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June 28, 2019

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Subject: Carrier Corporation, Thompson Road Facility, Syracuse, New York
Corrective Action Order — Index CO 7-20051118-4
Site Registry No.: 734043
Vapor Intrusion Investigation Report

Dear Mr. Warner:

On behalf of Carrier Corporation, AECOM Technical Services, Inc. is hereby submitting the attached Vapor Intrusion Investigation Report for the investigation work performed during the 2019 heating season. This report is being submitted for New York State Department of Environmental Conservations (NYSDEC) and New York State Department of Health (NYSDOH) review.

Please call if you have any questions.

Sincerely,



Peter Hollatz
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John Wolski, UTC
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FINAL VAPOR INTRUSION INVESTIGATION REPORT

Carrier Corporation Site
Thompson Road, Syracuse, NY

Corrective Action Order – Index CO 7-20051118-4
NYSDEC Site Registry #734043

Project number: 60594804

June 2019

Prepared for:
Carrier Corporation

Prepared by:

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Table of Contents

1. Introduction 1-1
2. Vapor Intrusion Investigation Activities 2-1
2.1 Sample Locations 2-2
2.2 Drawing Review and Geophysical Surveys 2-2
2.3 Sample Collection and Analyses 2-2
2.4 Product Inventories 2-4
2.5 Investigation Observations 2-4
2.6 Deviations from the Approved Work Plan 2-4
3. Analytical Results 3-1
3.1 Data Validation 3-1
3.2 Criteria 3-1
3.3 Review of Analytical Results 3-2
3.3.1 TR-4 Analytical Results 3-2
3.3.2 TR-7/7A Analytical Results 3-3
3.3.3 TR-8 Analytical Results 3-3
3.3.4 TR-19 Analytical Results 3-3
3.3.5 TR-20 Analytical Results 3-4
4. Evaluation of Findings 4-1
4.1 TR-4 Evaluation of Findings 4-1
4.2 TR-7/7A Evaluation of Findings 4-1
4.3 TR-8 Evaluation of Findings 4-2
4.4 TR-19 Evaluation of Findings 4-3
4.5 TR-20 Evaluation of Findings 4-4
5. SSD System Pilot Testing 5-1
6. Conclusions and Recommendations 6-1
7. References 7-1

Tables

Table 1 VI Sampling Results
Table 2 Attenuation Factors Calculations
Table 3 Risk Calculations
Table 4 Compliance Summary by Building

Figures

Figure 1 Sample Location Map
Figure 2 TR-4 - Analytical Results
Figure 3 TR-7/7A - Analytical Results
Figure 4 TR-8 - Analytical Results
Figure 4A TR-8 (Second Floor) - Analytical Results
Figure 5 TR-19 - Analytical Results
Figure 6 TR-20 - Analytical Results

Appendices

Appendix A Sample Collection Forms
Appendix B Photo Log
Appendix C Product Inventory Forms
Appendix D Data Usability Summary Reports
Appendix E SSD System Pilot Testing

1. Introduction

Carrier Corporation (Carrier) is performing environmental remediation activities at the Thompson Road Facility (Site) in Syracuse, Onondaga County, New York. AECOM Technical Services, Inc. (AECOM) has been retained by Carrier to provide environmental engineering and investigation support services associated with addressing potential vapor intrusion (VI) at the Site. The work is being performed in accordance with the Corrective Action Order on Consent (CO) dated January 4, 2006.

The Vapor Intrusion Investigation Work Plan (VI Work Plan - AECOM October 2017) was prepared to evaluate indoor air and sub-slab soil gas conditions at 12 buildings at the Site. The VI Work Plan was approved by the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) in October 2017. The first rounds of VI investigation work was implemented in November/December 2017 and February/March 2018, and was reported in the AECOM June 2018 Vapor Intrusion Investigation Report (2018 VI Report). AECOM's recommendations in the 2018 VI Report have been completed along with the additional investigation activities requested by NYSDEC in a letter dated July 26, 2018.

AECOM's recommendations are summarized below:

1. As an Interim Corrective Measure (ICM), seal identified floor vaults in Building TR-8. This work was completed in August 2018 and presented to NYSDEC in the Construction Completion Report (CCR) (AECOM January 2019).
2. Restrict access to the crawl space in building TR-4. Carrier Environmental Health and Safety department restricts access to the crawl space.
3. Collect additional sub-slab samples in Building TR-20 in the immediate vicinity of SSV-3 to further delineate detected sub-slab vapors and potentially install a targeted sub-slab depressurization (SSD) system in this area. As a first step, additional sub-slab samples without paired indoor air samples were collected during implementation of a SSD system pilot test in October 2018. Three new paired indoor air and soil gas sample locations were collected as part of this VI sampling round (January 2019).
4. An SSD system pilot test was recommended for the Storm Water Treatment Plant (SWTP) which was conducted in October 2018.
5. An additional round of VI sampling was recommended during the 2018/2019 winter season at the following locations in Buildings TR-4, TR-7 and TR-8: TR-4-IA/SSV-3, TR-7-IA/SSV-3, and TR-8 (all locations). This sampling was conducted in January 2019. Upon review of the sampling results in TR-8, three additional locations (indoor air) on the second floor of the building were sampled on May 1, 2019.

NYSDEC also requested additional investigation activities in their July 2018 letter. The additional items were as follows:

1. An additional round of VI sampling during the 2018/2019 winter season at the following locations in Building TR-19: TR-19-IA-2, TR-19-IA-4, and TR-19-IA-6. (Note that NYSDEC requested just indoor air samples, but Carrier elected to collect sub-slab soil gas samples at the indoor air locations, as well.) This sampling was conducted in January 2019.

This document presents the procedures and findings of the 2019 VI investigation and the SSD system pilot testing results.

2. Vapor Intrusion Investigation Activities

One round of VI investigation was performed in 2019 accordance with the approved VI Work Plan, which included a subset of Site buildings sampled in 2017/2018 with added samples as recommended for Building TR-20. The 2019 round began on January 14, 2019 and was completed on January 18, 2019. The field work was performed by two AECOM scientists experienced in VI investigations.

During sampling, AECOM coordinated with facility staff to arrange for exterior doors located within close proximity of sampling points to remain closed during sampling to the extent practicable without disrupting facility operations. Also, AECOM coordinated with facility staff to arrange for interior doors located within close proximity of sampling points to remain open during sampling to the extent practicable without disrupting facility operations.

Field investigation activities included:

- Reviewing facility drawings with facility management
- Visually inspecting proposed sampling locations
- Performing geophysical surveys to identify and locate subsurface structures and utilities
- Drilling through building floor slabs for sub-slab soil gas sampling
- Confirming the sub-slab sample points were sealed
- Collecting sub-slab soil gas, indoor air, and outdoor air samples
- Periodically monitoring sample canisters for vacuum pressure
- Inspecting sample locations for physical conditions (e.g., foundation cracks) and potential non-VI sources
- Conducting product inventories
- Recovering samples
- Delivering samples to the laboratory courier
- Patching sub-slab sample locations

Field activities were recorded in a field logbook and on sample collection forms (**Appendix A**).

2.1 Sample Locations

The investigation consisted of the collection of indoor air, sub-slab, outdoor air, and associated quality assurance/quality control (QA/QC) samples. Sample collection locations are show in **Figures 1** through **6**.

The following buildings were sampled during the VI investigation:

TR-4 (1 location)
TR-7 (1 location)
TR-8 (3 locations on the ground floor and 3 new locations on the second floor)
TR-19 (3 locations)
TR-20 (3 new locations)

A total of 14 indoor air, 11 sub-slab soil gas, and 4 outdoor air samples were collected during the sampling round (plus 3 indoor air and 2 sub-slab soil gas duplicate samples).

2.2 Drawing Review and Geophysical Surveys

Facility drawings were reviewed for subsurface structures and utilities at the proposed sub-slab soil gas sampling locations. In general, the drawings were legible and appeared to accurately identify subsurface conditions.

Following drawing review, AECOM retained Ground Penetrating Radar Services (GPRS) for perform a geophysical survey at the proposed sub-slab sampling locations. GPRS used a 1600 MHz ground penetrating radar (GPR) antenna and a RD 7000/8000 Radio Frequency detector. The survey was performed on January 14, 2019. Proposed sampling locations were adjusted based on the findings of the GPR survey. The actual locations are shown in the sample locations figures.

2.3 Sample Collection and Analyses

The samples were collected in stainless-steel Summa® canisters. Each canister was evacuated to approximately -30 inches mercury (in Hg) and the regulator set for an 8-hour duration by the subcontract laboratory.

Consistent with NYSDOH's Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH 2006 and May 2017 addendum), the VI investigation focused on the eight chlorinated VOCs, which are assigned to three decision matrices:

Matrix A

Trichloroethene (TCE)
Carbon tetrachloride (CCL4)
1,1-Dichloroethene (1,1-DCE)
cis-1,2-Dichloroethene (cis-1,2-DCE)

Matrix B

Tetrachloroethene (PCE)
1,1,1-Trichloroethane (1,1,1-TCA)
Methylene chloride (MC)

Matrix C

Vinyl chloride (VC)

As requested by NYSDEC, the investigation also included Benzene, Toluene, Ethylbenzene, and m-, p-, and o-Xylene.

At each sub-slab sample location, an electric hammer drill was used to advance a 5/8-inch diameter hole through the concrete slab into the underlying fill. All concrete debris was removed using a hand brush to prevent it from entering the hole. The sub-slab soil gas samples were collected through a ⅛-inch inside diameter by ¼-inch outside diameter Teflon-lined polyethylene tubing which was inserted through the holes in the slabs. The tubing was sealed to the concrete slabs with modeling clay.

A helium tracer gas was utilized to evaluate whether indoor (ambient) air was short circuiting into the sample collection tubing. To perform the test, an enclosure, approximately 1 liter in size, was placed over the sealed sub-slab sample location. The sample tubing was run through a hole in the enclosure and a silicone gasket was used to seal the interface between the tubing and the enclosure. The enclosure was then sealed at the ground surface with a foam gasket. A tank containing ultra-high purity helium (99.999 percent [%]) was connected to the side port of the enclosure and enough helium was released to displace any ambient air and to maintain a positive pressure within the enclosure. Following the application of the tracer gas, 1 liter of soil vapor was purged using a Gillian GilAir-3 air sample pump at a rate of approximately 0.2 liters per minute (L/min) into a 1-liter Tedlar bag. Consistent with the previous two sampling rounds, the flow rate limit of 0.2 L/min was maintained.

The contents of the Tedlar bag were analyzed outside the building for helium using a Radiodetection/Dielectric MGD-2002 Multi-gas Detector, for VOCs with a photoionization detector (PID), and methane/oxygen/carbon dioxide/hydrogen sulfide with a GEM 2000 landfill gas monitor. Any remaining contents of the Tedlar bag containing the sub-slab purged vapor were subsequently discharged to outdoor air. If the helium concentration was less than 10%, the tracer test passed. If the concentration of helium exceeded 10%, the clay seal between the sample tubing and the concrete slab was redone and the seal was retested. The enclosure was then removed and the tubing was connected to the Summa® canister via the flow controller and sampling commenced.

The samples were collected using 6-liter Summa® canisters equipped with quick-connect flow controllers pre-calibrated at the laboratory. Prior to connecting the quick-connect flow controller, the initial vacuum pressure was read from laboratory supplied gauge. After connecting the flow controller to the canister, the built-in gauge on the flow controller was also recorded. After the sampling period, the canister vacuum was recorded and the quick-connect flow controller was removed. The final vacuum pressure was read from laboratory supplied gauge. The tubing was removed and the sub-slab sample point was then filled to grade with hydraulic cement.

The sample canisters were shipped under chain-of-custody to Eurofins Air Toxics, Inc. (Folsom, CA) for analysis of the target parameters following USEPA Method TO-15 for the January 2019 sampling and to Pace Analytical (Mt. Juliet, TN) for the May 2019 sampling. QA/QC samples consisted of duplicate samples collected from the same location as the primary sample. In accordance with the VI Work Plan, the duplicate

samples were collected using a tee fitting which allowed the duplicate and primary sample to be collected from the same sample port. QA/QC samples were collected at a frequency of one for every 10 samples. Photographs taken of the sampling points during testing are provided in **Appendix B**.

2.4 Product Inventories

The inventories documented materials stored in the vicinity of the sample locations so that possible non-VI sources could be identified. Completed product inventory forms are provided in **Appendix C**.

2.5 Investigation Observations

Potential Sources/Interferences

Vehicles with internal combustion engines were observed to be periodically parked in a garage at the western end of TR-7. A greaseless lubricant with petroleum distillates was present in the kitchenette in TR-7.

A used oil drum storage area was observed at the south end of Building TR-8.

Vehicles with internal combustion engines were observed to be periodically used within buildings TR-19 and TR-20 (gasoline powered vehicles are shown in the photograph log in **Appendix B**).

2.6 Deviations from the Approved Work Plan

For each building, samples collected from the sub-slab, indoor air, and outdoor air locations simultaneously over an 8-hour period. There were no deviations from the VI Work Plan.

3. Analytical Results

3.1 Data Validation

Upon receipt from the laboratory, the analytical results were validated by an AECOM chemist following NYSDEC DER-10 and USEPA Region II data validation procedures. The validated data is provided in a data usability summary report (DUSR).

The DUSR presents details pertaining to items such as surrogate sample recoveries, matrix spike recoveries, duplicate sample analyses, instrument calibration and performance and method blank sample analyses. The report presents copies of the laboratory reporting forms with hand written qualifications made by the data reviewer. The data presented in the summary tables included in this report reflect these qualifications. A copy of the DUSR narrative is provided in **Appendix D**.

