethane	0.063	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.063	0.11	0.40	0.69
1,2-Dichloroethane	0.063	Not Detected	0.26	Not Detected
Trichloroethene	0.063	Not Detected	0.34	Not Detected
Tetrachloroethene	0.063	0.10	0.43	0.70

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: OA-01

Lab ID#: 1603511A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033008sim**	**Date of Collection:**	**3/23/16 8:37:00 PM**
Dil. Factor:	**1.60**	**Date of Analysis:**	**3/30/16 01:29 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	0.075	0.20	0.47
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	Not Detected	0.22	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1603511A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032906sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/29/16 11:53 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	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1603511A-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033005sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 10:42 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	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: CCV

Lab ID#: 1603511A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032902sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/29/16 09:01 AM**	

Compound	%Recovery
Vinyl Chloride	107
1,1-Dichloroethene	104
trans-1,2-Dichloroethene	105
1,1-Dichloroethane	109
cis-1,2-Dichloroethene	105
1,1,1-Trichloroethane	108
Carbon Tetrachloride	107
1,2-Dichloroethane	104
Trichloroethene	102
Tetrachloroethene	103

Container Type: NA - Not Applicable

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

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Client Sample ID: CCV

Lab ID#: 1603511A-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033002sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 08:41 AM**	

Compound	%Recovery
Vinyl Chloride	105
1,1-Dichloroethene	104
trans-1,2-Dichloroethene	105
1,1-Dichloroethane	109
cis-1,2-Dichloroethene	106
1,1,1-Trichloroethane	107
Carbon Tetrachloride	107
1,2-Dichloroethane	106
Trichloroethene	104
Tetrachloroethene	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1603511A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032903sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/29/16 09:35 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	102	70-130
1,1-Dichloroethene	100	70-130
trans-1,2-Dichloroethene	102	70-130
1,1-Dichloroethane	104	70-130
cis-1,2-Dichloroethene	98	70-130
1,1,1-Trichloroethane	102	70-130
Carbon Tetrachloride	98	60-140
1,2-Dichloroethane	102	70-130
Trichloroethene	99	70-130
Tetrachloroethene	101	70-130

Container Type: NA - Not Applicable

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

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Client Sample ID: LCSD

Lab ID#: 1603511A-10AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v032904sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/29/16 10:10 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	105	70-130
1,1-Dichloroethene	102	70-130
trans-1,2-Dichloroethene	104	70-130
1,1-Dichloroethane	106	70-130
cis-1,2-Dichloroethene	100	70-130
1,1,1-Trichloroethane	104	70-130
Carbon Tetrachloride	101	60-140
1,2-Dichloroethane	103	70-130
Trichloroethene	101	70-130
Tetrachloroethene	104	70-130

Container Type: NA - Not Applicable

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

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Client Sample ID: LCS

Lab ID#: 1603511A-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033003sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 09:16 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	101	70-130
1,1-Dichloroethene	98	70-130
trans-1,2-Dichloroethene	101	70-130
1,1-Dichloroethane	103	70-130
cis-1,2-Dichloroethene	97	70-130
1,1,1-Trichloroethane	101	70-130
Carbon Tetrachloride	97	60-140
1,2-Dichloroethane	101	70-130
Trichloroethene	99	70-130
Tetrachloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: LCSD

Lab ID#: 1603511A-10BB

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v033004sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/30/16 09:50 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	103	70-130
1,1-Dichloroethene	99	70-130
trans-1,2-Dichloroethene	103	70-130
1,1-Dichloroethane	104	70-130
cis-1,2-Dichloroethene	98	70-130
1,1,1-Trichloroethane	103	70-130
Carbon Tetrachloride	99	60-140
1,2-Dichloroethane	102	70-130
Trichloroethene	100	70-130
Tetrachloroethene	103	70-130

Container Type: NA - Not Applicable

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

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Chris Turner

Collected by: (Print and Sign) Bob Osborne (TRC)

Company The Johnson Co Email CMT@JCOMAIL.Com

Address 100 State St. Suite 600 City Montpelier State VT Zip 05602

Phone (802) 229-4600 Fax

Project Info:
P.O. #
Project # 1-0145-15
Project Name Avery Dennison Orangeburg, NY

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01a	IA-01	34004	3/23/2016	1132-1901	TO-15 SIM short list	29"	5"		
02a	IA-02	N0628		1130-1949	TO-15 SIM	30"	7"		
03a	IA-03	33562		1137-2020	TO-15 SIM	30"	6"		
04a	IA-04	9936		1134-2006	TO-15 SIM	30"	5.5		
05a	IA-05	11871		1200-2023	TO-15 SIM	30"	5.5		
06a	IA-Dup	N0580		1034-1906	TO-15 SIM	30"	6"		
07a	OA-01	24491	3/23/2016	1213-2037	TO-15 SIM short list	30"	7.5"		
08									

IC 12 3/28/16

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Bob Osborne	3/24/16 1100	[signature]	3-25-16 1020
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: Short list: PCE, TCE cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, Vinyle Chloride carbon tetrachloride, 1,1,1-TCA, 1,1-DCA, 1,2-DCA.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEX		NA	Good	(Yes) No None	1603511

Form 1293 rev.11

APPENDIX E

Phoenix Chemistry Services
Data Validation Report and
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.
1603511A & 1603511B

Chemical Analyses Performed by:

Eurofins Air Toxics, Inc.
180 Blue Ravine Road, Suite B
Folsom, CA 95630-4719

FOR

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

Report by:

Phoenix Chemistry Services
126 Covered Bridge Rd.
N. Ferrisburg, VT 05473
(802) 233-2473

May 20, 2016
Revised June 5, 2016

Reference #2016-0415-001
DUSR/ 1603511A_Bl/dhg

INTRODUCTION

Phoenix Chemistry Services (Phoenix) has completed the data validation and the data usability assessment of the Method TO-15 (volatiles in air) analysis data prepared by Eurofins Air Toxics, Inc. (Laboratory) of Folsom, CA, for 5 indoor air, one outdoor air, five soil vapor samples, and two field duplicates (FDs) from the Avery Dennison Corporation Facility site in Orangeburg, NY (NYSDEC Site No. 344072). The laboratory reported the data under Sample Delivery Group (SDG) Nos. 1603511A and 1605311B, which were submitted as two data packages with Excel and EQuIS format spreadsheet summaries received by Phoenix on April 15, 2016. The sample and laboratory identifiers and the selected analyses are presented in Attachment A.

Analyses were performed according to U.S. EPA Air Toxics 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 10 volatile compounds. Site contaminants of concern are chlorinated solvents, primarily tetrachloroethene, trichloroethene, carbon tetrachloride, and 1,1,1-trichloroethane, and their degradation products.

Tentative identification of non-target analyte peaks (i.e., tentatively identified compounds, or TICs) was not requested or performed for these analyses. Other solvents in use at the site, which are not contaminants of concern for the vapor intrusion investigation, include toluene, 2- butanone (methyl ethyl ketone, MEK), and isopropyl alcohol.

Phoenix Chemistry Services' validation and review were performed in conformance with Stage 4 guidelines as defined by U.S. EPA (EPA 540-R-08-01, June, 2008) and detailed in the "National Functional Guidelines for Superfund Organic Methods Data Review" (EPA 540-R014-002, Aug. 2014), and to the extent possible, the data were evaluated in accordance with guidelines as defined bythe U.S. EPA Region 2 in the Hazardous Waste Support Section SOP No. HW-31, Rev. 6 "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (June, 2014). The New York Department of Environmental Conservation Technical Guidance for Site Investigation and Remediation (DER-10, May, 2010) Appendix 2B Guidance for Data Deliverables and Development of Data Usability Summary Reports were also considered during the evaluation, and professional judgment was applied as necessary and appropriate.

The data validation process evaluates data on a technical basis for chemical analyses conducted under the Contract Laboratory Program (CLP) or other well-defined Methods. In instances where SW-846 or other specific Methods have been used for the analyses, the validation effort is modified to acknowledge the differences in Methodology while maintaining the goals and quality objectives of the CLP. Contract compliance is evaluated only in specific situations, and issues pertaining to contractual compliance are noted where applicable. It is assumed that the data package is presented in accordance with the CLP, CLP-like, or SW-846 requirements. It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation.