3.2 Criteria

Validated laboratory analytical results are presented in **Table 1** and **Figures 1** through **6**. As an initial data screen, the analytical results were compared to the NYSDOH Matrices A, B, and C, presented in the May 2017 update to the *Final Soil Vapor Intrusion Guidance*, October 2006. The decision matrices provide guidelines to be used as a tool in the decision-making process for determining whether no remedial action is required, additional monitoring is needed, or if mitigation is necessary. The matrices are applicable to continuous exposure scenarios. The indoor air values in these matrices are more conservative than those applicable for occupants of typical occupational scenarios in industrial settings. For continuous exposure scenarios, occupants are assumed to be present 24 hours per day, seven days per week (168 hours a week). For occupational scenarios, such as the buildings in this study, occupants are present 8 hours a day, five days a week (40 hours per week). Overall, the difference between the two scenarios is that the continuous exposure is greater by a factor of more than four times.

Also the decision matrixes use a single set of values for multiple chemicals, which may have different toxicities. For example, the matrix used for TCE also is used for cis-1,2-DCE, 1,1-DCE and CCL4. Some of these compounds are considered to be carcinogens and some are not. For non-cancer hazard, their toxicity values may vary by a factor of 100. Using a common decision matrix for these chemicals adds an additional level of conservatism in some cases.

The sub-slab soil gas values in these matrices are more conservative for large buildings where subsurface contaminants are not homogenously distributed. A “hot spot” may not be representative of average conditions beneath a large slab. The large, industrial buildings also differ from residential buildings in having thicker, more intact slabs which would result in lower rates of vapor intrusion and greater attenuation. Large industrial buildings tend to have higher ceilings than residential homes, which also serves to reduce concentrations of contaminants in indoor air. These buildings also have higher ventilation rates, which serves to reduce the indoor air concentrations for a given rate of

vapor intrusion. Also, industrial buildings typically are slab-on-grade construction, so there's less surface area in contact with soil (per unit volume) compared to a residential building with a basement. For the above reasons, the decision matrices were employed as an initial screening tool, but additional data evaluation criteria were applied, as described below.

The indoor air results were initially compared with NYSDOH Air Guideline Values presented in Table 3.1 of the *Final Soil Vapor Intrusion Guidance*, October 2006 and subsequently modified in the September 2013 and August 2015 updates. Direct application of the NYSDOH Air Guideline Values with regard to triggering mitigation activities; however, is not directly applicable for the conservative exposure biases described above (e.g., the values are being based on the assumption that occupants are continuously exposed to a contaminant in air 24 hours a day and seven days a week for a lifetime which is not the case for this industrial setting).

The next level of data evaluation conducted involved performing risk analysis following standard practices for evaluating the VI pathway by comparing the detected concentrations to USEPA Regional Screening Levels (RSLs) for industrial air (i.e., see Office of Solid Waste and Emergency Response [OSWER] June 2015 *Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air)*. The risk management calculations were evaluated against the following criteria:

1. The cancer risk range of 10E-6 to 10E-4 as a "target range" within which to manage human health risk as part of site cleanup.
2. Non-cancer target hazard quotient (HQ) or hazard index (HI) to not exceed 1.

3.3 Review of Analytical Results

The results for each building are briefly discussed below. The results are compared to the NYSDOH decision matrices (Soil Vapor/Indoor Air Matrix A, B or C), NYSDOH Air Guideline Values, and USEPA RSLs for commercial properties.

3.3.1 TR-4 Analytical Results

One sub-slab and indoor air sample pair was collected. The concentration of TCE in the sub-slab soil vapor at TR4-SSV-3 (crawl space) and indoor air sample TR4-IA-3 resulted in a preliminary recommendation of "Monitor" for the cafeteria area in the eastern portion of the building when evaluated according to the NYSDOH decision matrix.

No compounds were detected in the indoor air samples at concentrations exceeding their respective NYSDOH Air Guideline Values or USEPA RSLs for commercial properties.

3.3.2 TR-7/7A Analytical Results

One sub-slab and indoor air sample pair was collected. The concentrations of TCE in the sub-slab soil vapor and indoor air sample pair TR7-SSV-3/TR7-IA-3 resulted in a preliminary recommendation of "Mitigate".

Benzene was detected at concentration exceeding its USEPA RSL for commercial properties in the indoor air sample (2.5 micrograms per cubic meter [µg/m^3]). However, vehicles with internal combustion engines were observed to be periodically parked in a garage at the western end of the building and a greaseless lubricant with petroleum distillates was present in the kitchenette which may both contribute to the petroleum hydrocarbons detected in the indoor air. It also is recognized that benzene typically is found in both outdoor air in urban areas (and in indoor air) at concentrations above the RSL.

3.3.3 TR-8 Analytical Results

Three sub-slab and indoor air sample pairs were collected on the first floor. The concentrations of TCE in the sub-slab soil vapor samples and indoor air resulted in a preliminary recommendation of "Mitigate" in all three locations when evaluated according to the NYSDOH decision matrix. The concentrations of cis-1,2-DCE resulted in a preliminary recommendation of "Mitigate" at locations TR8-SSV-1 and TR8-SSV-2.

Upon review of the sub-slab and indoor air sample pairs collected in January 2019, three indoor air samples were collected on the second floor in May 2019. The concentrations of TCE in the indoor air resulted in a preliminary recommendation of "Mitigate" in two of the three locations when evaluated according to the NYSDOH decision matrix.

TCE was present in all three indoor air samples on the first floor and two of the three samples on the second floor at concentrations exceeding the NYSDOH Air Guideline Value of 2.0 µg/m^3 and the EPA screening level (for commercial properties) of 3.0 µg/m^3 at TR8-IA-1, TR8-IA-2, and TR8-IA-4. Benzene was detected at concentration exceeding its USEPA RSL for commercial properties in indoor air sample TR8-IA-3 (1.9 µg/m^3). However, used oil drum was present at the south end of the building may contribute to the petroleum hydrocarbons detected in the indoor air.

3.3.4 TR-19 Analytical Results

Three sub-slab and indoor air pairs were sampled. The concentrations of TCE and cis-1,2-DCE in the sub-slab soil vapor sample TR19-SSV-4 resulted in a preliminary recommendation of "Mitigate" when evaluated according to the NYSDOH decision matrices. No compounds were detected in the indoor air samples at concentrations exceeding their respective NYSDOH Air Guideline Values. Benzene was present at concentrations exceeding the USEPA RSLs for commercial properties at locations TR19-IA-2 and TR19-IA-4. However, internal combustion engines were observed to be periodically used/stored within the building and are an indoor emission source of benzene.

3.3.5 TR-20 Analytical Results

Three new sub-slab and indoor air pairs were sampled in Building TR-20 (Note: additional sub-slab soil gas samples were collected as part of the SSD system pilot testing which are presented in **Appendix F**). No compounds were detected in the indoor air samples at concentrations exceeding their respective NYSDOH Air Guideline Values. Benzene was present at a concentration exceeding the USEPA RSL for commercial properties at location TR20-IA-9. However, internal combustion engines were observed to be periodically used/stored within the building and are an indoor emission source of benzene.

4. Evaluation of Findings

The sampling conducted during the January 2019 VI investigation activity occurred during the winter heating season and is intended to represent worst-case seasonal conditions. The following presents an evaluation of the investigation findings for each building. As discussed below, the principal chemical of concern was TCE.

4.1 TR-4 Evaluation of Findings

One sub-slab sample (location SSV-3) was analyzed, with TCE detected at a concentration of 24.0 µg/m^3. The concentration was similar to the sample collected at this location in March 2018 (25.6 µg/m^3). A potential breakdown product, cis-1,2-DCE, was detected at the location, which was a crawl space sample. The detection of cis-1,2-DCE was 12 µg/m^3 which was similar to the previous detections (11.7 and 6.8 µg/m^3 for the December 2018 and March 2018 rounds, respectively).

One indoor air sample (location IA-3) was analyzed, with TCE detected at a concentration of 0.28 µg/m^3. The concentration was significantly lower than in March 2018 (1.78 µg/m^3). The potential breakdown product cis-1,2-DCE was also detected at location IA-3 (0.15 µg/m^3).

Based on these results, the calculated attenuation factor (AF) for TCE for building TR-4 was 1.2E-02. This value does not account for the contribution from outdoor air.

No compounds were detected in the indoor air sample at concentrations exceeding their respective USEPA RSLs for commercial properties. The calculated risk level for TCE was at least an order of magnitude below the excess lifetime cancer risk of one-in-one-million (1E-06) and below a non-cancer HQ of 1 in the indoor air sample. The concentration of 0.28 µg/m^3 is associated with an excess lifetime cancer risk of 9.3E-08 and a non-cancer HQ of 0.03. The chlorinated VOC HI was also below 1 in the indoor air sample (i.e., sum of non-cancer risks for all chlorinated VOCs was acceptable).

The sub-slab TCE concentration resulted in a preliminary recommendation of “Monitor” when evaluated according to the NYSDOH decision matrix. However, based on the estimated building-specific AF, an exceedance of acceptable risk levels in indoor air would not be expected if the TCE sub-slab concentrations remain at or below 250 µg/m^3 (i.e., 3 µg/m^3 divided by the building-specific AF of 1.2E-02).

The Site specific AFs and maximum/average concentrations are summarized in **Table 2**. The risk calculations are included in **Table 3**.

4.2 TR-7/7A Evaluation of Findings

One sub-slab sample (location SSV-3) was analyzed, with TCE detected at a concentration of 80 µg/m^3, which was higher than the concentration at this location in March 2018 (13.11 µg/m^3).

One indoor air sample (location IA-3) was analyzed, with TCE detected at a concentration of 1.1 µg/m^3. The concentration was lower than in March 2018 (2.53 µg/m^3). The potential breakdown product cis-1,2-DCE was also detected at IA-3 (0.16 µg/m^3).

Certain petroleum hydrocarbons were also detected, notably benzene, but vehicles with internal combustion engines were observed to be periodically parked in a garage at the western end of the building and greaseless lubricant with petroleum distillates was present in the kitchenette which was in the vicinity. The presence of the greaseless lubricant with petroleum distillates suggests that exposure to petroleum distillates is an industrial hygiene issue and occupational exposure limits apply.

Based on these results, the calculated AF for TCE for building TR-7 was 1.4E-02.

TCE was not detected in the indoor air sample at a concentration exceeding the USEPA RSL for commercial properties. The calculated risk level for TCE was at or below the excess lifetime cancer risk of 1E-06 and below a non-cancer HQ of 1 in the indoor air sample. The concentration of 1.1 µg/m^3 has a cancer risk of 3.7E-07 and a non-cancer HQ of 0.13. The chlorinated VOC HI was also below 1 in the indoor air sample.

The sub-slab TCE concentration resulted in a preliminary recommendation of “Mitigate” when evaluated according to the NYSDOH decision matrix. However, based on the estimated building-specific AF, an exceedance of acceptable risk levels in indoor air would not be expected if the TCE sub-slab concentrations remain at or below 214 µg/m^3 (i.e., 3 µg/m^3 divided by the building-specific AF of 1.4E-02).

The Site specific AFs and maximum/average concentrations are summarized in **Table 2**. The risk calculations are included in **Table 3**.

4.3 TR-8 Evaluation of Findings

Additional operational and functional information was compiled as part of the ICM conducted for Building TR-8. The building is used for records retention and there are no full-time occupants on the ground floor level of this building, and two workers on the second floor that at times go to the ground floor level to move storage boxes in or out and/or label items. Based on the building survey, this level of the building is believed to have relatively little air turnover.

As a result of elevated indoor air sample results in TR-8 from the March 2018 event, additional inspection of the concrete floor and valve vaults was completed. Elevated PID readings were observed and in one valve vault two penetrations through the base of the vault were observed. As a temporary measure, the valve vault lids that were accessible were sealed off with tape. The ICM resulted in permanent sealing of the vaults, which was completed (August 2018) and presented to NYSDEC in the CCR (AECOM January 2019).

During the 2019 sampling event, three sub-slab samples were analyzed. The maximum TCE concentration was 470 µg/m^3. A potential breakdown product cis-1,2-DCE was also detected.

Three indoor air samples were analyzed in January 2019. TCE was detected at an average concentration of 3.30 µg/m^3 and a maximum concentration of 4.30 µg/m^3. The average TCE concentration was approximately half the concentration detected during March 2018 sampling event (5.90 µg/m^3). A potential breakdown product cis-1,2-DCE also was detected in indoor air at maximum concentration of 1.2 µg/m^3.

Three indoor air samples from the second floor of the building were analyzed in May 2019. TCE was detected at an average concentration of 2.69 µg/m^3 and a maximum concentration of 3.94 µg/m^3.

Although limited in number, certain petroleum hydrocarbons have historically been detected in the indoor air samples (notably benzene), but used oil drums were stored and used in the vicinity. The presence of the used oil drums, suggests that exposure to petroleum constituents is an industrial hygiene issue and occupational exposure limits apply.

Based on these results, the calculated AF for TCE and cis-1,2-DCE for building TR-8 was 9.1E-03 and 1.5E-02, respectively. These values do not account for the contribution from outdoor air.

TCE was detected above the USEPA RSL for commercial properties of 3 µg/m^3 at three of the six sample locations.

As a result of the elevated indoor air samples results in TR-8, an evaluation of the building HVAC system will be completed.

Various sub-slab TCE and cis-1,2-DCE concentrations resulted in a preliminary recommendation of “Mitigate” when evaluated according to the NYSDOH decision matrix. For this building, the combination of sub-slab concentrations and the building-specific AF appear to be contributing to the exceedances of USEPA RSL for commercial properties for TCE in the indoor air samples.

The Site specific AFs and maximum/average concentrations are summarized in **Table 2**. The risk calculations are included in **Table 3**.

4.4 TR-19 Evaluation of Findings

Three sub-slab samples were analyzed. The maximum TCE concentration was 110 µg/m^3. A potential breakdown product cis-1,2-DCE was also detected.

Certain petroleum hydrocarbons were also detected, notably benzene, but internal combustion engines are stored and used in the vicinity. The presence of the internal combustion engines suggests that exposure to gasoline constituents is an industrial hygiene issue and occupational exposure limits apply.

Three indoor air samples were analyzed. TCE was detected an average concentration of 0.05 µg/m^3 and a maximum concentration of 0.08 µg/m^3.

Based on these results, the calculated AF for TCE for building TR-19 was 1.5E-03.

No compounds were detected in the indoor air samples at concentrations exceeding their respective USEPA RSLs for commercial properties. The calculated risk level for TCE was at least an order of magnitude below the excess lifetime cancer risk of 1E-06 and well below a non-cancer HQ of 1 in every indoor air sample. The maximum concentration of 0.08 µg/m^3 is associated with an excess lifetime cancer risk of 2.7E-08 and a non-cancer HQ of 0.009. The chlorinated VOC HI was also below 1 in every indoor air sample.

Various sub-slab TCE and cis-1,2-DCE concentrations resulted in a preliminary recommendation of "Mitigate" when evaluated according to the NYSDOH decision matrix. However, for this building an exceedance of acceptable risk levels would not be expected given the very low indoor air concentrations measured, especially during the most recent sampling event.

The Site specific AFs and maximum/average concentrations are summarized in **Table 2**. The risk calculations are included in **Table 3**.

4.5 TR-20 Evaluation of Findings

As discussed above, three new paired sample locations were sampled in building TR-20 in 2019. Samples pairs for indoor air and sub-slab soil gas were collected at locations in the vicinity of SSV-3 to further delineate TCE concentrations in sub-slab soil gas detected previously during the 2017/2018 sampling event. (Note: additional sub-slab soil gas samples were collected as part of the SSD system pilot testing which are presented in **Appendix F**.) TCE was detected with an average concentration of 0.36 µg/m^3 in the sub-slab soil gas (which was significantly lower than in previous sampling in the area around SSV-3. This data, along with the previous sample data indicates that sub-slab TCE concentrations are adequately delineated in the vicinity of SSV-3.

TCE was not detected in the indoor air samples at concentrations exceeding the USEPA RSL for commercial properties. The calculated risk level for TCE was at least an order of magnitude below the excess lifetime cancer risk of 1E-06 and well below a non-cancer HQ of 1 in every indoor air sample. The maximum concentration of 0.071 µg/m^3 is associated with an excess lifetime cancer of 2.4E-08 and a non-cancer HQ of 0.0081. The chlorinated VOC HI was also below 1 in every indoor air sample.

Certain petroleum hydrocarbons were also detected, notably benzene, but internal combustion engines are stored and used in the vicinity. The presence of the internal combustion engines suggests that exposure to gasoline constituents is an industrial hygiene issue and occupational exposure limits apply. As previously noted, benzene typically is found in both outdoor air in urban areas (and in indoor air) at concentrations above the RSL.

The risk calculations are included in **Table 3**.

5. SSD System Pilot Testing

As recommended in the 2018 VI report, SSD system pilot testing was conducted at building TR-20 (area around SSV-3) and the SWTP. The pilot testing was completed in October 2018. A detailed summary of the testing is provided in the *Final Design Basis Memorandum* provided in **Appendix F**.

The intent of an SSD is to establish negative pressure beneath a building concrete slab to create an engineered control to mitigate the potential migration of soil gas into the interior of the building. Typically, an SSD system consists of extraction points (i.e., strategically placed piping penetrations through the concrete slab), radially-spaced vapor monitoring points (VMPs) located around the extraction points, and vapor conveyance piping mounted aboveground from the extraction points to a centrally-located vapor extraction blower/fan or a network of extraction blowers/fans. Determination of the optimum number and placement of extraction points is facilitated by the data obtained from the SSD system pilot test.

The purpose of the SSD system pilot test is to gather performance data to assist with the design of a system. The overall approach of the pilot test is to extract air from the subsurface at an extraction point, measure the resulting airflow rates and applied vacuums at the extraction point, measure the pressures at radially-spaced VMPs, and monitor extracted air for concentrations of VOCs during the testing. A PID is used to screen for VOCs. Specific design data obtained during pilot testing include the following:

- Air flow extraction rate and applied vacuum at the extraction point;
- VOC concentrations in the extracted air at the extraction point; and
- Subsurface pressure/vacuum measurements at the VMPs and estimates of associated zone of influence.

In addition to the field measurements discussed above, sub-slab soil gas samples were collected at the test points.

The pilot testing was successful in providing sufficient data to determine the final system design minimum criteria, which are as follows:

TR-20 (limited area around SSV-3)

1. Extraction point minimum vacuum of 30 inches of water column (in. wc) at a minimum flowrate of 10 standard cubic feet per minute (scfm).

2. VOC concentrations in the extracted air less than 0.0001 pounds per hour (lbs/hr).

3. Achieve a minimum vacuum radius of influence of 75 feet.

SWTP

1. Extraction point minimum vacuum of 5 in. wc with an minimum flowrate of 150 scfm.

2. VOC concentrations in the extracted air less than 0.008 lbs/hr.

3. Due to the radius of influence interference caused by the grade beams and three lower levels in the building, at a minimum, 6 strategically located extraction points will be required.

6. Conclusions and Recommendations

The 2019 VI investigation activities were completed consistent with the NYSDEC approved VI Work Plan and subsequent comments. The current and future property use is to remain industrial use. One round of testing was performed (January 2019 - subset of Site buildings and sample locations) during the winter heating season (defined as October 1 through March 31) which represent worst case VI conditions. In May 2019, indoor air samples on the second floor of TR-8 were also collected. This round of testing was in addition to the first two rounds (November/December 2017 and February/March 2018). During the 2019 testing, sub-slab soil gas samples, indoor air samples, and outdoor air samples were collected.

The sample results were compared to the NYDOH guidance matrices and Air Guideline Values as part of the initial screening decision making tool but not directly applied given the underlying basis that the guidance matrices and Air Guideline Values are based on a continuous exposure scenario. The next level of data evaluation involved performing risk calculations following standard practices for evaluating this pathway (e.g., see OSWER June 2015 *Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air)*. The risk assessment evaluated if any chemicals exceeded the excess lifetime cancer risk of 1E-06 or a HQ of 1 for non-cancer effects for industrial (non-residential) indoor air. As shown in **Table 4**, only TCE in building TR-8 was potentially above that criterion due to vapor intrusion. The non-cancer hazard for all VOCs (chlorinated VOCs and petroleum hydrocarbons) was acceptable (i.e., HI<1) for all buildings tested. The risk level for possible carcinogens was below 1E-06 levels for TR-4 and was within the risk management range (i.e., 10^{-4} to 10^{-6}) for all other buildings tested. The cumulative cancer and HI risk due to VI is less 10-5 and 1, respectively, for chlorinated VOCs, which is a commonly used decision point for additional action including mitigation.

As noted previously, permanent sealing of the vaults in TR-8 was completed in August 2018 and presented to NYSDEC in the CCR (AECOM January 2019). Although TCE concentrations decreased by approximate half after the vault sealing, there were detections above the USEPA RSL for commercial properties of 3 µg/m^3 at two of the three sample locations in January 2019. Three indoor air samples were collected on the second floor (which is where occupants spend a majority of time) in May 2019. There was one detection of TCE above the USEPA RSL for commercial properties of 3 µg/m^3. As a next step, an HVAC evaluation will be completed to determine if modifications to the HVAC system (e.g., adjusting the system air balance) would provide adequate mitigation. This is likely to be the case given the relatively stagnant indoor air on the first and second floors.

In addition to the mitigation steps at TR-8, the actions described below at other buildings will occur.

Restricted access to the crawl space in TR-4 will continue to be in place in the form signage at the entry points to notify Carrier Environmental Health and Safety department prior to access and a Safe Work plan for maintenance workers to access the space.

The additional sub-slab samples in TR-20 within the immediate area of SSV-3 delineated the soil gas in this area. The SSD system pilot test was successful in providing final design parameters for SSD system.

As noted in the 2018 VI Report, no indoor air samples were collected in the SWTP due to active processes with potential interfering sources. However due to the known historical subsurface impacts in the area and elevated sub-slab results, an active SSD system will be installed. The SSD system pilot testing conducted in October 2018 was successful in providing final design parameters.

Based on the previous VI sampling in 2017/2018 and this sampling event, only TCE in building TR-8 was potentially above criterion (USEPA RSLs for commercial properties) due to vapor intrusion. With exception to TR-8, no additional sampling is warranted at this time for the buildings included in this VI study. Implementation of a targeted SSD system at TR-20 in the area of TR-20-SSV-3 and the SWTP will be completed.

7. References

New York State Department of Health. 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Final. October.

NYSDEC. 2010. Guidance for Data Deliverables and the Development of Data Usability Summary Reports.
DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B. Division of Environmental Remediation. May.

USEPA1. 2013 National Monitoring Programs Annual Report (UATMP, NATTS, CSATAM). Final Report.
EPA-454/R-15-005a. October 2015. (Table 31-2).

USEPA2. 2013 National Monitoring Programs Annual Report (UATMP, NATTS, CSATAM). Final Report.
EPA-454/R-15-005a. October 2015. (Table 4-1).

Tables

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR4

Location ID								TR4-IA-1	TR4-IA-1	TR4-SSV-1	TR4-SSV-1	TR4-IA-1	TR4-SSV-1
Sample ID								FD-IA-120617	TR4-IA-1	FD-SSV-120617	TR4-SSV-1	TR4-IA-1	TR4-SSV-1
Matrix								Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/06/17	12/06/17	12/06/17	12/06/17	03/02/18	03/02/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range	Field Duplicate (1-1)		Field Duplicate (1-1)			
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	0.01 U	7.89 U	7.89 U	0.01 U	7.89 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	0.30 U	7.53 U	7.53 U	0.30 U	7.53 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.38	0.33	10.95 U	10.95 U	0.19	10.95 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.12	0.09 J	81.69	85.99	0.04 J	103.19
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.21 J	0.19 UJ	40.27	36.28	0.19 U	47.69
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.15	0.09 J	11.53 U	11.53 U	0.05 J	11.53 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.52	0.66	7.08 U	7.08 U	0.84	7.08 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	0.05 U	4.91 U	4.91 U	0.05 U	4.91 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	0.01 U	7.21 U	7.21 U	0.01 U	7.21 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	0.29 U	6.46 U	6.46 U	0.29 U	6.46 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.66	0.77	6.35 U	6.35 U	0.61	6.35 U
Ethylbenzene	UG/M3	4.9						0.36 U	0.40 J	7.63 U	7.63 U	0.36 U	7.63 U
Toluene	UG/M3	22,000						1.19	1.63	6.62 U	6.62 U	0.87	6.62 U
m&p-Xylene	UG/M3	440						0.79 U	1.35	15.04 U	15.04 U	0.79 U	15.04 U
o-Xylene	UG/M3	440						0.24 J	0.44	8.67 U	8.67 U	0.20 J	8.67 U

Notes:

1 - Sample collected from crawlspace

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

UG/M3 - micrograms per cubic meter

NYSDOH - New York State Department of Health

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR4

Location ID								TR4-IA-2	TR4-SSV-2	TR4-IA-2	TR4-SSV-2
Sample ID								TR4-IA-2	TR4-SSV-2	TR4-IA-2	TR4-SSV-2
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/06/17	12/06/17	03/02/18	03/02/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	7.89 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	7.53 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.32	10.95 U	0.2	10.95 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11 U	14.78	0.06 J	12.95
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	18.93	0.19 U	31.92
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.03 J	11.53 U	0.09 J	18.92
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.41	7.08 U	1.77	7.08 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.05 U	4.91 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.21 U	0.01 U	7.21 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	6.46 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						0.37	6.35 U	1.02	6.35 U
Ethylbenzene	UG/M3	4.9						0.36 U	7.63 U	0.36 U	7.63 U
Toluene	UG/M3	22,000						0.42	6.62 U	1.5	6.62 U
m&p-Xylene	UG/M3	440						0.79 U	15.04 U	1.24	15.04 U
o-Xylene	UG/M3	440						0.15 U	8.67 U	0.36 J	8.67 U

Notes:

1 - Sample collected from crawlspace

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

UG/M3 - micrograms per cubic meter

NYSDOH - New York State Department of Health

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR4

Location ID								TR4-IA-3	TR4-SSV-3[1]	TR4-IA-3	TR4-SSV-3[1]	TR4-IA-3	TR4-IA-3	TR4-SSV-3[1]	TR4-SSV-3[1]
Sample ID								TR4-IA-3	TR4-SSV-3	TR4-IA-3	TR4-SSV-3	FD-011519-2	TR4-IA-3	FD-011519-1	TR4-SSV-3
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor
Date Sampled								12/06/17	12/06/17	03/02/18	03/02/18	1/15/2019	1/15/2019	1/15/2019	1/15/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range					Field Duplicate (1-1)		Field Duplicate (1-1)	
Chlorinated VOCs															
Matrix A															
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U	0.021 U	0.021 U	0.54	0.56
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.71	11.66	0.52	6.78	0.13	0.15	12	12
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.38	10.95 U	0.24	2.19 U	0.36	0.42	0.39	0.37
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.53	14.73	1.78	25.64	0.25	0.28	23	24
Matrix B															
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	1.72	42.61	2.94	65.47	0.24	0.27	40	41
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.09 J	11.53 U	0.38 J	2.31 U	0.085 J	0.11 J	0.091 J	0.094 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.49	7.08 U	3.15	1.42 U	2.5	0.42 J	1.8	0.92 J
Matrix C															
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.05 U	0.98 U	0.011 U	0.011 U	0.039 J	0.049 J
Other															
1,1-Dichloroethane	UG/M3	7.7						0.19	7.21 U	0.01 U	4.21	0.047 J	0.052 J	5.6	5.7
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.56	1.29 U	0.13 J	0.15 J	0.15 J	0.17 J
Non-Chlorinated VOCs															
Benzene	UG/M3	1.6						0.63	6.35 U	0.68	4.31	0.67	0.69	0.33	0.29
Ethylbenzene	UG/M3	4.9						0.36 U	7.63 U	0.36 U	1.53 U	0.3	0.34	0.13 J	0.083 J
Toluene	UG/M3	22,000						1.55	6.62 U	1.19	1.33 U	2.9	3.1	0.74	0.32
m&p-Xylene	UG/M3	440						0.79 U	15.04 U	0.79 U	3.01 U	0.9	1	0.42	0.29 J
o-Xylene	UG/M3	440						0.26 J	8.67 U	0.21 J	1.74 U	0.36	0.41	0.2	0.12 J