The following elements were evaluated or reviewed during the validation effort, except as noted:

- Technical holding times
- Canister cleanliness

- Sample integrity
- Sample collection equipment and processes
- Instrument tuning and calibration
- Instrument and preparation blanks
- Surrogate (non-standard for TO-15) and internal standard recoveries
- Performance evaluation sample recoveries (not available)
- Laboratory control sample spike recoveries
- Field and laboratory duplicates
- Sample quantitation and quantitation limits
- Calculation checks
- Spectral identifications

Results of sample analyses are reported by the laboratory as either qualified or unqualified; various qualifier codes are used by the laboratory to denote specific information regarding the analytical results. During the validation process, laboratory data are verified against all available supporting documentation. Raw data is examined in detail to check calculations, compound identification, and/or transcription errors. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data validator. Validated results are either qualified or unqualified; if results are unqualified, this means that the reported values may be used without reservation. Final validated results are annotated with the following codes, as derived from the National Functional 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 assigned during the validation process and are based on the data review of the results. They are used in this report, summarized in Section VII, and are recorded on the Data Summary Tables in Attachment A and the spreadsheet summary forms in Attachment B of the previously submitted data validation reports.

All data users should note two facts. First, **the "R" qualifier means that the laboratory-reported value is completely unusable.** The analysis is invalid due to significant quality control problems, and provides no information as to whether the compound is present or not. Rejected values should not appear on data tables because they have no useful purpose under any circumstances. Second, **no analyte concentration is guaranteed to be accurate even if all associated quality control is acceptable.** While strict quality control conformance provides well-defined confidence in the reported results, any analytical result will always contain some error.

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

DATA ASSESSMENT

I. Data Package Completeness

The samples in these data sets represent the sample collections from the march 23, 2016 vapor intrusion investigation conducted at the project site. The laboratory reported the results in two data packages, identified as SDG Nos. 1603511A (SIM analyses) and 1603511B (scan analyses).

The data packages were compliant with CLP and DEC Category B guidelines, with a single exception:

- Canister cleanliness certification records were not included with the data packages. A results summary form for each canister was submitted in the data package, and at the validator's request, the raw data files for these analyses were also submitted. Since these records indicate that the canisters were properly certified to the reporting levels required for the intended sampling use, and the laboratory otherwise is capable of providing a full, Category B data package, it was assumed for the validation effort that the certifications had been properly performed, and that the full records would be accessible if needed.

II. Preservation and Technical Holding Times (Sample Integrity)

The air samples for Method TO-15 analysis in this sample set were collected on March 23, 2016 at the Avery Dennison Corporation Facility site in Orangeburg, New York, shipped overnight on March 24, 2016, and were received by the laboratory on March 25, 2016. All volatiles analyses were performed within the acceptable holding times by Method TO-15 (30 days from collection), and within the laboratory holding time of 7 days.

The sample collections, as documented on the chain of custody records and the field sampler's notes, were acceptable. All samples were collected in accordance with the Vapor Intrusion Investigation Work Plan, .and all final canister vacuum measurements were within the targeted range (approximately -7 inches mercury, "Hg, vacuum). Vacuum measurements on receipt at the laboratory were consistent with the field measurements, with small differences (< ±2 "Hg) for all canisters, with the exception of the canister used for the outdoor air sample, which was reported to have gained air equivalent to 2.6 "Hg in transit. Although this is outside the acceptance criterion established in the Work Plan, it is within the EPA Region 2 acceptance limits (≤5 pounds per square inch, psi [equivalent to 10.2 "Hg]), and since this was the outdoor air reference sample, the slight gain in sample volume was deemed to have no impact on data quality, and no qualifications were applied during validation.

III. Quality Control Criteria

Precision and bias criteria are established in the Work Plan (Section 4). Precision must be ±25 percent relative percent difference (%RPD) for all paired field duplicate analyses. Bias is evaluated by assessment of contamination and analyte recoveries. No target analytes previously detected at the site may be detected above their quantitation limits (QLs) in laboratory blanks. Percent recoveries (%R) of spiked analytes in associated laboratory control samples and duplicates (LCS and LCSD analyses) must

be within the laboratory criteria of 60 - 130 %R as specified in the Work Plan, and non-detected results will be qualified or rejected if the associated LCS or LCSD recovery is <50 %R, per NYS guidance.

The samples were analyzed on one GC/MS system, operating in both SIM and scan mode simultaneously; the tuning of the instrument was demonstrated with analysis of bromofluorobenzene (BFB) in accordance with method specifications.

One initial calibration (IC) simultaneously acquired as a SIM and scan analysis (with additional calibration levels for either SIM or scan as appropriate for the expected range in samples) was performed in support of the sample analyses. Documentation of all individual IC standards was present in the data packages and relative response factor (RRF) as well as percent relative standard deviation (%RSD) values were accurately reported on the Form 6 summaries. All average RRFs were above the 0.01 minimum technical criterion established in the laboratory SOPs, and all analytes exhibited %RSDs below the laboratory and NYS maximum limit of 30 %RSD using an average response factor curve fit.

Method detection limit (MDL) studies for the SIM analyses at 0.01 parts per million by volume (ppbv) and a 50 mL sample volume, and at 0.03 ppbv with a 15 mL sample volume were analyzed for the SIM analysis on February 27 and 29 (respectively), 2016, and submitted in support of the project analyses. Method detection limit (MDL) studies for the scan analyses at 0.1ppbv and at 0.5 ppbv (for non-project analytes) were analyzed for the SIM analysis on March 2, 2016, and submitted in support of the project analyses. Verification analyses were performed shortly following the conclusion of each set of MDL studies. Method detection limits for all target analytes were successfully determined, although the target ratios of mean recovered concentration and determined MDL for 1,1,1-trichloroethane were slightly exceeded in one or more of these studies. All MDL values were at least 10-fold less than SIM reporting limits, and all scan analysis MDL values were at least 2-fold less than associated reporting limits.

All non-detected results in samples were at or below applicable screening limits established by the Work Plan, with the exceptions of 1,2-dichloroethane in samples IA-03 and IA-05, for which the screening limit for indoor air is 0.47 ug/m^3, and the practical quantitation limits (PQLs) were 0.64 and 1.3 ug/m^3, respectively. These samples were diluted for the presence of a large non-target analyte in the samples. All non-detects in soil vapor samples met applicable screening limits as presented in the Work Plan.

An Independent Calibration Verification (ICV) sample analysis was also performed following the IC at a concentration of 5 ppbv, and was included in both data packages (SIM and scan). Although not defined in the Method TO-15, the independent verification standard is a NELAC requirement, and was properly performed using an independent standard. All analytes in the ICV were within (<40 %difference, %D) acceptance limits for continuing calibrations established by EPA Region 2 in SOP #HW-31 (Table 4), and were also within laboratory acceptance criteria (<30 %D) for the ICV.

Two continuing calibration (CC) verification standards at 5 ppbv were analyzed in support of these samples. All RRFs were above the 0.01 minimum technical criterion and all percent difference (%D) values in the CC standards were below the Region 2 maximum limit (40%) and the laboratory maximum limit (30 %D), with no exceptions.

No target analytes were detected above the limits specified in the Work Plan in any method blank (MB) in association with this set of samples.

No surrogate compounds are used in Method TO-15; however, the laboratory utilizes the same three surrogates commonly used for volatiles analysis, and sets acceptance criteria for these at 70 – 130

%R in the SOP. All three surrogates were recovered within the laboratory-established QC limits for all reported sample analyses in these data packages.

All internal standard (IS) areas and retention times (RT) were within the established QC limits for all reported sample analyses in these data packages.