Notes:
1 - Sample collected from crawlspace
IA - indoor air
OA - outdoor air
SSV - sub-slab vapor
UG/M3 - micrograms per cubic meter
NYSDOH - New York State Department of Health

Per NYSDOH Matrix Guidance: Mitigate
Per NYSDOH Matrix Guidance: Monitor
Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
Exceeds Environmental Protection Agency (EPA) Screening Level
Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.
Detection Limits shown are Method Detection Limits (MDL)
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.
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D – The sample result was reported from a secondary dilution analysis.
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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR4

Location ID								TR4-IA-4A	TR4-IA-4B	TR4-SSV-4	TR4-IA-4A	TR4-SSV-4
Sample ID								TR4-IA-4A	TR4-IA-4B	TR4-SSV-4	TR4-IA-4	TR4-SSV-4
Matrix								Indoor Air	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/06/17	12/06/17	12/06/17	03/02/18	03/02/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range					
Chlorinated VOCs												
Matrix A												
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	0.01 UJ	7.89 U	0.01 U	7.89 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	0.30 U	7.53 U	0.30 U	7.53 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.33	0.52 J	10.95 U	0.23	10.95 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.31	0.29	88.67 J	0.42	64.49
Matrix B												
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	1.15	0.93	11.29 J	4	6.77 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.11 J	0.07 J	11.53 U	0.06 J	11.53 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.95	1.02	7.08 U	0.55	7.08 U
Matrix C												
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	0.05 UJ	4.91 U	0.05 U	4.91 U
Other												
1,1-Dichloroethane	UG/M3	7.7						0.09	0.09 J	7.21 U	0.01 U	7.21 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	0.29 U	6.46 U	0.29 J	6.46 U
Non-Chlorinated VOCs												
Benzene	UG/M3	1.6						0.56	0.46	6.35 U	0.51	6.35 U
Ethylbenzene	UG/M3	4.9						0.43 J	0.47	7.63 U	0.36 U	7.63 U
Toluene	UG/M3	22,000						3.11	2.08	23.93 J-	2.43	6.62 U
m&p-Xylene	UG/M3	440						1.42	1.28	15.04 U	0.79 U	15.04 U
o-Xylene	UG/M3	440						0.74	0.64	8.67 U	0.33 J	8.67 U

Notes:

1 - Sample collected from crawlspace

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

UG/M3 - micrograms per cubic meter

NYSDOH - New York State Department of Health

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR4

Location ID								TR4-IA-5	TR4-SSV-5	TR4-IA-5	TR4-SSV-5	TR4-OA-1	TR4-OA-1
Sample ID								TR4-IA-5	TR4-SSV-5	TR4-IA-5	TR4-SSV-5	TR4-OA-1	TR4-OA-1
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Outdoor Air	Outdoor Air
Date Sampled								12/06/17	12/06/17	03/02/18	03/02/18	12/06/17	03/02/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U	0.01 U	0.01 J
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	1.50 U	0.30 U	0.30 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.37	10.95 U	0.23	2.19 U	0.25	0.25
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.10 J	67.18	0.18	63.42	0.37	0.07
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	83.48	0.97	66.56	0.19 U	0.19 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.04 J	11.53 U	0.06 J	2.31 U	0.04 J	0.13 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	1.16	7.08 U	2.44	1.42 U	0.27 J	0.17 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.05 U	0.98 U	0.05 U	0.05 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.21 U	0.01 U	3.13	0.01 U	0.01 J
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.42	1.29 U	0.29 U	0.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.72	6.35 U	0.58	1.27 U	0.41	0.51
Ethylbenzene	UG/M3	4.9						0.8	9.54 J	0.58	1.53 U	1.57	0.36 U
Toluene	UG/M3	22,000						2.17	10.31	4.7	2.22	1.8	0.29 U
m&p-Xylene	UG/M3	440						3.35	45.09	2.51	6.2	3.45	0.79 U
o-Xylene	UG/M3	440						1.47	21.89	1.09	3.26	1.27	0.15 U

Notes:

1 - Sample collected from crawlspace

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

UG/M3 - micrograms per cubic meter

NYSDOH - New York State Department of Health

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR7

Location ID								TR7-IA-1	TR7-SSV-1	TR7-IA-1	TR7-SSV-1
Sample ID								TR7-IA-1	TR7-SSV-1	TR7-IA-1	TR7-SSV-1
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/08/17	12/08/17	03/08/18	03/08/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 UJ	7.89 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 UJ	22.84 D	0.30 U	44.81
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.29 J	10.95 U	0.31	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.22 J	105 D	0.27	242.92
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 UJ	21.3 D	0.19 U	16.2
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.09 J	11.53 U	0.07 J	8.27
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	1.61 J	7.08 U	0.66	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 UJ	4.91 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 UJ	8.99 D	0.04 J	19.72
1,2-Dichloroethene (trans)	UG/M3							0.29 UJ	6.46 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						0.74 J	7.91 D	0.8	1.27 U
Ethylbenzene	UG/M3	4.9						1.45 J	7.63 U	0.43	10.06
Toluene	UG/M3	22,000						2.42 J	19.4 D	1.47	53.06
m&p-Xylene	UG/M3	440						4.19 J	22.7 D	1.6	32
o-Xylene	UG/M3	440						1.54 J	15.43 D	0.87	31.65

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR7

Location ID								TR7-IA-2	TR7-SSV-2	TR7-IA-2	TR7-SSV-2
Sample ID								TR7-IA-2	TR7-SSV-2	TR7-IA-2	TR7-SSV-2
Matrix								Indoor Air	Subslab Vapor	Indoor Air	AS Subslab Vapor
Date Sampled								12/08/17	12/08/17	03/08/18	03/08/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.16	10.95 U	0.25	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.22	20.4 J	0.16	14.51
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	27	0.19 U	20.13
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.10 J	11.53 U	0.01 U	3.12 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.47	7.08 U	0.52	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.03 J	7.21 U	0.01 U	1.66
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						0.88	6.35 U	0.61	1.27 U
Ethylbenzene	UG/M3	4.9						0.59	1,220 D	0.36 U	494.23 D
Toluene	UG/M3	22,000						1.77	17.2 J	1.09	18.59
m&p-Xylene	UG/M3	440						2.34	6,330 D	1.13	2,150.35 D
o-Xylene	UG/M3	440						1.01	3,050 D	0.39 J	1,088.18 D

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR7

Location ID								TR7-IA-3	TR7-SSV-3	TR7-IA-3	TR7-SSV-3	TR7-IA-3	TR7-SSV-3
Sample ID								TR7-IA-3	TR7-SSV-3	TR7-IA-3	TR7-SSV-3	TR7-IA-3	TR7-SSV-3
Matrix								Indoor Air	Subslab Vapor	Indoor Air	AS Subslab Vapor	AI Indoor Air	AS Subslab Vapor
Date Sampled								12/08/17	12/08/17	03/08/18	03/08/18	1/15/2019	1/15/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U	0.021 U	0.1
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	1.50 U	0.16	0.48
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.23	10.95 U	0.19	2.19 U	0.41	0.31
Trichloroethene	UG/M3	3	2	0.2	1	6	60	2.08	25.2 J	2.53	13.11	1.1	80
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	6.77 U	0.19 U	1.52 J	0.034 J	1.3
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.09 J	11.53 U	0.2	2.31 U	0.097 J	0.42
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.43	7.08 U	0.59	1.42 U	0.77 J	1.2
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.01 U	0.98 U	0.024 J	0.53
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.21 U	0.01 U	1.45 U	0.036 J	0.34
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	1.29 U	0.028 U	0.029 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.94	6.35 U	0.54	1.27 U	2.5	3
Ethylbenzene	UG/M3	4.9						0.68	7.63 U	0.36 U	1.53 U	1.5	2.2
Toluene	UG/M3	22,000						2.21	24.6 J	1.09	4.4	9.9	9.8
m&p-Xylene	UG/M3	440						2.53	31.1	0.79 U	7.98	5.7	11
o-Xylene	UG/M3	440						1.08	11.8	0.30 J	3.5	1.9	4.5

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR7

Location ID								TR7-IA-4	TR7-IA-4	TR7-SSV-4	TR7-SSV-4
Sample ID								FD-180308-2	TR7-IA-4	FD-180308-1	TR7-SSV-4
Matrix								Indoor Air AI	Indoor Air	AS Subslab Vapor	AS Subslab Vapor
Date Sampled								03/08/18	03/08/18	03/08/18	03/08/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**	Field Duplicate (1-1)		Field Duplicate (1-1)	
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	0.01 U	1.58 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	0.30 U	1.50 U	70.58
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.31	0.31	2.19 U	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.38	0.32	2.19 U	180.04
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	0.19 U	1.36 U	7.42
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.14	0.07 J	2.31 U	6.58
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	2.19	0.66	1.42 U	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.01 U	0.01 U	0.98 U	1.10 J
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 U	0.04 J	1.45 U	25.63
1,2-Dichloroethene (trans)	UG/M3							0.29 U	0.29 U	1.29 U	1.63 J
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						0.77	0.7	1.27 U	1.27 U
Ethylbenzene	UG/M3	4.9						0.43	0.39 J	1.53 U	5.51
Toluene	UG/M3	22,000						1.77	1.39	1.33 U	11.18
m&p-Xylene	UG/M3	440						1.86	1.47	3.01 U	15.17
o-Xylene	UG/M3	440						1	0.78	1.74 U	8.41

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR7

Location ID								TR7-IA-5	TR7-SSV-5	TR7-IA-6	TR7-SSV-6	TR7-OA-1	TR7-OA-1
Sample ID								TR7-IA-5	TR7-SSV-5	TR7-IA-6	TR7-SSV-6	TR7-OA-1	TR7-OA-1
Matrix								Indoor Air	Subslab Vapor AS	Indoor Air	AS Subslab Vapor AS	Outdoor Air	AA Outdoor Air
Date Sampled								03/08/18	03/08/18	03/08/18	03/08/18	12/08/17	03/08/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	1.58 U	0.01 U	1.58 U	0.01 U	0.01 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	1.50 U	0.30 U	1.50 U	0.30 U	0.30 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.25	2.19 U	0.19	2.19 U	0.3	0.19
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.38	10.1	0.32	52.13	0.09 J	0.01 U
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	4.46	0.19 U	6.87	0.19 U	0.19 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.41	114.6	0.07 J	4.31	0.14 U	0.14
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.17 U	1.42 U	34.65	1.42 U	0.17 U	1.67
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.01 U	0.98 U	0.01 U	0.98 U	0.05 U	0.01 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	1.45 U	0.01 U	1.45 U	0.03 J	0.01 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	1.29 U	0.29 U	1.29 U	0.29 U	0.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.77	1.27 U	1.02	1.27 U	0.52	0.54
Ethylbenzene	UG/M3	4.9						0.36 U	1.53 U	1.52	17.12	0.36 U	0.36 U
Toluene	UG/M3	22,000						1.09	5.31	9.03	42.52	0.39	0.53
m&p-Xylene	UG/M3	440						1.17	7.59	6.85	70.67	0.79 U	0.79 U
o-Xylene	UG/M3	440						0.52	2.81	1.91	28.27	0.15 U	0.15 U

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, January 2019, and May 2019
Building TR8

Location ID								TR8-IA-1	TR8-SSV-1	TR8-IA-1	TR8-SSV-1	TR8-IA-1	TR8-SSV-1
Sample ID								TR8-IA-1	TR8-SSV-1	TR8-IA-1	TR8-SSV-1	TR8-IA-1	TR8-SSV-1
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/11/17	12/11/17	03/12/18	03/12/18	1/15/2019	1/15/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	9.24	0.01 U	6.31 U	0.31	4
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	4.48	551	2.26	139.97	0.9	140
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.29	10.95 U	0.25	8.74 U	0.39	0.47 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	2.72 J	318	5.7	434.24	3.2	470
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.79	21.7	0.87	27.06	0.49	31
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.33	16.1	3.46	12.48 J	0.32	12
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.67	8.58	1.04	5.66 U	1.1	1.5 J
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.47	51.4	0.01 U	3.94 U	0.1	2
Other													
1,1-Dichloroethane	UG/M3	7.7						0.39	61.6	0.24	46.97	0.3	50
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	5.15 U	0.039 J	1.6 J
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						2.09	6.35 U	1.34	5.07 U	1.2	0.24 J
Ethylbenzene	UG/M3	4.9						1.91	7.63 U	0.69	6.11 U	1.1	0.076 U
Toluene	UG/M3	22,000						10.23	6.62 U	2.22	5.31 U	3.7	0.23 J
m&p-Xylene	UG/M3	440						7.72	15.04 U	3.03	12.05 U	4.2	0.22 J
o-Xylene	UG/M3	440						3.06	8.67 U	1.26	6.94 U	2.4	0.14 J

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, January 2019, and May 2019
Building TR8

Location ID								TR8-IA-2	TR8-SSV-2	TR8-IA-2	TR8-SSV-2	TR8-IA-3	TR8-SSV-3
Sample ID								TR8-IA-2	TR8-SSV-2	TR8-IA-2	TR8-SSV-2	TR8-IA-3	TR8-SSV-3
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								03/12/18	03/12/18	1/15/2019	1/15/2019	03/12/18	03/12/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.02 U	6.31 U	0.31	0.18	0.01 U	3.95 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.71 U	30.69	1.2	22	1.39	19.23
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.18 J	8.74 U	0.41	0.35 J	0.19	5.47 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	6.02	435.85	4.3	270	5.97	328.9
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	1.27 J	88.39	0.67	52	0.82	37.26
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.68	21.23	0.36	11	0.27	17.7
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.41 U	5.66 U	0.46 J	0.92 J	0.83	3.54 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.01 U	3.94 U	0.13	0.63	0.01 U	2.46 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.21	15.63	0.41	12	0.16	15.67
1,2-Dichloroethene (trans)	UG/M3							0.67 U	5.15 U	0.041 J	0.41 J	0.29 U	3.23 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.76	5.07 U	1.3	0.74	2.17	3.17 U
Ethylbenzene	UG/M3	4.9						0.85 U	6.11 U	1.2	1.2	0.78	3.82 U
Toluene	UG/M3	22,000						0.95	5.31 U	3.6	2	4.4	3.32 U
m&p-Xylene	UG/M3	440						1.86 U	12.05 U	4.9	4.3	3.12	14.96
o-Xylene	UG/M3	440						0.36 U	6.94 U	3.1	2.6	1.13	5.59

Notes:

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OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

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Flags assigned during chemistry validation are shown.

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Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, January 2019, and May 2019
Building TR8

Location ID								TR8-IA-3	TR8-SSV-3	OA-011519	TR8-IA-4	TR8-IA-5	TR8-IA-6	TR8-IA-6	OA-050119
Sample ID								TR8-IA-3	TR8-SSV-3	OA-011519	TR8-IA-4	TR8-IA-5	TR8-IA-6	FD-IA-050119	OA-050119
Matrix								Indoor Air	Subslab Vapor	Outdoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Outdoor Air
Date Sampled								1/15/2019	1/15/2019	1/15/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range							Field Duplicate	
Chlorinated VOCs															
Matrix A															
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.44	0.068 U	0.018 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.75	30	0.032 J	0.91	0.70	0.47	0.48	0.079 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.42	0.58 J	0.41	0.41	0.41	0.40	0.41	0.39
Trichloroethene	UG/M3	3	2	0.2	1	6	60	2.4	350	0.12 J	3.94	2.48	1.64	1.56	0.107 U
Matrix B															
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.35	44	0.019 J	0.55	0.37	0.24	0.25	0.109 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.37	16	0.080 J	0.40	0.23	0.19	0.17	0.136 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.80 J	1.6 J	9.1	0.72	0.694 U	0.694 U	0.694 U	0.75
Matrix C															
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.013 U	0.34	0.0094 U	0.07	0.07	0.051 U	0.05	0.051 U
Other															
1,1-Dichloroethane	UG/M3	7.7						0.26	23	0.014 U	0.36	0.26	0.18	0.18	0.080 U
1,2-Dichloroethene (trans)	UG/M3							0.035 U	0.86 J	0.025 U	0.18	0.18	0.19	0.21	0.079 U
Non-Chlorinated VOCs															
Benzene	UG/M3	1.6						1.9	0.44 J	0.64	0.53	0.53	0.52	0.49	0.26
Ethylbenzene	UG/M3	4.9						1.4	0.11 J	0.26	0.76	0.71	0.69	0.59	0.130 U
Toluene	UG/M3	22,000						6.4	1.1	54	2.94	3.24	3.61	3.65	0.84
m&p-Xylene	UG/M3	440						5.3	0.33 J	0.76	2.93	2.87	2.38	2.25	1.73 U
o-Xylene	UG/M3	440						2.3	0.18 J	0.14	1.95	2.30	1.47	1.40	0.867 U

Notes:

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OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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.

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-IA-1	TR19-SSV-1	TR19-IA-1	TR19-SSV-1
Sample ID								TR19-IA-1	TR19-SSV-1	TR19-IA-1	TR19-SSV-1
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/05/17	12/05/17	03/07/18	03/07/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.27	10.95 U	0.19	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11 U	10.96 U	0.01 U	2.42 J
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	8.78 J	0.19 U	9.33
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.14 U	11.53 U	0.07 J	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.47	7.08 U	3.19	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.21 U	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						0.53	6.35 U	0.7	1.27 U
Ethylbenzene	UG/M3	4.9						0.42 J	7.63 U	0.36 U	1.53 U
Toluene	UG/M3	22,000						0.99	6.62 U	1.17	2.14
m&p-Xylene	UG/M3	440						0.95	15.04 U	1.04	3.01 U
o-Xylene	UG/M3	440						0.33 J	8.67 U	0.56	1.74 U

Notes:

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UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

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Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-IA-2	TR19-SSV-2	TR19-IA-2	TR19-SSV-2	TR19-IA-2	TR19-SSV-2
Sample ID								TR19-IA-2	TR19-SSV-2	TR19-IA-2	TR19-SSV-2	TR19-IA-2	TR19-SSV-2
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/05/17	12/05/17	03/07/18	03/07/18	1/16/2019	1/16/2019
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	16.58 U	0.01 U	1.58 U	0.020 U	0.20 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	15.78 U	0.30 U	1.50 U	0.021 U	0.22 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.26	22.96 U	0.25	2.19 U	0.41	0.98 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	1.54	23.00 U	0.16	2.42 J	0.080 J	0.79 J
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	14.24 U	0.19 U	1.36 U	0.024 J	0.27 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.25	24.28 U	0.61	2.37 J	0.7	1.4 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.42	14.86 U	0.87	2.19	0.76 J	2.3 J
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	10.33 U	0.01 U	0.98 U	0.010 U	0.68 J
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	15.18 U	0.01 U	1.45 U	0.015 U	0.16 J
1,2-Dichloroethene (trans)	UG/M3							0.29 U	13.56 U	0.29 U	1.29 U	0.053 J	0.27 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						1.23	13.33 U	1.85	1.27 U	2	2.9
Ethylbenzene	UG/M3	4.9						1.05	16.04 U	1.34	1.53 U	2.4	3.8
Toluene	UG/M3	22,000						3.36	13.96 U	4.33	1.77 J	20	13
m&p-Xylene	UG/M3	440						4.64	31.60 U	6.03	6.33	8.7	16
o-Xylene	UG/M3	440						2.15	18.25 U	2.82	4.12	3.3	6.7

Notes:

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OA - outdoor air

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UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

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Flags assigned during chemistry validation are shown.

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VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-IA-3	TR19-IA-3	TR19-SSV-3	TR19-SSV-3	TR19-IA-3	TR19-SSV-3
Sample ID								FD-IA-120517	TR19-IA-3	FD-SSV-120517	TR19-SSV-3	TR19-IA-3	TR19-SSV-3
Matrix								Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/05/17	12/05/17	12/05/17	12/05/17	03/07/18	03/07/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range	Field Duplicate (1-1)		Field Duplicate (1-1)			
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	0.01 U	7.89 U	7.89 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.53 U	0.30 U	7.53 U	7.53 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.28 J	0.15 J	10.95 U	10.95 U	0.19	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.01 U	0.11 U	26.12	25.96	0.01 U	69.33
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.33 U	0.19 U	6.77 U	6.77 U	0.19 U	2.73
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.49	0.14 U	11.53 U	11.53 U	0.14	10.65
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	1.53 J	0.48 J	7.08 U	7.08 U	0.44	1.70 J
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.01 U	0.05 U	4.91 U	4.91 U	0.01 U	0.98 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	0.01 U	7.21 U	7.21 U	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.50 U	0.29 U	6.46 U	6.46 U	0.29 U	1.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.43 J	0.36	6.35 U	6.35 U	0.62	37.01
Ethylbenzene	UG/M3	4.9						0.64 UJ	1.66 J	11.97	10.10 J	0.36 U	11.49
Toluene	UG/M3	22,000						0.56 J	4.03 J	6.62 U	6.62 U	0.33 J	194.91 D
m&p-Xylene	UG/M3	440						1.39 UJ	4.81 J	71.97	76.74	0.79 U	52.02
o-Xylene	UG/M3	440						0.27 UJ	2.05 J	18.34	17.51	0.15 U	15.17

Notes:

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OA - outdoor air

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NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

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Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-IA-4	TR19-SSV-4	TR19-IA-4	TR19-SSV-4	TR19-IA-4	TR19-SSV-4
Sample ID								TR19-IA-4	TR19-SSV-4	TR19-IA-4	TR19-SSV-4	TR19-IA-4	TR19-SSV-4
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/05/17	12/05/17	03/07/18	03/07/18	1/16/2019	1/16/2019
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	2.14	0.019 U	0.55
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	274	0.30 U	463.93 D	0.020 U	100
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.29	10.95 U	0.25	2.19 U	0.41	0.51 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11 U	221.42	0.05 J	254.20 D	0.047 J	110
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	6.77 U	0.19 U	1.36 U	0.019 U	0.20 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.14 U	23.46	0.07 J	48.15	0.099 J	17
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.32 J	7.08 U	0.59	1.42 U	0.47 J	1.6 J
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	6.21 J	0.01 U	11.43	0.0097 U	3.7
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.21 U	0.01 U	1.45 U	0.014 U	0.13 J
1,2-Dichloroethene (trans)	UG/M3							0.29 U	44.01	0.29 U	93.58	0.026 U	24
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						1.21	6.35 U	2.04	1.27 U	1.8	1.7
Ethylbenzene	UG/M3	4.9						0.62	114.02	1.78	5.42	1.4	12
Toluene	UG/M3	22,000						2.64	14.19	5.91	1.99	25	12
m&p-Xylene	UG/M3	440						2.36	780.37	8.76	36.72	5.5	80
o-Xylene	UG/M3	440						1.3	550.59	3.99	27.83	2.2	63

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

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 low.

D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-SSV-5	TR19-IA-5	TR19-IA-5	TR19-SSV-5
Sample ID								TR19-SSV-5	TR19-IA-5	TR19-IA-5	TR19-SSV-5
Matrix								Subslab Vapor	Indoor Air	Indoor Air	Subslab Vapor
Date Sampled								12/05/17	12/05/17	03/07/18	03/07/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	7.89 U	0.01 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	7.53 U	0.30 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	10.95 U	0.38	0.19	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	10.96 U	0.53	0.01 U	2.19 U
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	6.77 U	0.65	0.19 U	1.36 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	11.53 U	0.08 J	0.01 U	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	7.08 U	0.58	1.81	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	4.91 U	0.05 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						7.21 U	0.29 J	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							6.46 U	0.29 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						6.35 U	0.73	1.56	1.27 U
Ethylbenzene	UG/M3	4.9						7.63 U	0.82	0.61	7.72
Toluene	UG/M3	22,000						6.62 U	1.55	2.78	22.65
m&p-Xylene	UG/M3	440						15.04 U	2.29	2.43	19.47
o-Xylene	UG/M3	440						8.67 U	0.88	1.34	6.85

Notes:

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OA - outdoor air

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NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

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Flags assigned during chemistry validation are shown.

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D – The sample result was reported from a secondary dilution analysis.

UJ – The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-IA-6	TR19-SSV-6	TR19-IA-6	TR19-SSV-6	TR19-IA-6	TR19-IA-6
Sample ID								TR19-IA-6	TR19-SSV-6	TR19-IA-6	TR19-SSV-6	FD-011619-2	TR19-IA-6
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Indoor Air
Date Sampled								12/05/17	12/05/17	03/07/18	03/07/18	1/16/2019	1/16/2019
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**					Field Duplicate (1-1)	
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.89 U	0.01 U	1.58 U	0.20 U	0.019 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.53 U	0.30 U	1.50 U	0.084 J	0.020 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.42	10.95 U	0.19	2.19 U	0.4	0.37
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11 U	10.96 U	0.01 U	2.19 U	0.30 J	0.034 J
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.29 J	6.77 U	0.19 U	1.36 U	0.023 J	0.019 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.08 J	11.53 U	0.07	2.31 U	0.083 J	0.11 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.65	7.08 U	0.69	1.63	1.1 UJ	2.4 J
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.91 U	0.01 U	0.98 U	0.10 U	0.0096 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.09 J	7.21 U	0.01 U	1.45 U	0.15 U	0.014 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.46 U	0.29 U	1.29 U	0.28 U	0.026 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.99	6.35 U	2.04	1.27 U	1.1	1.1
Ethylbenzene	UG/M3	4.9						0.36 U	7.63 U	1.13	6.46	0.78	0.75
Toluene	UG/M3	22,000						1.11	12.34	4.85	4.59	12	12
m&p-Xylene	UG/M3	440						1.05	15.04 U	5.16	38.11	2.8	2.7
o-Xylene	UG/M3	440						0.5	8.67 U	2.3	22.07	1.1	1

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

Detection Limits shown are Method Detection Limits (MDL)

U – The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

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J- – The result is an estimated quantity, but the result may be biased low.