The laboratory submitted results for three laboratory control sample (LCS) or matrix spike blank (MSB) analyses and three laboratory control sample duplicates (LCSD) in support of the samples in this data set; two pairs were reported by SIM, and one set by scan. All analytes were recovered within the laboratory and NYS limits of 70 – 130 %R for spiked analyses, and precision was acceptable (<25 %RPD) in these paired analyses.

Results above twice the quantitation limit were reported in both members of the soil vapor field duplicate pair (SS-05 and SS-DUP), for the analytes 1,1,-dichloroethane, 1,1,1-trichloroethane, carbon tetrachloride, trichloroethene, and tetrachloroethene, and results just slightly above the quantitation limit were reported in both members of the indoor air field duplicate pair IA-04 and IA-DUP. Precision was acceptable (<25 %RPD) for all paired analyses.

No qualifications resulting from exceedances of established criteria were required in the Method TO-15 SIM or scan analyses for this sample set.

IV. Analytical Compliance

All analyses were performed in accordance with laboratory SOPs and published methods, with the following exceptions:

- Sample OA-01 gained 2.6 inches Hg (“ Hg) from sampling to receipt. Since this is within the NYSDEC acceptance limits, and the sample is an outdoor air reference sample, this slight gain in air volume was not considered to have an impact on data quality, and no qualifications were deemed necessary.

- The laboratory’s Form 7 presents percent difference (%D) values with a negative [-] bias with a positive [+] sign, and vice versa. Bias should be correctly presented in the data submittals.

V. Raw Data Evaluation

No manual integrations were performed on target analytes in calibrations, quality control samples, or sample analyses.

Instrument tuning and calibration were checked using raw data in each data package, and were correctly performed and accurately reported. Recoveries in spiked analyses and precision in duplicate analyses were checked using raw data, and were correctly calculated and accurately reported.

Target compound quantitation and practical quantitation limits (PQLs) were correctly calculated and accurately reported on the laboratory summary results reports within the data packages.

Examination of raw data for all sample analyses was performed, and spectral identifications were verified during the validation effort.

VI. Use of Data Qualifiers

All laboratory-applied qualifications (if any) on sample results were correctly applied.

All samples required a dilution due to the system configuration (canister pressurization with nitrogen). The dilution factors used by the laboratory are accurate to fewer significant figures than implied by the benchsheets, but the errors introduced are of relatively small significance (<10%) in the final calculations of sample concentrations.

Additional dilutions were performed for all indoor air samples to bring high concentrations of a non-target analyte to a level tolerable for normal laboratory operations. Two samples (IA-03 and IA-05) required high dilutions (factors of 7.9 and 16.1, respectively), and the three remaining samples (IA-01, IA-02, IA-04, and IA-DUP) were analyzed at dilution factors ranging from 3.16 to 4.2. The outdoor air sample OA-01 and all soil vapor samples analyzed by scan required no additional dilution other than those necessitated by canister pressurization.

Sample results less than the sample-specific quantitation limit were not requested or reported by the laboratory. All non-detected results were below applicable screening limits, with the exception of 1,2-dichloroethane in samples IA-03 and IA-05, for which the screening limit for indoor air is 0.47 ug/m^3, and the PQLs were 0.64 and 1.3 ug/m^3, respectively.

No qualifications of sample results were required as a result of the data validation effort.

Calibration standards and quality control samples were reported with additional compounds which were not used to report sample results. No qualifications were applied to sample results on the basis of quality control exceedances for compounds which were not reported in samples.

VII. Quality Control Exceedances

No qualifications of sample results were required as a result of the data validation effort.

OVERALL EVALUTION

The validation and usability assessment indicate that the data from this sample set are usable for the intended purposes as qualified during the validation, with the following observations:

- Sample OA-01 gained 2.6 inches Hg (“ Hg) from sampling to receipt. Since this is within the NYSDEC acceptance limits, and the sample is an outdoor air reference sample, this slight gain in air volume was not considered to have an impact on data quality, and no qualifications were deemed necessary.

- The laboratory’s Form 7 presents percent difference (%D) values with a negative [-] bias with a positive [+] sign, and vice versa. Bias should be correctly presented in the data submittals.

- All non-detected results were below applicable screening limits, with the exception of 1,2-dichloroethane in samples IA-03 and IA-05, for which the screening limit for indoor air is 0.47 ug/m^3, and the PQLs were 0.64 and 1.3 ug/m^3, respectively.

ATTACHMENT A

Sample Identification Cross Reference Tables
SDG Nos. 1603511A and 1603511B
Volatile Organics in Air Samples

Sample Identification Cross Reference Table

Sample Identification	Laboratory Identification	Analytical Method
SDG No. 1603511A		
IA-01	1603511-01	TO-15 SIM
IA-02	1603511-02	TO-15 SIM
IA-03	1603511-03	TO-15 SIM
IA-04	1603511-04	TO-15 SIM
IA-05	1603511-05	TO-15 SIM
IA-DUP	1603511-06	TO-15 SIM
OA-01	1603511-07	TO-15 SIM
SDG No. 1603511B		
SS-01	1603511-08	TO-15 scan
SS-02	1603511-09	TO-15 scan
SS-03	1603511-10	TO-15 scan
SS-04	1603511-11	TO-15 scan
SS-05	1603511-12	TO-15 scan
SS-DUP	1603511-13	TO-15 scan
SS-01	1603511-08	TO-15 scan

ATTACHMENT B

Laboratory Case Narratives and Chain of Custody Documents
SDG Nos. 1603511A and 1603511B
Volatile Organics in Air Samples

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WORK ORDER #: 1603511A

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 Avery Dennison Orangeburg, NY
DATE RECEIVED:	03/25/2016	**CONTACT:**	Ausha Scott
DATE COMPLETED:	04/06/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-01	Modified TO-15 SIM	6.1 "Hg	5.1 psi
02A	IA-02	Modified TO-15 SIM	5.1 "Hg	4.9 psi
03A	IA-03	Modified TO-15 SIM	4.5 "Hg	5.1 psi
04A	IA-04	Modified TO-15 SIM	5.1 "Hg	4.9 psi
05A	IA-05	Modified TO-15 SIM	4.9 "Hg	5.1 psi
06A	IA-DUP	Modified TO-15 SIM	4.5 "Hg	5.1 psi
07A	OA-01	Modified TO-15 SIM	4.9 "Hg	5 psi
08A	Lab Blank	Modified TO-15 SIM	NA	NA
08B	Lab Blank	Modified TO-15 SIM	NA	NA
09A	CCV	Modified TO-15 SIM	NA	NA
09B	CCV	Modified TO-15 SIM	NA	NA
10A	LCS	Modified TO-15 SIM	NA	NA
10AA	LCSD	Modified TO-15 SIM	NA	NA
10B	LCS	Modified TO-15 SIM	NA	NA
10BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY:  DATE: 04/06/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# 1603511A

Seven 6 Liter Summa Canister (SIM Certified) samples were received on March 25, 2016. 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	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=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

Dilution was performed on samples IA-01, IA-02, IA-03, IA-04, IA-05, and IA-DUP due to the presence of high level non-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

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
IA-01	1603511A-01A	3/23/2016	3/25/2016	NA	6	3/29/2016	NA	Good
IA-02	1603511A-02A	3/23/2016	3/25/2016	NA	6	3/29/2016	NA	Good
IA-03	1603511A-03A	3/23/2016	3/25/2016	NA	6	3/29/2016	NA	Good
IA-04	1603511A-04A	3/23/2016	3/25/2016	NA	6	3/29/2016	NA	Good
IA-05	1603511A-05A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
IA-DUP	1603511A-06A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
OA-01	1603511A-07A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
Lab Blank	1603511A-08A	NA	NA	NA	NA	3/29/2016	NA	Good
Lab Blank	1603511A-08B	NA	NA	NA	NA	3/30/2016	NA	Good
CCV	1603511A-09A	NA	NA	NA	NA	3/29/2016	NA	Good
CCV	1603511A-09B	NA	NA	NA	NA	3/30/2016	NA	Good
LCS	1603511A-10A	NA	NA	NA	NA	3/29/2016	NA	Good
LCSD	1603511A-10AA	NA	NA	NA	NA	3/29/2016	NA	Good
LCS	1603511A-10B	NA	NA	NA	NA	3/30/2016	NA	Good
LCSD	1603511A-10BB	NA	NA	NA	NA	3/30/2016	NA	Good