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Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-SSV-6	TR19-SSV-6	TR19-IA-7	TR19-SSV-7	TR19-IA-8	TR19-SSV-8
Sample ID								FD-011619-1	TR19-SSV-6	TR19-IA-7	TR19-SSV-7	TR19-IA-8	TR19-SSV-8
Matrix								Subslab Vapor	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								1/16/2019	1/16/2019	03/07/18	03/07/18	03/07/18	03/07/18
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range	Field Duplicate (1-1)					
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.019 U	0.21 U	0.01 U	1.58 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.020 U	0.22 U	0.30 U	2.78	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.092 U	1.0 U	0.19	2.19 U	0.19	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.24 J	0.24 J	0.21 J	521.30 D	0.01 U	2.19 U
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.018 U	0.20 U	0.19 U	18.5	0.19 U	1.36 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.26 J	0.24 J	0.27	64.9	0.07 J	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	11 U	11 U	0.52	1.42 U	0.17 U	1.42 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.42 J	0.40 J	0.01 U	0.98 U	0.01 U	0.98 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.014 U	0.16 U	0.01 U	1.46 J	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.026 U	0.28 U	1.19	1.29 U	0.29 U	1.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						2.6 U	2.6 U	0.7	11.52	0.51	1.91
Ethylbenzene	UG/M3	4.9						0.75 J	0.80 J	0.36 U	1.53 U	0.36 U	1.53 U
Toluene	UG/M3	22,000						12	12	0.79	5.83	0.53	2.97
m&p-Xylene	UG/M3	440						3.2	3.2	0.79 U	3.01 U	0.79 U	3.01 U
o-Xylene	UG/M3	440						1.2 J	1.2 J	0.48	1.74 U	0.15 U	1.74 U

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

Flags assigned during chemistry validation are shown.

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J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR19

Location ID								TR19-OA-1	TR19-OA-1	OA-011619
Sample ID								TR19-OA-1	TR19-OA-1	OA-011619
Matrix								Outdoor Air	Outdoor Air	Outdoor Air
Date Sampled								12/05/17	03/07/18	1/16/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range			
Chlorinated VOCs										
Matrix A										
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	0.01 U	0.017 UJ
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	0.30 U	0.019 UJ
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.43	0.19	0.40 J
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11	0.01 U	0.034 J
Matrix B										
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.22 J	0.19 U	0.020 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.06 J	0.07 J	0.058 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.52	0.17 U	0.53 J
Matrix C										
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	0.01 U	0.0089 UJ
Other										
1,1-Dichloroethane	UG/M3	7.7						0.07 J	0.01 U	0.013 UJ
1,2-Dichloroethene (trans)	UG/M3							0.29 U	0.29 U	0.024 UJ
Non-Chlorinated VOCs										
Benzene	UG/M3	1.6						0.41	0.83	0.44 J
Ethylbenzene	UG/M3	4.9						0.36 U	0.36 U	0.10 J
Toluene	UG/M3	22,000						0.31 J	0.53	1.7 J
m&p-Xylene	UG/M3	440						0.79 U	0.79 U	0.27 J
o-Xylene	UG/M3	440						0.15 U	0.17 J	0.098 J

Notes:

IA - indoor air

OA - outdoor air

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NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-1	TR20-SSV-1	TR20-IA-1	TR20-SSV-1	TR20-IA-2	TR20-SSV-2
Sample ID								TR20-IA-1	TR20-SSV-1	TR20-IA-1	TR20-SSV-1	TR20-IA-2	TR20-SSV-2
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/04/17	12/04/17	03/06/18	03/06/18	12/04/17	12/04/17
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	2.61 U	0.2	1.58 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	2.48 U	0.42	1.50 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.19	3.61 U	0.63	2.19 U	0.19	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.02 J	3.62 U	0.32	11.12	0.05 J	2.19 U
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	15.06	0.87	14.46	0.19 U	1.36 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.04 J	3.82 U	2.2	10.24	0.07 J	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.46	2.53 J	0.87	1.42 U	0.30 J	1.42 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	1.62 U	0.13	0.98 U	0.05 U	0.98 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	2.38 U	0.24	1.45 U	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	2.13 U	0.73	1.29 U	0.29 U	1.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.72	2.10 U	1.48	1.27 U	0.7	1.27 U
Ethylbenzene	UG/M3	4.9						0.36 U	2.52 U	0.81	1.53 U	0.42 J	1.53 U
Toluene	UG/M3	22,000						1.03	4.89	2.38	2.37	1.06	1.33 U
m&p-Xylene	UG/M3	440						0.83 J	4.99 U	2.48	3.01 U	1.14	3.01 U
o-Xylene	UG/M3	440						0.35 J	2.87 U	0.98	1.86 J	0.38 J	1.74 U

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

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Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-3	TR20-SSV-3	TR20-IA-3	TR20-IA-3	TR20-SSV-3	TR20-SSV-3
Sample ID								TR20-IA-3	TR20-SSV-3	FD-180306-2	TR20-IA-3	FD-180306-1	TR20-SSV-3
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor
Date Sampled								12/04/17	12/04/17	03/06/18	03/06/18	03/06/18	03/06/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**			Field Duplicate (1-1)		Field Duplicate (1-1)	
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	31.58 U	0.01 U	0.01 U	1.58 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	30.06 U	0.30 U	0.30 U	13.12	13.92
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.22	43.78 U	0.25	0.25	2.19 U	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.07 J	5370	0.16	0.11	3,772.71 D	3,869.45 D
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	387	0.19 U	0.19 U	235.70 D	222.06 D
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.08 J	46.25 U	0.07 J	0.01 U	5.02	4.68
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.37	28.33 U	0.17 U	0.65	1.42 U	1.42 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	19.68 U	0.01 U	0.01 U	0.98 U	0.98 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	28.91 U	0.01 U	0.01 U	5.83	6.28
1,2-Dichloroethene (trans)	UG/M3							0.29 U	25.85 U	0.29 U	0.29 U	2.1	2.18
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						1.34	25.39 U	1.53	2.13	2.71	2.84
Ethylbenzene	UG/M3	4.9						1.02	62	0.65	1.06	5.59	6.16
Toluene	UG/M3	22,000						3.19	43.6	3.88	5.46	5.68	5.91
m&p-Xylene	UG/M3	440						3.97	338	2.9	4.99	27.88	31.87
o-Xylene	UG/M3	440						1.6	102	1.04	1.67	10.14	11.62

Notes:

IA - indoor air

OA - outdoor air

SSV - sub-slab vapor

NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level

Results indeterminate due to sample dilution

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Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-4	TR20-SSV-4	TR20-IA-4	TR20-SSV-4
Sample ID								TR20-IA-4	TR20-SSV-4	TR20-IA-4	TR20-SSV-4
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/04/17	12/04/17	03/06/18	03/06/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	1.58 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	1.50 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.2	2.19 U	0.25	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.04 J	2.19 U	0.11	7.79
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	1.36 U	0.19 U	2.24 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.05 J	2.83 J	0.07 J	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.35	1.42 U	0.38	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	0.98 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 U	1.45 U	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	1.29 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						1.16	1.27 U	1.88	1.66
Ethylbenzene	UG/M3	4.9						0.88	49	1.04	30.48
Toluene	UG/M3	22,000						2.77	26.1	5.53	5.68
m&p-Xylene	UG/M3	440						3.15	249	4.16	159.54
o-Xylene	UG/M3	440						1.26	85.8	1.69	77.17

Notes:

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TABLE 1
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Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-5	TR20-SSV-5	TR20-IA-5	TR20-SSV-5
Sample ID								TR20-IA-5	TR20-SSV-5	TR20-IA-5	TR20-SSV-5
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/04/17	12/04/17	03/06/18	03/06/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**				
Chlorinated VOCs											
Matrix A											
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	7.82 U	0.01 U	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	7.45 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.2	10.88 U	0.25	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.2	10.86 U	0.11	2.19 U
Matrix B											
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	6.77 U	0.19 U	1.36 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.07 J	11.46 U	0.20 J	2.31 U
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.5	7.01 U	0.17 U	1.42 U
Matrix C											
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	4.88 U	0.01 U	0.98 U
Other											
1,1-Dichloroethane	UG/M3	7.7						0.01 U	7.17 U	0.01 U	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	6.42 U	0.29 U	1.29 U
Non-Chlorinated VOCs											
Benzene	UG/M3	1.6						1.76	6.28 U	2.27	13.62
Ethylbenzene	UG/M3	4.9						1.37	13.1	1.65	122.26
Toluene	UG/M3	22,000						4.4	22.1 J-	7.83	23.14
m&p-Xylene	UG/M3	440						5.12	22	7.59	429.2
o-Xylene	UG/M3	440						2.21	8.63 U	2.86	183.39

Notes:

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Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

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TABLE 1
Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-6	TR20-SSV-6	TR20-IA-6	TR20-SSV-6	TR20-IA-7	TR20-SSV-7
Sample ID								TR20-IA-6	TR20-SSV-6	TR20-IA-6	TR20-SSV-6	TR20-IA-7	TR20-SSV-7
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								12/04/17	12/04/17	03/06/18	03/06/18	03/06/18	03/06/18
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	3.16 U	0.01 U	1.58 U	0.12	1.58 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	3.01 U	0.30 U	1.50 U	0.30 U	1.50 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.32	4.38 U	0.25	2.19 U	0.38	2.19 U
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.11 U	4.39 U	0.11	2.19 U	0.16	8.81
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	2.72 U	0.19 U	1.36 U	0.6	1.36 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.04 J	4.62 U	0.41 J	2.31 U	7.32	3.93
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.45	2.83 U	2.22	1.42 U	0.88	1.42 U
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.05 U	1.97 U	0.01 U	0.98 U	0.05	0.98 U
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	2.89 U	0.01 U	1.45 U	0.12	1.45 U
1,2-Dichloroethene (trans)	UG/M3							0.29 U	2.59 U	0.29 U	1.29 U	0.42	1.29 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						0.7	14.9	1.72	1.27 U	1.7	1.27 U
Ethylbenzene	UG/M3	4.9						0.36 U	131	1.17	7.07	0.7	1.53 U
Toluene	UG/M3	22,000						0.74	21.0 J-	5.46	2.93	2.38	1.33 U
m&p-Xylene	UG/M3	440						0.79 U	633 D	5.46	36.89	2.48	3.01 U
o-Xylene	UG/M3	440						0.15 U	512 D	2.08	31.95	1.06	1.74 U

Notes:

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NYSDOH - New York State Department of Health

UG/M3 - micrograms per cubic meter

Per NYSDOH Matrix Guidance: Mitigate

Per NYSDOH Matrix Guidance: Monitor

Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate

Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value

Exceeds Environmental Protection Agency (EPA) Screening Level

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Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-8	TR20-SSV-8	TR20-IA-9	TR20-SSV-9	TR20-IA-10	TR20-SSV-10
Sample ID								TR20-IA-8	TR20-SSV-8	TR20-IA-9	TR20-SSV-9	TR20-IA-10	TR20-SSV-10
Matrix								Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Subslab Vapor
Date Sampled								03/06/18	03/06/18	1/17/2019	1/17/2019	1/17/2019	1/17/2019
Parameter	**Units**	**EPA Screening Level (Commercial)**	**NYSDOH Air Guideline Value**	**NYSDOH Matrix IA Low Range**	**NYSDOH Matrix IA High Range**	**NYSDOH Matrix SSV Low Range**	**NYSDOH Matrix SSV High Range**						
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.01 U	1.58 U	0.060 U	7.9 U	0.020 U	0.020 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.30 U	1.50 U	0.074 U	6.2 U	0.021 U	0.022 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.19	2.19 U	0.59	7.9 U	0.42	0.37
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.05 J	6.13	0.071 J	9.0 U	0.048 J	0.28
Matrix B													
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.19 U	5.67	0.076 J	5.2 U	0.052 J	0.027 J
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.07 J	2.37 J	0.084 J	6.4 U	0.088 J	0.072 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	0.17 U	1.42 U	0.90 U	9.5 U	2.1	1.5
Matrix C													
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.01 U	0.98 U	0.016 U	5.1 U	0.010 U	0.24
Other													
1,1-Dichloroethane	UG/M3	7.7						0.01 U	1.45 U	0.050 U	4.2 U	0.015 U	0.020 J
1,2-Dichloroethene (trans)	UG/M3							0.29 U	1.29 U	0.058 U	5.8 U	0.027 U	0.027 U
Non-Chlorinated VOCs													
Benzene	UG/M3	1.6						1.61	2.23	1.7	5.4	1.2	0.64
Ethylbenzene	UG/M3	4.9						0.73	6.98	1.1	1200	0.97	0.17
Toluene	UG/M3	22,000						4.29	5.68	18	55	23	3
m&p-Xylene	UG/M3	440						2.86	23.97	4.1	4800	3.6	1
o-Xylene	UG/M3	440						0.98	6.42	1.6	1000	1.4	0.25

Notes:

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Carrier Site
Thompson Road, Syracuse, NY
VI Sampling Results
December 2017, March 2018, and January 2019
Building TR20

Location ID								TR20-IA-11	TR20-SSV-11	TR20-OA-1	TR20-OA-1	OA-011719
Sample ID								TR20-IA-11	TR20-SSV-11	TR20-OA-1	TR20-OA-1	OA-011719
Matrix								Indoor Air	Subslab Vapor	Outdoor Air	Outdoor Air	Outdoor Air
Date Sampled								1/17/2019	1/17/2019	12/04/17	03/06/18	1/17/2019
Parameter	Units	EPA Screening Level (Commercial)	NYSDOH Air Guideline Value	NYSDOH Matrix IA Low Range	NYSDOH Matrix IA High Range	NYSDOH Matrix SSV Low Range	NYSDOH Matrix SSV High Range					
Chlorinated VOCs												
Matrix A												
1,1-Dichloroethene	UG/M3	880		0.2	1	6	60	0.019 U	0.020 U	0.01 U	0.01 U	0.049 U
1,2-Dichloroethene (cis)	UG/M3			0.2	1	6	60	0.031 J	0.022 U	0.30 U	0.30 U	0.060 U
Carbon tetrachloride	UG/M3	2		0.2	1	6	60	0.4	0.21	0.35	0.25	0.62
Trichloroethene	UG/M3	3	2	0.2	1	6	60	0.045 J	0.36	0.17	0.01 U	0.054 J
Matrix B												
1,1,1-Trichloroethane	UG/M3	22,000		3	10	100	1,000	0.047 J	0.047 J	0.19 U	0.19 U	0.056 U
Tetrachloroethene	UG/M3	47	30	3	10	100	1,000	0.082 J	0.10 J	0.12 J	0.07 J	0.048 J
Methylene chloride	UG/M3	1,200	60	3	10	100	1,000	1.1 U	1.1 U	0.48	0.42	0.72 U
Matrix C												
Vinyl chloride	UG/M3	2.8		0.2	0.2	6	60	0.0099 U	0.36	0.05 U	0.01 U	0.013 U
Other												
1,1-Dichloroethane	UG/M3	7.7						0.014 U	0.033 J	0.01 U	0.01 U	0.040 U
1,2-Dichloroethene (trans)	UG/M3							0.026 U	0.027 U	0.29 U	0.29 U	0.046 U
Non-Chlorinated VOCs												
Benzene	UG/M3	1.6						1.2	0.76	0.84	0.54	0.81
Ethylbenzene	UG/M3	4.9						1	1.9	0.52	0.36 U	0.12 J
Toluene	UG/M3	22,000						23	3.1	1	0.30 J	0.62
m&p-Xylene	UG/M3	440						3.8	13	0.87	0.79 U	0.29
o-Xylene	UG/M3	440						1.4	6.5	0.35 J	0.15 U	0.12 J

Notes:

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TABLE 2
Carrier Site
Thompson Road, Syracuse, NY
Attenuation Factors Calculations
December 2017, March 2018, January 2019

			indoor Air			Sub-Slab Soil Gas			Outdoor Air			
Building	Sampling Date	Compound	n	Max, ug/m3	Avg, ug/m3	n	Max, ug/m3	Avg, ug/m3	n	Result, ug/m3	% of Indoor Air	AF	Comments
TR-4	Dec-17	TCE	5	0.53	0.23	5	88.7	54.3	1	0.37	162%	4.2E-03	
	Mar-18	TCE	5	1.78	0.49	5	103.2	53.9	1	0.07	14%	9.1E-03	
	Jan-19	TCE	1	0.28	0.28	1	24.0	24.0	1	0.12	43%	1.2E-02	
	Dec-17	cis-1,2-DCE	5	0.71	N/A	5	11.7	N/A	1	<0.30	--	6.1E-02	4 of 5 samples = ND (IA and SS)
	Mar-18	cis-1,2-DCE	5	0.52	N/A	5	6.8	N/A	1	<0.30	--	7.7E-02	4 of 5 samples = ND (IA and SS)
TR-5	Dec-17	TCE	5	0.53	0.18	5	1,030	306	1	0.13	71%	6.0E-04	
	Mar-18	TCE	5	1.82	0.42	5	1,349	322	1	0.03	7%	1.3E-03	
TR-6A	Dec-17	TCE	1	0.46	--	1	19.8	19.8	1	0.02	4%	2.3E-02	
	Mar-18	TCE	1	0.11	--	1	ND	ND	0			NC	
	Dec-17	Carbon Tet	1	0.30	--	1	65.4	--	1	0.27	90%	4.6E-03	
	Mar-18	Carbon Tet	1	0.19	--	1	69.8	--	0			2.7E-03	
	Dec-17	MeCl	1	0.33	--	1	<1.4	--	1	0.32	97%	NC	
	Mar-18	MeCl	1	0.56	--	1	<28	--	0			NC	
TR-7	Dec-17	TCE	3	2.08	0.84	3	105	50.2	1	0.09	11%	1.7E-02	
	Mar-18	TCE	6	2.53	0.66	6	243	85.5	1	<0.01	--	7.8E-03	
	Jan-19	TCE	1	1.1	1.10	1	80	80.0	1	0.12	11%	1.4E-02	
	Dec-17	cis-1,2-DCE	3	<0.30	N/A	3	22.8	N/A	1	<0.30	--	NC	2 o f3 sub-slabs were ND
	Mar-18	cis-1,2-DCE	6	<0.30	N/A	6	70.6	N/A	1	<0.30	--	NC	4 of 6 sub-slabs were ND
TR-7A	Dec-17	TCE	2	0.42	0.27	2	100	60.5	1	0.09	34%	4.4E-03	
	Mar-18	TCE	2	0.05	0.05	2	183	92.5	1	<0.01		5.4E-04	
TR-8	Dec-17	TCE	1	2.72	--	1	318	--	0			8.6E-03	
	Mar-18	TCE	3	6.02	5.90	3	436	240	1	ND	NC	2.5E-02	
	Jan-19	TCE	3	4.3	3.30	3	470	363	1	0.12	4%	9.1E-03	
	Dec-17	cis-1,2-DCE	1	4.48	--	1	551	--	0			8.1E-03	
	Mar-18	cis-1,2-DCE	3	2.26	1.45	3	140	63.3	1	ND	NC	2.3E-02	
	Jan-19	cis-1,2-DCE	3	1.2	0.95	3	140	64.0	1	0.03	3%	1.5E-02	
TR-10	Dec-17	TCE	1	0.12	--	1	ND	--	0	--	--	NC	
	Mar-18	TCE	1	0.08	--	0	--	--	0	--	--		
TR-12	Dec-17	TCE	1	0.40	--	1	790	--	1	0.04	10%	5.1E-04	
	Mar-18	TCE	1	0.50	--	1	580	--	1	0.05	10%	8.6E-04	
	Dec-17	cis-1,2-DCE	1	0.34	--	1	126	--	1	<0.30	<88%	2.7E-03	
	Mar-18	cis-1,2-DCE	1	0.66	--	1	85	--	1	<0.30	<45%	7.7E-03	
TR-19	Dec-17	TCE	6	1.54	0.42	6	221	51	1	0.11	7%	8.3E-03	
	Mar-18	TCE	8	0.21	0.06	8	521	107	1	<0.01	NC	5.5E-04	
	Jan-19	TCE	3	0.08	0.05	3	110	37	1	0.034	63%	1.5E-03	
	Dec-17	cis-1,2-DCE	6	<0.30	N/A	6	274	N/A	1	<0.30	--	NC	5 of 6 sub-slabs were ND
	Mar-18	cis-1,2-DCE	8	<0.30	N/A	8	464	N/A	1	<0.30	--	NC	6 of 8 sub-slabs were ND and 7th was 2.8 ug/m3
	Jan-19	cis-1,2-DCE	3	<0.20	N/A	3	100	100.0	1	0.02	--	NC	
TR-20	Dec-17	TCE	6	0.20	0.08	6	5,370	899	1	0.17	208%	9.1E-05	
	Mar-18	TCE	8	0.32	0.14	8	3,869	558	1	<0.01	NC	2.5E-04	
TR-21	Dec-17	TCE	2	ND	ND	2	57.5	52.5	0	--	N/A	NC	
	Mar-18	TCE	2	0.11	0.08	2	55.4	52.7	1	<0.01	NC	1.5E-03	
SWTP	Dec-17	TCE	0	N/A	N/A	2	898	514	1	0.38	NC	NC	
	Mar-18	TCE	0	N/A	N/A	5	1,892	592	1	0.11	NC	NC	
	Dec-17	cis-1,2-DCE	0	N/A	N/A	2	23.4	20.1	1	<0.30	NC	NC	
	Mar-18	cis-1,2-DCE	0	N/A	N/A	5	197	93.1	1	<0.30	NC	NC	

Notes:
n = number of samples
max = maximum measured value
avg = average measured value
ND = not detected
NC = not calculated
N/A = Not applicable or not meaningful
α = attenuation factor (indoor air / sub-slab)
IA = indoor air
SS = sub-slab soil gas
ug/m3 = micrograms per cubic meter
AF = Attenuation Factor

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-4

Location ID		TR4-IA-1			TR4-IA-1			TR4-IA-1			TR4-IA-2		
Sample ID		FD-IA-120617			TR4-IA-1			TR4-IA-1			TR4-IA-2		
Matrix		Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard
Date Sampled		12/06/17			12/06/17			03/02/18			12/06/17		
Parameter	Units	Field Duplicate (1-1)											
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.38	1.9E-07	8.6E-04	0.33	1.7E-07	7.5E-04	0.19	9.5E-08	4.3E-04	0.32	1.6E-07	7.3E-04
Trichloroethene	UG/M3	0.12	4.0E-08	0.01	0.09	3.0E-08	0.01	0.04	1.3E-08	4.5E-03	ND	NC	NC
Matrix B													
1,1,1-Trichloroethane	UG/M3	0.21	n/a	9.5E-06	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.15	3.2E-09	8.3E-04	0.09	1.9E-09	5.0E-04	0.05	1.1E-09	2.8E-04	0.03	6.4E-10	1.7E-04
Methylene chloride	UG/M3	0.52	4.3E-10	2.0E-04	0.66	5.5E-10	2.5E-04	0.84	7.0E-10	3.2E-04	0.41	3.4E-10	1.6E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	0.66	4.1E-07	0.01	0.77	4.8E-07	0.01	0.61	3.8E-07	4.7E-03	0.37	2.3E-07	0.00
Ethylbenzene	UG/M3	ND	NC	NC	0.4	8.2E-08	9.1E-05	ND	NC	NC	ND	NC	NC
Toluene	UG/M3	1.19	n/a	5.4E-05	1.63	n/a	7.4E-05	0.87	n/a	4.0E-05	0.42	n/a	1.9E-05
m&p-Xylene	UG/M3	ND	n/a	NC	1.35	n/a	3.1E-03	ND	n/a	NC	ND	n/a	NC
o-Xylene	UG/M3	0.24	n/a	5.5E-04	0.44	n/a	1.0E-03	0.2	n/a	4.5E-04	ND	n/a	NC
Cumulative Risk			6.5E-07	0.021		7.6E-07	0.022		4.9E-07	0.011		3.9E-07	0.004
Chlorinated VOCs only			2.3E-07	0.016		2.0E-07	0.012		1.1E-07	0.006		1.6E-07	0.001

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-4

Location ID		TR4-IA-2			TR4-IA-3			TR4-IA-3			TR4-IA-3		
Sample ID		TR4-IA-2			TR4-IA-3			TR4-IA-3			TR4-IA-3		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		03/02/18	Risk	Hazard	12/06/17	Risk	Hazard	03/02/18	Risk	Hazard	1/15/2019	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	0.71	n/a	No value	0.52	n/a	No value	0.15	n/a	No value
Carbon tetrachloride	UG/M3	0.2	1.0E-07	4.5E-04	0.38	1.9E-07	8.6E-04	0.24	1.2E-07	5.5E-04	0.42	2.1E-07	9.5E-04
Trichloroethene	UG/M3	0.06	2.0E-08	6.8E-03	0.53	1.8E-07	6.0E-02	1.78	5.9E-07	2.0E-01	0.28	9.3E-08	3.2E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	1.72	n/a	7.8E-05	2.94	n/a	1.3E-04	0.27	n/a	1.2E-05
Tetrachloroethene	UG/M3	0.09	1.9E-09	5.0E-04	0.09	1.9E-09	5.0E-04	0.38	8.1E-09	2.1E-03	0.11	2.3E-09	6.1E-04
Methylene chloride	UG/M3	1.77	1.5E-09	6.8E-04	0.49	4.1E-10	1.9E-04	3.15	2.6E-09	1.2E-03	0.42	3.5E-10	1.6E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	0.19	2.5E-08	No value	ND	NC	No value	0.052	6.8E-09	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	0.56	n/a	No value	0.15	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	1.02	6.4E-07	0.01	0.63	3.9E-07	0.00	0.68	4.3E-07	0.01	0.69	4.3E-07	0.01
Ethylbenzene	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	0.34	6.9E-08	7.7E-05
Toluene	UG/M3	1.5	n/a	6.8E-05	1.55	n/a	7.0E-05	1.19	n/a	5.4E-05	3.1	n/a	1.4E-04
m&p-Xylene	UG/M3	1.24	n/a	2.8E-03	ND	n/a	NC	ND	n/a	NC	1	n/a	NC
o-Xylene	UG/M3	0.36	n/a	8.2E-04	0.26	n/a	5.9E-04	0.21	n/a	4.8E-04	0.41	n/a	9.3E-04
Cumulative Risk			7.6E-07	0.020		7.9E-07	0.067		1.1E-06	0.212		8.1E-07	0.040
Chlorinated VOCs only			1.2E-07	0.008		3.9E-07	0.062		7.2E-07	0.206		3.1E-07	0.034

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-4

Location ID		TR4-IA-4A			TR4-IA-4B			TR4-IA-4A			TR4-IA-5		
Sample ID		TR4-IA-4A			TR4-IA-4B			TR4-IA-4			TR4-IA-5		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		12/06/17	Risk	Hazard	12/06/17	Risk	Hazard	03/02/18	Risk	Hazard	12/06/17	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.33	1.7E-07	7.5E-04	0.52	2.6E-07	1.2E-03	0.23	1.2E-07	5.2E-04	0.37	1.9E-07	8.4E-04
Trichloroethene	UG/M3	0.31	1.0E-07	3.5E-02	0.29	9.7E-08	3.3E-02	0.42	1.4E-07	4.8E-02	0.1	3.3E-08	1.1E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	1.15	n/a	5.2E-05	0.93	n/a	4.2E-05	4	n/a	1.8E-04	ND	n/a	NC
Tetrachloroethene	UG/M3	0.11	2.3E-09	6.1E-04	0.07	1.5E-09	3.9E-04	0.06	1.3E-09	3.3E-04	0.04	8.5E-10	2.2E-04
Methylene chloride	UG/M3	0.95	7.9E-10	3.7E-04	1.02	8.5E-10	3.9E-04	0.55	4.6E-10	2.1E-04	1.16	9.7E-10	4.5E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	0.09	1.2E-08	No value	0.09	1.2E-08	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	0.29	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	0.56	3.5E-07	4.3E-03	0.46	2.9E-07	3.5E-03	0.51	3.2E-07	3.9E-03	0.72	4.5E-07	5.5E-03
Ethylbenzene	UG/M3	0.43	8.8E-08	9.8E-05	0.47	9.6E-08	1.1E-04	ND	NC	NC	0.8	1.6E-07	1.8E-04
Toluene	UG/M3	3.11	n/a	1.4E-04	2.08	n/a	9.5E-05	2.43	n/a	1.1E-04	2.17	n/a	9.9E-05
m&p-Xylene	UG/M3	1.42	n/a	3.2E-03	1.28	n/a	2.9E-03	ND	n/a	NC	3.35	n/a	7.6E-03
o-Xylene	UG/M3	0.74	n/a	1.7E-03	0.64	n/a	1.5E-03	0.33	n/a	7.5E-04	1.47	n/a	3.3E-03
Cumulative Risk			7.2E-07	0.046		7.5E-07	0.043		5.8E-07	0.054		8.3E-07	0.030
Chlorinated VOCs only			2.8E-07	0.037		3.7E-07	0.035		2.6E-07	0.049		2.2E-07	0.013