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FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Chris Turner
Collected by: (Print and Sign) Bob Osborne (TRC)
Company The Johnson Co Email CMT@JCOMAIL.Com
Address 100 State St. Suite 600 City Montpelier State VT Zip 05602
Phone (802) 229-4600 Fax

Project Info:
P.O. #
Project # 1-0145-15
Project Name Avery Dennison Orangeburg, NY

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01a	IA-01	34004	3/23/2016	1132-1901	TO-15 SIM short list	29"	5"		
02a	IA-02	N0628		1130-1949	TO-15 SIM	30"	7"		
03a	IA-03	33562		1137-2020	TO-15 SIM	30"	6"		
04a	IA-04	9936		1134-2006	TO-15 SIM	30"	5.5		
05a	IA-05	11871		1200-2023	TO-15 SIM	30"	5.5		
06a	IA-Dup	N0580		1034-1906	TO-15 SIM	30"	6"		
07a	OA-01	24491	3/23/2016	1213-2037	TO-15 SIM short list	30"	7.5"		
08									

IC 12 3/28/16

Relinquished by: (signature) Date/Time: Bob Osborne 3/24/16 1100
Received by: (signature) Date/Time: [illegible] 3-25-16 1020
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:

Notes: Short list: PCE, TCE cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, Vinyle Chloride carbon tetrachloride, 1,1,1-TCA, 1,1-DCA, 1,2-DCA.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEX		NA	Good	(Yes) No None	1603511

Form 1293 rev.11

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WORK ORDER #: 1603511B

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 Avery Dennison Orangeburg, NY
DATE RECEIVED:	03/25/2016	**CONTACT:**	Ausha Scott
DATE COMPLETED:	04/06/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
08A	SS-01	Modified TO-15	5.5 "Hg	5 psi
09A	SS-02	Modified TO-15	6.1 "Hg	5 psi
10A	SS-03	Modified TO-15	4.3 "Hg	5 psi
11A	SS-04	Modified TO-15	5.3 "Hg	5.1 psi
12A	SS-05	Modified TO-15	5.1 "Hg	4.9 psi
13A	SS-DUP	Modified TO-15	4.1 "Hg	5 psi
14A	Lab Blank	Modified TO-15	NA	NA
15A	CCV	Modified TO-15	NA	NA
16A	LCS	Modified TO-15	NA	NA
16AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 04/06/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# 1603511B

Six 6 Liter Summa Canister (SIM Certified) samples were received on March 25, 2016. 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

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

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
SS-01	1603511B-08A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
SS-02	1603511B-09A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
SS-03	1603511B-10A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
SS-04	1603511B-11A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
SS-05	1603511B-12A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
SS-DUP	1603511B-13A	3/23/2016	3/25/2016	NA	7	3/30/2016	NA	Good
Lab Blank	1603511B-14A	NA	NA	NA	NA	3/30/2016	NA	Good
CCV	1603511B-15A	NA	NA	NA	NA	3/30/2016	NA	Good
LCS	1603511B-16A	NA	NA	NA	NA	3/30/2016	NA	Good
LCSD	1603511B-16AA	NA	NA	NA	NA	3/30/2016	NA	Good

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FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Chris Turner

Collected by: (Print and Sign) Bob Osborne (IRO)

Company The Johnson Co Email CMT@TCOMAIL.com

Address 100 State St, Suite 600 City Montpelier State VT Zip 05602

Phone (802) 229-4600 Fax

Project Info:
P.O. #
Project # 1-0145-15
Avery Dennison
Project Name Orangeburg, NY

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
08a	SS-01	33925	3/23/2016	1132-2014	TO-15 * short List	30"	7"		
09a	SS-02	24479		1130-1916	TO-15	28"	5"		
10a	SS-03	34429		1137-2021	TO-15	30"	6"		
11a	SS-04	34015		1134-1918	TO-15	29"	5"		
12a	SS-05	NO640		1200-2024	TO-15	30"	5.0		
13a	SS-Dup	13669	3/23/2016	1100-1924	TO-15 * short List	30"	5.5"		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
[signature] 3/24/16 1100	[signature] 3-25-16 1020
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes: *short list: PCE, TCE cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE Vinyle Chloride, Carbon Tetrachloride, 1,1,1-TCA, 1,1-DCA + 1,2-DCA.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEX		n/a	Good	(Yes) No None	160311

Form 1293 rev.11

DATA VALIDATION

FOR

AD-Orangeburg
ORANGEBURG, NY
NYSDEC Site No. 344072

ORGANIC ANALYSIS DATA
Selected Volatiles in Air Samples

Sample Delivery Group Nos. 1603511A & 1603511B

Chemical Analyses Performed by:

Eurofins Air Toxics, Inc.
180 Blue Ravine Road, Suite B
Folsom, CA 95630-4719

FOR

The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602

Data Validation Report by:

Phoenix Chemistry Services
126 Covered Bridge Rd.
N. Ferrisburg, VT 05473
802-233-2473

May 20, 2016
Revised June 5, 2016

EXECUTIVE SUMMARY

Phoenix Chemistry Services (Phoenix) has completed the validation of the TO-15 (selected volatiles in indoor air, outdoor air, and soil vapor) analysis data for selected volatiles prepared by Eurofins Air Toxics, Inc., of Folsom, CA for five (5) indoor air, one outdoor air, five sub-slab (soil vapor) samples and 2 field duplicates (FDs) from the Avery Dennison Corporation Facility Site (NYSDEC Site No. 344072) in Orangeburg, NY. The laboratory reported the data under Sample Delivery Group (SDG*)* Nos. 1603511A & 1603511B, which were received by Phoenix on April 15, 2016, and which include the following samples:

Sample Identifier (ID)	Laboratory ID
IA-01	1603511-01
IA-02	1603511-02
IA-03	1603511-03
IA-04	1603511-04
IA-05	1603511-05
IA-DUP	1603511-06
OA-01	1603511-07
SS-01	1603511-08
SS-02	1603511-09
SS-03	1603511-10
SS-04	1603511-11
SS-05	1603511-12
SS-DUP	1603511-13

A cross-reference of sample IDs was provided in the data packages. The samples in this data set represent the approximately 8-hour sample collections on March 23, 2016; the samples were shipped to the laboratory on 3/24/16 and were received on 3/25/16.

Results for all compounds were determined to be valid as reported for all samples in SDG Nos. 1603511A & 1603511B, with the following observation:

- The canisters used for the outdoor air sample OA-01 exhibited a vacuum measurement on receipt at the laboratory that was 2.6 inches mercury (“ Hg) less than measured in the field. This gain in air volume is within NY State acceptance limits, and since this is an outdoor air sample, no qualifications were deemed necessary on the basis of the slight loss of vacuum during transit.

The Overall Evaluation of Data (Section XVI) summarizes the validation results. The validation findings and conclusions for each analytical parameter are detailed in the remaining sections of this report.

Documentation in the data package is discussed in Section XVII.

This validation report shall be considered part of the data package for all future distributions of TO-15 (selected volatiles in air) analysis data.

INTRODUCTION

Analyses were performed according to EPA Method TO-15, as documented in Eurofins Air Toxics, Inc. SOP #83, Rev. 14, and by Method TO-15 modified for selected ion monitoring (SIM), as documented in SOP #38, Rev. 19. The target compound list for volatiles was limited to the following 10 chlorinated solvents: vinyl chloride, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, carbon tetrachloride, 1,2-dichloroethane, trichloroethene, and tetrachloroethene.

Tentative identification of non-target analyte peaks (i.e., tentatively identified compounds, or TICs) was also not requested for these analyses.

Phoenix's validation was performed in conformance with Stage 4 guidelines as defined by the USEPA (EPA 540-R-08-01, June, 2008). To the extent possible, the data were evaluated in accordance with the U.S. EPA "National Functional Guidelines for Superfund Organic Methods Data Review" (EPA 540-R014-002, Aug. 2014) and the U.S. EPA Hazardous Waste Support Section, SOP No. HW-31, Rev. 6 "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (June, 2014). The "Soil Vapor Intrusion Investigation Work Plan" (The Johnson Company, Feb. 2016) for the Avery Dennison Corporation Facility, Orangeburg, Rockland County, New York, NYSDEC Site # 344072 was also considered during the evaluation, and professional judgment was applied as necessary and appropriate.

The data validation process evaluates data on a technical basis for chemical analyses conducted under the U.S. EPA Contract Laboratory Program (CLP) or other well-defined methods. Contract compliance is evaluated only in specific situations. Issues pertaining to contractual compliance are noted where applicable. It is assumed that the data package is presented in accordance with the CLP (CLP-like or SW-846) requirements. It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation. In instances where SW-846 or other specific methods have been used for the analyses, the validation effort is modified to acknowledge the differences in methodology while maintaining the goals and quality objectives of the CLP.

Results of sample analyses are reported by the laboratory as either qualified or unqualified; various qualifier codes are used by the laboratory to denote specific information regarding the analytical results. During the validation process, laboratory data are verified against all available supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data validator. Validated results are either qualified or unqualified; if results are unqualified, this means that the reported values may be used without reservation. Final validated results are annotated with the following codes, as defined in the EPA National Functional 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 (qualifiers) are assigned during the validation process and are based on the data review of the results. They are recorded in the Data Summary Table contained in Attachment A and the spreadsheet summary file in Attachment B (submitted electronically) of this validation report.

All data users should note two facts. First, **the "R" qualifier means that the laboratory-reported value is completely unusable.** The analysis is invalid due to significant quality control problems, and provides no information as to whether the compound is present or not. Rejected values should not appear on data tables because they have no useful purpose under any circumstances. Second, **no analyte concentration is guaranteed to be accurate even if all associated quality control is acceptable.** While strict quality control conformance provides well-defined confidence in the reported results, any analytical result will always contain some error.

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

Detailed Findings of Measurement Error Associated with the Analytical Analysis

I. Sample Integrity

The indoor and outdoor air and soil vapor samples for TO-15 analysis were collected for approximately an 8-hour period during the daytime on March 23, 2016, and received by the laboratory on March 25, 2016. All TO-15 analyses were performed within the acceptable holding times for air samples (30 days from collection), as required by Method TO-15 and EPA Region 2.

The Ambient Air and Soil Vapor Sampling Forms and sampler's field notes show that the sample canisters were collected and transported according to method specifications, and were checked and found to be within specifications of the Work Plan. The laboratory login Sample Receipt Summary shows the final vacuum readings for the canisters on receipt. All canister vacuums were consistent from the laboratory to the field prior to sampling, with the single exception that sample OA-01 gained 2.6 inches Hg (" Hg) from sampling to receipt. Since this is within the EPA Region 2 acceptance limits (≤5 pounds per square inch, psi [equivalent to 10.2 "Hg]), and the sample is an outdoor air reference sample, this slight gain in air volume was not considered to have an impact on data quality, and no qualifications were deemed necessary. All samples were collected in accordance with the Vapor Intrusion Investigation Work Plan.

The certified clean canisters were shipped under chain of custody from the laboratory before sample collection, and the canisters were shipped back to the laboratory on 3/24/16. A full canister cleanliness certification data package was not included in the data submittal, although a Form 1-like summary for each canister was included. On request, the laboratory submitted the raw data for the individual canister analyses, which was examined by the data validator. These raw data files, in combination with the summary reports submitted with the data packages, indicate that the canisters were properly certified to the reporting levels required for the intended sampling use.

II. GC/MS Instrument Performance Check (Tuning)

The samples for volatiles in air analysis from SDG Nos. 1603511A & 1603511B were analyzed on a single GC/MS system identified as instrument MSDV. The tuning of this instrument was demonstrated with analysis of 4-bromofluorobenzene (BFB); tunes were analyzed for each 24-hour period during which the samples or associated standards were analyzed. All three BFB tunes were correctly calculated, within acceptance limits, and are reported accurately on the Form 5 summaries in the data packages.

III. Initial Calibration (IC)

One IC (3/15/16) was performed in support of the TO-15 sample analyses reported in this data package. The IC was performed as a simultaneous SIM and scan analysis. The SIM IC was performed at eleven concentration levels (0.0030, 0.0050, 0.010, 0.020, 0.050, 0.100, 0.500, 1.00, 5.00, 10.0, and 20.0 parts per billion by volume [ppbv]), for trichloroethene and tetrachloroethene, at eight levels (starting at 0.020 ppbv) for 1,1-dichloroethane and 1,1,1-trichloroethane, and at ten levels (starting at 0.005 ppbv) for the remaining analytes in the limited list of target analytes for this project. The scan IC was performed at

the seven (7) highest concentration levels used for the SIM IC (from 0.05 ppb to 20 ppbv) and an 8th concentration level at 40 ppbv for vinyl chloride, 1,1-dichloroethane, 1,2-dichloroethane, carbon tetrachloride, trichloroethene, and tetrachloroethene. The analytes 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and 1,1,1-trichloroethane were calibrated at seven concentration levels, from 0.01 ppbv to 40 ppbv. All target analytes (SIM and scan) were reported at quantitation limits that were at or above the lowest calibration standard reported in the IC for each analyte.

Documentation of all individual IC standards was present in the data package and relative response factor (RRF) as well as percent relative standard deviation (%RSD) values were correctly calculated and accurately reported on the Form 6 summaries. No target analytes were manually integrated for any standards or samples in this data set.

All RRFs were above the minimum technical criteria and all %RSDs were below the maximum limits specified by the EPA's National Functional Guidelines for volatiles for the project target analytes in the IC.

An independent calibration verification (ICV) standard at 5 ppbv was analyzed following the IC, as required by the method; this was reported as a laboratory control sample (LCS) analysis. All reported results for target analytes were recovered within 102 – 106 percent recovery (%R) of expected values.

IV. Continuing Calibration (CC)

Two continuing calibration (CC) standards were run on MSDV in support of the sample analyses reported in these data packages. The RRF as well as percent difference (%D) values were reported on the Form 7 summaries within the data packages.

All RRFs were above the minimum criterion, and all %D results were below the maximum limit in the CC standards. It should be noted that on the laboratory's Form 7, %D values with a negative [-] bias were given a positive [+] sign, and vice versa.

V. Blanks

Results for two (2) volatile air-matrix laboratory method blanks (MBs) were reported in association with this set of samples. No target analytes were detected in the MBs.

No trip blanks (TBs) were required or submitted in this data set.

VI. Surrogate Compounds

No surrogate compounds are used in Method TO-15; however, the laboratory utilizes the same three surrogates commonly used for volatiles analysis, and sets acceptance criteria for these at 70 – 130 %R in the SOP. All three surrogates were recovered within the laboratory-established QC limits for all reported sample analyses in these data packages.

VII. Internal Standards (IS)

All IS areas and retention times (RT) were within the established QC limits for all reported sample analyses in these data packages.

VIII. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

A matrix spike/matrix spike duplicate (MS/MSD) analysis is not used in this method.

IX. Field Duplicates

Sample IA-DUP was identified as a field duplicate of IA-04, and sample SS-DUP was identified as a field duplicate of SS-05. The indoor air samples were both diluted for the presence of a non-target analyte at a high concentration; however, carbon tetrachloride and tetrachloroethene were detected slightly above their limits of quantitation (LOQ) in both of the field duplicates, and each exhibited acceptable precision (7.0% and 0.0% relative percent difference, RPD).

In the soil vapor field duplicate pair SS-05 and SS-DUP, the analytes 1,1,-dichloroethane, 1,1,1-trichloroethane, carbon tetrachloride, trichloroethene, and tetrachloroethene were all reported in both members of the field duplicate pair above twice their respective quantitation limits, and 1,1-dichloroethene was reported just below twice its quantitation limit. All analytes exhibited acceptable precision (0 – 6.4 %RPD) in the field duplicate pair SS-05 and SS-DUP.

No other analytes were reported in either of these field duplicate pairs, so precision could not be evaluated for the remaining analytes.

X. Sensitivity Check

The current method detection limit (MDL) studies for Method TO-15 SIM and scan were submitted at the validator's request, and were analyzed on instrument MDLV on February 27, 2016 (SIM) and March 2, 2016 (scan). All project analytes in these studies had calculated MDL values below the method quantitation limits. Additionally, the low initial calibration standard for this analysis is analyzed and reported at or below the quantitation limit for each analyte.

On the basis of acceptable sensitivity and accuracy, as demonstrated by the MDL values and supported by the reported low standards of the initial calibrations, all results for the TO-15 SIM and scan air analyses (detects and non-detects) not qualified for other reasons are deemed acceptable as reported.

XI. Performance Evaluation (PE) Samples/Accuracy Check

Two air-matrix, zero blind PE samples (commonly known as a laboratory control samples, LCSs) and two laboratory control sample duplicates (LCSDs) were prepared at 5 ppbv (both SIM and scan) and analyzed by the laboratory in support of these sample analyses. Two LCS/LCSD sets were analyzed and reported in support of the SIM, and the second set was also reported by scan in support of the scan

analyses. Percent recoveries (%R) were accurately reported on the Form 3 summaries in the data packages, and were within (SIM: 96 – 106 %R, and scan: 98 – 112 %R) established QC limits (70 – 130 %R) for all target analytes. Precision was acceptable (range: 0 – 3.0 %RPD by SIM and 0.97 – 5.6 %RPD by scan; limit 25 %RPD) in the LCS/LCSD paired analyses.

No external single-blind PE sample was required or submitted with the samples in this data set.

XII. Target Compound Identification

Reported target compounds were correctly identified for all samples in this data set.

XIII. Compound Quantitation and Reported Quantitation Limits

Target compound quantitation and practical quantitation limits (PQLs) are correctly reported on the Form 1 summaries and in the electronic spreadsheet results. The reported low standard of the IC is at or below the concentration of the LOQ for all analytes, including correction for sample-specific analysis volumes and dilutions. Results are shown on the laboratory Sample Results forms in units of both ppbv and ug/m^3. All non-detected results in samples were at or below minimum limits established by the Work Plan, with the exceptions of 1,2-dichloroethane in samples IA-03 and IA-05, for which the screening limit for indoor air is 0.47 ug/m^3, and the PQLs were 0.64 and 1.3 ug/m^3, respectively. All non-detects in soil vapor samples met applicable screening limits as presented in the Work Plan.

Results greater than the MDL but less than the sample-specific PQL were not requested or reported in this data set, and were not needed to achieve required sensitivity, with the two exceptions noted above; these samples were analyzed at dilution factors of 7.90 and 16.1, respectively, due to the presence of a non-target analyte at high concentrations. An undiluted analysis was not reported for either sample. Due to the system configuration, all sample canisters were diluted with analyte-free nitrogen to accomplish sample introduction, and several samples were diluted on the basis of screening results due to the presence of a non-target analyte at high concentrations. Only the outdoor air sample (OA-01) and the scan analyses were analyzed at full strength, with dilution factors ranging from 1.54 to 1.68. Samples IA-01, IA-02, IA-04, and IA-DUP were analyzed at slight dilutions (dilution factors of 3.16 to 4.2) due to the presence of a non-target analyte at high concentrations in these samples.

The values that the validator has judged to be acceptable are presented in the "Validator_Result" column in the Data Summary Table in Attachment A and in the spreadsheet summary file submitted electronically as Attachment B. The final qualifiers based on the validation effort are presented in the "Validator_Qualifier" column in the Data Summary Table and in the spreadsheet summary file. All results, positive and non-detect, are listed in the these summaries, whether or not the value or qualifier was changed as a result of the validation; if a value or qualifier was changed, this is indicated by the "Y" (for yes) notation in the column "Validator_Change" in the Data Summary Table. A brief explanation of the reason for the validation change is coded in the "Validator_Reason" column in the Data Summary Table and the full spreadsheet summary file; the definitions of these codes are given at the end of the Data Summary Table and on a separate tab of the spreadsheet file. Sample-specific (practical) quantitation limits (PQL) are given for non-detected results in the spreadsheet summaries.

XIV. Tentatively Identified Compounds (TICs)

Evaluation of unidentified, non-target analyte peaks was not requested or performed for these samples.

XV. System Performance

The analytical system appears to have been working acceptably for all samples reported in this data package, based on instrument printouts and spectral quality, and evaluation of all available raw data.

XVI. Overall Evaluation of Data

Results for all compounds were determined to be valid as reported for all samples in SDG Nos. 1603511A & 1603511B with the following observation:

- Sample OA-01 gained 2.6 inches Hg (“ Hg) from sampling to receipt. Since this is within the EPA Region 2 acceptance limits, and the sample is an outdoor air reference sample, this slight gain in air volume was not considered to have an impact on data quality, and no qualifications were deemed necessary.

Documentation problems observed in the data package are described in Section XVII.

XVII. Documentation

Chain-of-custody (COC) records were present and completed accurately, and are consistent with the field notes separately supplied to the validator.

Internal COC records are not required, as the laboratory provides sufficient sample tracking and security systems by other methods.

Summary records for canister cleanliness were included with the data package. The full analytical records were requested, and raw data was received on 5/13/16 and reviewed as part of the validation effort; these records should be permanently maintained with the data.

Data presentation was acceptable, with the following exceptions:

- The laboratory’s Form 7 presents percent difference (%D) values with a negative [-] bias with a positive [+] sign, and vice versa. Bias should be correctly presented in the data submittals.

- A full canister cleanliness certification data package was not included in the data submittal, although a Form 1-like summary and sample raw data for each canister was included. A full certification data package is not routinely provided by the laboratory. No further documentation of canister cleanliness was requested from the laboratory, as the materials provided indicate that procedures were properly followed. Should supplemental

documentation be required in the future, it is our understanding that the laboratory would be able to produce it.

This validation report should be considered part of the data package for all future distributions of the volatiles in air (cis-1,2-dichloroethene, trichloroethene and tetrachloroethene) data.

ATTACHMENT A

DATA SUMMARY TABLE
SDG Nos. 1603511A & 1603511B
Selected Compounds in Air Samples

SAMPLE_ID	LAB_ID	SDG	ANALYTE	Validator_ Result (ppbv)	PQL (ppbv)	Validator_ Result (ug/m3)	PQL (ug/m3)	Validator_ Qualifier	Dilution	Validator_ Change
IA-01	1603511A-01A	1603511A	Vinyl Chloride	0.042	0.042	0.11	0.11	U	4.22	N
IA-01	1603511A-01A	1603511A	1,1-Dichloroethene	0.042	0.042	0.17	0.17	U	4.22	N
IA-01	1603511A-01A	1603511A	trans-1,2-Dichloroethene	0.42	0.42	1.7	1.7	U	4.22	N
IA-01	1603511A-01A	1603511A	1,1-Dichloroethane	0.084	0.084	0.34	0.34	U	4.22	N
IA-01	1603511A-01A	1603511A	cis-1,2-Dichloroethene	0.084	0.084	0.33	0.33	U	4.22	N
IA-01	1603511A-01A	1603511A	1,1,1-Trichloroethane	0.084	0.084	0.46	0.46	U	4.22	N
IA-01	1603511A-01A	1603511A	Carbon Tetrachloride	0.10	0.084	0.65	0.53		4.22	
IA-01	1603511A-01A	1603511A	1,2-Dichloroethane	0.084	0.084	0.34	0.34	U	4.22	N
IA-01	1603511A-01A	1603511A	Trichloroethene	0.084	0.084	0.45	0.45	U	4.22	N
IA-01	1603511A-01A	1603511A	Tetrachloroethene	0.11	0.084	0.74	0.57		4.22	
IA-02	1603511A-02A	1603511A	Vinyl Chloride	0.032	0.032	0.082	0.082	U	3.22	N
IA-02	1603511A-02A	1603511A	1,1-Dichloroethene	0.032	0.032	0.13	0.13	U	3.22	N
IA-02	1603511A-02A	1603511A	trans-1,2-Dichloroethene	0.32	0.32	1.3	1.3	U	3.22	N
IA-02	1603511A-02A	1603511A	1,1-Dichloroethane	0.064	0.064	0.26	0.26	U	3.22	N
IA-02	1603511A-02A	1603511A	cis-1,2-Dichloroethene	0.064	0.064	0.26	0.26	U	3.22	N
IA-02	1603511A-02A	1603511A	1,1,1-Trichloroethane	0.064	0.064	0.35	0.35	U	3.22	N
IA-02	1603511A-02A	1603511A	Carbon Tetrachloride	0.096	0.064	0.60	0.40		3.22	
IA-02	1603511A-02A	1603511A	1,2-Dichloroethane	0.064	0.064	0.26	0.26	U	3.22	N
IA-02	1603511A-02A	1603511A	Trichloroethene	0.064	0.064	0.35	0.35	U	3.22	N
IA-02	1603511A-02A	1603511A	Tetrachloroethene	0.097	0.064	0.66	0.44		3.22	
IA-03	1603511A-03A	1603511A	Vinyl Chloride	0.079	0.079	0.20	0.20	U	7.90	N
IA-03	1603511A-03A	1603511A	1,1-Dichloroethene	0.079	0.079	0.31	0.31	U	7.90	N
IA-03	1603511A-03A	1603511A	trans-1,2-Dichloroethene	0.79	0.79	3.1	3.1	U	7.90	N
IA-03	1603511A-03A	1603511A	1,1-Dichloroethane	0.16	0.16	0.64	0.64	U	7.90	N
IA-03	1603511A-03A	1603511A	cis-1,2-Dichloroethene	0.16	0.16	0.63	0.63	U	7.90	N
IA-03	1603511A-03A	1603511A	1,1,1-Trichloroethane	0.16	0.16	0.86	0.86	U	7.90	N
IA-03	1603511A-03A	1603511A	Carbon Tetrachloride	0.16	0.16	0.99	0.99	U	7.90	N
IA-03	1603511A-03A	1603511A	1,2-Dichloroethane	0.16	0.16	0.64	0.64	U	7.90	N
IA-03	1603511A-03A	1603511A	Trichloroethene	0.16	0.16	0.85	0.85	U	7.90	N
IA-03	1603511A-03A	1603511A	Tetrachloroethene	0.16	0.16	1.1	1.1	U	7.90	N
IA-04	1603511A-04A	1603511A	Vinyl Chloride	0.040	0.040	0.10	0.10	U	4.02	N
IA-04	1603511A-04A	1603511A	1,1-Dichloroethene	0.040	0.040	0.16	0.16	U	4.02	N
IA-04	1603511A-04A	1603511A	trans-1,2-Dichloroethene	0.40	0.40	1.6	1.6	U	4.02	N
IA-04	1603511A-04A	1603511A	1,1-Dichloroethane	0.080	0.080	0.32	0.32	U	4.02	N
IA-04	1603511A-04A	1603511A	cis-1,2-Dichloroethene	0.080	0.080	0.32	0.32	U	4.02	N
IA-04	1603511A-04A	1603511A	1,1,1-Trichloroethane	0.080	0.080	0.44	0.44	U	4.02	N
IA-04	1603511A-04A	1603511A	Carbon Tetrachloride	0.12	0.080	0.74	0.50		4.02	
IA-04	1603511A-04A	1603511A	1,2-Dichloroethane	0.080	0.080	0.32	0.32	U	4.02	N
IA-04	1603511A-04A	1603511A	Trichloroethene	0.080	0.080	0.43	0.43	U	4.02	N
IA-04	1603511A-04A	1603511A	Tetrachloroethene	0.10	0.080	0.70	0.54		4.02	
IA-05	1603511A-05A	1603511A	Vinyl Chloride	0.16	0.16	0.41	0.41	U	16.1	N
IA-05	1603511A-05A	1603511A	1,1-Dichloroethene	0.16	0.16	0.64	0.64	U	16.1	N
IA-05	1603511A-05A	1603511A	trans-1,2-Dichloroethene	1.6	1.6	6.4	6.4	U	16.1	N
IA-05	1603511A-05A	1603511A	1,1-Dichloroethane	0.32	0.32	1.3	1.3	U	16.1	N
IA-05	1603511A-05A	1603511A	cis-1,2-Dichloroethene	0.32	0.32	1.3	1.3	U	16.1	N
IA-05	1603511A-05A	1603511A	1,1,1-Trichloroethane	0.32	0.32	1.8	1.8	U	16.1	N
IA-05	1603511A-05A	1603511A	Carbon Tetrachloride	0.32	0.32	2.0	2.0	U	16.1	N
IA-05	1603511A-05A	1603511A	1,2-Dichloroethane	0.32	0.32	1.3	1.3	U	16.1	N
IA-05	1603511A-05A	1603511A	Trichloroethene	0.32	0.32	1.7	1.7	U	16.1	N
IA-05	1603511A-05A	1603511A	Tetrachloroethene	0.32	0.32	2.2	2.2	U	16.1	N
IA-DUP	1603511A-06A	1603511A	Vinyl Chloride	0.032	0.032	0.081	0.081	U	3.16	N
IA-DUP	1603511A-06A	1603511A	1,1-Dichloroethene	0.032	0.032	0.12	0.12	U	3.16	N
IA-DUP	1603511A-06A	1603511A	trans-1,2-Dichloroethene	0.32	0.32	1.2	1.2	U	3.16	N
IA-DUP	1603511A-06A	1603511A	1,1-Dichloroethane	0.063	0.063	0.26	0.26	U	3.16	N
IA-DUP	1603511A-06A	1603511A	cis-1,2-Dichloroethene	0.063	0.063	0.25	0.25	U	3.16	N
IA-DUP	1603511A-06A	1603511A	1,1,1-Trichloroethane	0.063	0.063	0.34	0.34	U	3.16	N
IA-DUP	1603511A-06A	1603511A	Carbon Tetrachloride	0.11	0.063	0.69	0.40		3.16	
IA-DUP	1603511A-06A	1603511A	1,2-Dichloroethane	0.063	0.063	0.26	0.26	U	3.16	N

SAMPLE_ID	LAB_ID	SDG	ANALYTE	Validator_ Result (ppbv)	PQL (ppbv)	Validator_ Result (ug/m3)	PQL (ug/m3)	Validator_ Qualifier	Dilution	Validator_ Change
IA-DUP	1603511A-06A	1603511A	Trichloroethene	0.063	0.063	0.34	0.34	U	3.16	N
IA-DUP	1603511A-06A	1603511A	Tetrachloroethene	0.10	0.063	0.70	0.43		3.16	
OA-01	1603511A-07A	1603511A	Vinyl Chloride	0.016	0.016	0.041	0.041	U	1.60	N
OA-01	1603511A-07A	1603511A	1,1-Dichloroethene	0.016	0.016	0.063	0.063	U	1.60	N
OA-01	1603511A-07A	1603511A	trans-1,2-Dichloroethene	0.16	0.16	0.63	0.63	U	1.60	N
OA-01	1603511A-07A	1603511A	1,1-Dichloroethane	0.032	0.032	0.13	0.13	U	1.60	N
OA-01	1603511A-07A	1603511A	cis-1,2-Dichloroethene	0.032	0.032	0.13	0.13	U	1.60	N
OA-01	1603511A-07A	1603511A	1,1,1-Trichloroethane	0.032	0.032	0.17	0.17	U	1.60	N
OA-01	1603511A-07A	1603511A	Carbon Tetrachloride	0.075	0.032	0.47	0.20		1.60	
OA-01	1603511A-07A	1603511A	1,2-Dichloroethane	0.032	0.032	0.13	0.13	U	1.60	N
OA-01	1603511A-07A	1603511A	Trichloroethene	0.032	0.032	0.17	0.17	U	1.60	N
OA-01	1603511A-07A	1603511A	Tetrachloroethene	0.032	0.032	0.22	0.22	U	1.60	N
SS-01	1603511B-08A	1603511B	Vinyl Chloride	0.16	0.16	0.42	0.42	U	1.64	N
SS-01	1603511B-08A	1603511B	1,1-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-01	1603511B-08A	1603511B	trans-1,2-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-01	1603511B-08A	1603511B	1,1-Dichloroethane	0.16	0.16	0.66	0.66	U	1.64	N
SS-01	1603511B-08A	1603511B	cis-1,2-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-01	1603511B-08A	1603511B	1,1,1-Trichloroethane	0.19	0.16	1.0	0.89		1.64	
SS-01	1603511B-08A	1603511B	Carbon Tetrachloride	1.1	0.16	6.8	1.0		1.64	
SS-01	1603511B-08A	1603511B	1,2-Dichloroethane	0.16	0.16	0.66	0.66	U	1.64	N
SS-01	1603511B-08A	1603511B	Trichloroethene	2.6	0.16	14	0.88		1.64	
SS-01	1603511B-08A	1603511B	Tetrachloroethene	20	0.16	140	1.1		1.64	
SS-02	1603511B-09A	1603511B	Vinyl Chloride	0.17	0.17	0.43	0.43	U	1.68	N
SS-02	1603511B-09A	1603511B	1,1-Dichloroethene	0.17	0.17	0.67	0.67	U	1.68	N
SS-02	1603511B-09A	1603511B	trans-1,2-Dichloroethene	0.17	0.17	0.67	0.67	U	1.68	N
SS-02	1603511B-09A	1603511B	1,1-Dichloroethane	0.17	0.17	0.68	0.68	U	1.68	N
SS-02	1603511B-09A	1603511B	cis-1,2-Dichloroethene	0.17	0.17	0.67	0.67	U	1.68	N
SS-02	1603511B-09A	1603511B	1,1,1-Trichloroethane	0.17	0.17	0.92	0.92	U	1.68	N
SS-02	1603511B-09A	1603511B	Carbon Tetrachloride	4.7	0.17	29	1.0		1.68	
SS-02	1603511B-09A	1603511B	1,2-Dichloroethane	0.17	0.17	0.68	0.68	U	1.68	N
SS-02	1603511B-09A	1603511B	Trichloroethene	0.17	0.17	0.90	0.90	U	1.68	N
SS-02	1603511B-09A	1603511B	Tetrachloroethene	0.66	0.17	4.5	1.1		1.68	
SS-03	1603511B-10A	1603511B	Vinyl Chloride	0.16	0.16	0.40	0.40	U	1.57	N
SS-03	1603511B-10A	1603511B	1,1-Dichloroethene	0.16	0.16	0.62	0.62	U	1.57	N
SS-03	1603511B-10A	1603511B	trans-1,2-Dichloroethene	0.16	0.16	0.62	0.62	U	1.57	N
SS-03	1603511B-10A	1603511B	1,1-Dichloroethane	0.16	0.16	0.64	0.64	U	1.57	N
SS-03	1603511B-10A	1603511B	cis-1,2-Dichloroethene	0.16	0.16	0.62	0.62	U	1.57	N
SS-03	1603511B-10A	1603511B	1,1,1-Trichloroethane	0.16	0.16	0.86	0.86	U	1.57	N
SS-03	1603511B-10A	1603511B	Carbon Tetrachloride	1.0	0.16	6.3	0.99		1.57	
SS-03	1603511B-10A	1603511B	1,2-Dichloroethane	0.16	0.16	0.64	0.64	U	1.57	N
SS-03	1603511B-10A	1603511B	Trichloroethene	0.21	0.16	1.1	0.84		1.57	
SS-03	1603511B-10A	1603511B	Tetrachloroethene	1.2	0.16	8.1	1.1		1.57	
SS-04	1603511B-11A	1603511B	Vinyl Chloride	0.16	0.16	0.42	0.42	U	1.64	N
SS-04	1603511B-11A	1603511B	1,1-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-04	1603511B-11A	1603511B	trans-1,2-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-04	1603511B-11A	1603511B	1,1-Dichloroethane	0.16	0.16	0.66	0.66	U	1.64	N
SS-04	1603511B-11A	1603511B	cis-1,2-Dichloroethene	0.16	0.16	0.65	0.65	U	1.64	N
SS-04	1603511B-11A	1603511B	1,1,1-Trichloroethane	0.16	0.16	0.89	0.89	U	1.64	N
SS-04	1603511B-11A	1603511B	Carbon Tetrachloride	5.0	0.16	31	1.0		1.64	
SS-04	1603511B-11A	1603511B	1,2-Dichloroethane	0.16	0.16	0.66	0.66	U	1.64	N
SS-04	1603511B-11A	1603511B	Trichloroethene	0.16	0.16	0.88	0.88	U	1.64	N
SS-04	1603511B-11A	1603511B	Tetrachloroethene	1.3	0.16	8.5	1.1		1.64	
SS-05	1603511B-12A	1603511B	Vinyl Chloride	0.16	0.16	0.41	0.41	U	1.61	N
SS-05	1603511B-12A	1603511B	1,1-Dichloroethene	0.28	0.16	1.1	0.64		1.61	
SS-05	1603511B-12A	1603511B	trans-1,2-Dichloroethene	0.16	0.16	0.64	0.64	U	1.61	N
SS-05	1603511B-12A	1603511B	1,1-Dichloroethane	33	0.16	140	0.65		1.61	
SS-05	1603511B-12A	1603511B	cis-1,2-Dichloroethene	0.16	0.16	0.64	0.64	U	1.61	N
SS-05	1603511B-12A	1603511B	1,1,1-Trichloroethane	2.5	0.16	14	0.88		1.61	

SAMPLE_ID	LAB_ID	SDG	ANALYTE	Validator_ Result (ppbv)	PQL (ppbv)	Validator_ Result (ug/m3)	PQL (ug/m3)	Validator_ Qualifier	Dilution	Validator_ Change
SS-05	1603511B-12A	1603511B	Carbon Tetrachloride	1.1	0.16	7.1	1.0		1.61	
SS-05	1603511B-12A	1603511B	1,2-Dichloroethane	0.16	0.16	0.65	0.65	U	1.61	N
SS-05	1603511B-12A	1603511B	Trichloroethene	2.8	0.16	15	0.86		1.61	
SS-05	1603511B-12A	1603511B	Tetrachloroethene	23	0.16	160	1.1		1.61	
SS-DUP	1603511B-13A	1603511B	Vinyl Chloride	0.15	0.15	0.39	0.39	U	1.54	N
SS-DUP	1603511B-13A	1603511B	1,1-Dichloroethene	0.27	0.15	1.1	0.61		1.54	
SS-DUP	1603511B-13A	1603511B	trans-1,2-Dichloroethene	0.15	0.15	0.61	0.61	U	1.54	N
SS-DUP	1603511B-13A	1603511B	1,1-Dichloroethane	36	0.15	140	0.62		1.54	
SS-DUP	1603511B-13A	1603511B	cis-1,2-Dichloroethene	0.15	0.15	0.61	0.61	U	1.54	N
SS-DUP	1603511B-13A	1603511B	1,1,1-Trichloroethane	2.6	0.15	14	0.84		1.54	
SS-DUP	1603511B-13A	1603511B	Carbon Tetrachloride	1.2	0.15	7.4	0.97		1.54	
SS-DUP	1603511B-13A	1603511B	1,2-Dichloroethane	0.15	0.15	0.62	0.62	U	1.54	N
SS-DUP	1603511B-13A	1603511B	Trichloroethene	2.8	0.15	15	0.83		1.54	
SS-DUP	1603511B-13A	1603511B	Tetrachloroethene	23	0.15	150	1.0		1.54	

ATTACHMENT B

SPREADSHEET SUMMARY
(Submitted electronically)
SDG Nos. 1603511A & 1603511B
Selected Compounds in Air Samples