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-4

Location ID		TR4-IA-5			TR4-OA-1			TR4-OA-1		
Sample ID		TR4-IA-5			TR4-OA-1			TR4-OA-1		
Matrix		Indoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer
Date Sampled		03/02/18	Risk	Hazard	12/06/17	Risk	Hazard	03/02/18	Risk	Hazard
Parameter	**Units**									
Chlorinated VOCs										
Matrix A										
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	0.01	n/a	1.1E-05
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.23	1.2E-07	5.2E-04	0.25	1.3E-07	5.7E-04	0.25	1.3E-07	5.7E-04
Trichloroethene	UG/M3	0.18	6.0E-08	2.0E-02	0.37	1.2E-07	4.2E-02	0.07	2.3E-08	8.0E-03
Matrix B										
1,1,1-Trichloroethane	UG/M3	0.97	n/a	4.4E-05	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.06	1.3E-09	3.3E-04	0.04	8.5E-10	2.2E-04	ND	NC	NC
Methylene chloride	UG/M3	2.44	2.0E-09	9.4E-04	0.27	2.3E-10	1.0E-04	ND	NC	NC
Matrix C										
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other										
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	0.01	1.3E-09	No value
1,2-Dichloroethene (trans)	UG/M3	0.42	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs										
Benzene	UG/M3	0.58	3.6E-07	4.5E-03	0.41	2.6E-07	3.2E-03	0.51	3.2E-07	3.9E-03
Ethylbenzene	UG/M3	0.58	1.2E-07	1.3E-04	1.57	3.2E-07	3.6E-04	ND	NC	NC
Toluene	UG/M3	4.7	n/a	2.1E-04	1.8	n/a	8.2E-05	ND	n/a	NC
m&p-Xylene	UG/M3	2.51	n/a	5.7E-03	3.45	n/a	7.8E-03	ND	n/a	NC
o-Xylene	UG/M3	1.09	n/a	2.5E-03	1.27	n/a	2.9E-03	ND	n/a	NC
Cumulative Risk			6.6E-07	0.035		8.3E-07	0.057		4.7E-07	0.012
Chlorinated VOCs only			1.8E-07	0.022		2.5E-07	0.043		1.5E-07	0.009

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019
Building TR-7

Location ID		TR7-IA-1			TR7-IA-1			TR7-IA-2			TR7-IA-2		
Sample ID		TR7-IA-1			TR7-IA-1			TR7-IA-2			TR7-IA-2		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		12/08/17	Risk	Hazard	03/08/18	Risk	Hazard	12/08/17	Risk	Hazard	03/08/18	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.29	1.5E-07	6.6E-04	0.31	1.6E-07	7.0E-04	0.16	8.0E-08	3.6E-04	0.25	1.3E-07	5.7E-04
Trichloroethene	UG/M3	0.22	7.3E-08	0.03	0.27	9.0E-08	0.03	0.22	7.3E-08	2.5E-02	0.16	5.3E-08	1.8E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.09	1.9E-09	5.0E-04	0.07	1.5E-09	3.9E-04	0.1	2.1E-09	5.6E-04	ND	NC	NC
Methylene chloride	UG/M3	1.61	1.3E-09	6.2E-04	0.66	5.5E-10	2.5E-04	0.47	3.9E-10	1.8E-04	0.52	4.3E-10	2.0E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	0.04	5.2E-09	No value	0.03	3.9E-09	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	0.74	4.6E-07	0.01	0.8	5.0E-07	0.01	0.88	5.5E-07	0.01	0.61	3.8E-07	4.7E-03
Ethylbenzene	UG/M3	1.45	3.0E-07	3.3E-04	0.43	8.8E-08	9.8E-05	0.59	1.2E-07	1.3E-04	ND	NC	NC
Toluene	UG/M3	2.42	n/a	1.1E-04	1.47	n/a	6.7E-05	1.77	n/a	8.0E-05	1.09	n/a	5.0E-05
m&p-Xylene	UG/M3	4.19	n/a	9.5E-03	1.6	n/a	3.6E-03	2.34	n/a	5.3E-03	1.13	n/a	2.6E-03
o-Xylene	UG/M3	1.54	n/a	3.5E-03	0.87	n/a	2.0E-03	1.01	n/a	2.3E-03	0.39	n/a	8.9E-04
Cumulative Risk			9.8E-07	0.046		8.4E-07	0.044		8.3E-07	0.041		5.6E-07	0.027
Chlorinated VOCs only			2.2E-07	0.027		2.5E-07	0.032		1.6E-07	0.026		1.8E-07	0.019

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019
Building TR-7

Location ID		TR7-IA-3			TR7-IA-3			TR7-IA-3			TR7-IA-4		
Sample ID		TR7-IA-3			TR7-IA-3			TR7-IA-3			FD-180308-2		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air AI	Cancer	Non-Cancer
Date Sampled		12/08/17	Risk	Hazard	03/08/18	Risk	Hazard	1/15/2019	Risk	Hazard	03/08/18	Risk	Hazard
Parameter	Units										Field Duplicate (1-1)		
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	0.16	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.23	1.2E-07	5.2E-04	0.19	9.5E-08	4.3E-04	0.41	2.1E-07	9.3E-04	0.31	1.6E-07	7.0E-04
Trichloroethene	UG/M3	2.08	6.9E-07	2.4E-01	2.53	8.4E-07	2.9E-01	1.1	3.7E-07	1.3E-01	0.38	1.3E-07	4.3E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC	0.034	n/a	1.5E-06	ND	n/a	NC
Tetrachloroethene	UG/M3	0.09	1.9E-09	5.0E-04	0.2	4.3E-09	1.1E-03	0.097	2.1E-09	5.4E-04	0.14	3.0E-09	7.8E-04
Methylene chloride	UG/M3	0.43	3.6E-10	1.7E-04	0.59	4.9E-10	2.3E-04	0.77	6.4E-10	3.0E-04	2.19	1.8E-09	8.4E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	0.036	4.7E-09	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	0.94	5.9E-07	0.01	0.54	3.4E-07	4.2E-03	2.5	1.6E-06	1.9E-02	0.77	4.8E-07	0.01
Ethylbenzene	UG/M3	0.68	1.4E-07	1.5E-04	ND	NC	NC	1.5	3.1E-07	3.4E-04	0.43	8.8E-08	9.8E-05
Toluene	UG/M3	2.21	n/a	1.0E-04	1.09	n/a	5.0E-05	9.9	n/a	4.5E-04	1.77	n/a	8.0E-05
m&p-Xylene	UG/M3	2.53	n/a	5.8E-03	ND	n/a	NC	5.7	n/a	1.3E-02	1.86	n/a	4.2E-03
o-Xylene	UG/M3	1.08	n/a	2.5E-03	0.3	n/a	6.8E-04	1.9	n/a	4.3E-03	1	n/a	2.3E-03
Cumulative Risk			1.5E-06	0.253		1.3E-06	0.294		2.4E-06	0.164		8.6E-07	0.058
Chlorinated VOCs only			8.1E-07	0.238		9.4E-07	0.289		5.8E-07	0.127		2.9E-07	0.046

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019
Building TR-7

Location ID		TR7-IA-4			TR7-IA-5			TR7-IA-6		
Sample ID		TR7-IA-4			TR7-IA-5			TR7-IA-6		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		03/08/18	Risk	Hazard	03/08/18	Risk	Hazard	03/08/18	Risk	Hazard
Parameter	Units									
Chlorinated VOCs										
Matrix A										
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.31	1.6E-07	7.0E-04	0.25	1.3E-07	5.7E-04	0.19	9.5E-08	4.3E-04
Trichloroethene	UG/M3	0.32	1.1E-07	3.6E-02	0.38	1.3E-07	4.3E-02	0.32	1.1E-07	3.6E-02
Matrix B										
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.07	1.5E-09	3.9E-04	0.41	8.7E-09	2.3E-03	0.07	1.5E-09	3.9E-04
Methylene chloride	UG/M3	0.66	5.5E-10	2.5E-04	ND	NC	NC	34.65	2.9E-08	1.3E-02
Matrix C										
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other										
1,1-Dichloroethane	UG/M3	0.04	5.2E-09	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs										
Benzene	UG/M3	0.7	4.4E-07	5.4E-03	0.77	4.8E-07	5.9E-03	1.02	6.4E-07	7.8E-03
Ethylbenzene	UG/M3	0.39	8.0E-08	8.9E-05	ND	NC	NC	1.52	3.1E-07	3.5E-04
Toluene	UG/M3	1.39	n/a	6.3E-05	1.09	n/a	5.0E-05	9.03	n/a	4.1E-04
m&p-Xylene	UG/M3	1.47	n/a	3.3E-03	1.17	n/a	2.7E-03	6.85	n/a	1.6E-02
o-Xylene	UG/M3	0.78	n/a	1.8E-03	0.52	n/a	1.2E-03	1.91	n/a	4.3E-03
Cumulative Risk			7.9E-07	0.048		7.4E-07	0.056		1.2E-06	0.079
Chlorinated VOCs only			2.7E-07	0.038		2.6E-07	0.046		2.3E-07	0.051

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019
Building TR-7

Location ID		TR7-OA-1			TR7-OA-1		
Sample ID		TR7-OA-1			TR7-OA-1		
Matrix		Outdoor Air	Cancer Risk	Non-Cancer Hazard	AA Outdoor Air	Cancer Risk	Non-Cancer Hazard
Date Sampled		12/08/17			03/08/18		
Parameter	Units						
Chlorinated VOCs							
Matrix A							
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.3	1.5E-07	6.8E-04	0.19	9.5E-08	4.3E-04
Trichloroethene	UG/M3	0.09	3.0E-08	1.0E-02	ND	NC	NC
Matrix B							
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	ND	NC	NC	0.14	3.0E-09	7.8E-04
Methylene chloride	UG/M3	ND	NC	NC	1.67	1.4E-09	6.4E-04
Matrix C							
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC
Other							
1,1-Dichloroethane	UG/M3	0.03	3.9E-09	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs							
Benzene	UG/M3	0.52	3.3E-07	4.0E-03	0.54	3.4E-07	4.2E-03
Ethylbenzene	UG/M3	ND	NC	NC	ND	NC	NC
Toluene	UG/M3	0.39	n/a	1.8E-05	0.53	n/a	2.4E-05
m&p-Xylene	UG/M3	ND	n/a	NC	ND	n/a	NC
o-Xylene	UG/M3	ND	n/a	NC	ND	n/a	NC
Cumulative Risk			5.1E-07	0.015		4.4E-07	0.006
Chlorinated VOCs only			1.8E-07	0.011		9.9E-08	0.002

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019, and May 2019
Building TR-8

Location ID		TR8-IA-1			TR8-IA-1			TR8-IA-1			TR8-IA-2			TR8-IA-2		
Sample ID		TR8-IA-1			TR8-IA-1			TR8-IA-1			TR8-IA-2			TR8-IA-2		
Matrix		Indoor Air	Cancer	Non-Cancer	AI Indoor Air	Cancer	Non-Cancer	AI Indoor Air	Cancer	Non-Cancer	AI Indoor Air	Cancer	Non-Cancer	AI Indoor Air	Cancer	Non-Cancer
Date Sampled		12/11/17	Risk	Hazard	03/12/18	Risk	Hazard	1/15/2019	Risk	Hazard	03/12/18	Risk	Hazard	1/15/2019	Risk	Hazard
Parameter	**Units**															
Chlorinated VOCs																
Matrix A																
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	0.31	n/a	3.5E-04	ND	n/a	NC	0.31	n/a	3.5E-04
1,2-Dichloroethene (cis)	UG/M3	4.48	n/a	No value	2.26	n/a	No value	0.9	n/a	No value	ND	n/a	No value	1.2	n/a	No value
Carbon tetrachloride	UG/M3	0.29	1.5E-07	6.6E-04	0.25	1.3E-07	5.7E-04	0.39	2.0E-07	8.9E-04	0.18	9.0E-08	4.1E-04	0.41	2.1E-07	9.3E-04
Trichloroethene	UG/M3	2.72	9.1E-07	0.31	5.7	1.9E-06	0.65	3.2	1.1E-06	0.36	6.02	2.0E-06	6.8E-01	4.3	1.4E-06	4.9E-01
Matrix B																
1,1,1-Trichloroethane	UG/M3	0.79	n/a	3.6E-05	0.87	n/a	4.0E-05	0.49	n/a	2.2E-05	1.27	n/a	5.8E-05	0.67	n/a	3.0E-05
Tetrachloroethene	UG/M3	0.33	7.0E-09	1.8E-03	3.46	7.4E-08	1.9E-02	0.32	6.8E-09	1.8E-03	0.68	1.4E-08	3.8E-03	0.36	7.7E-09	2.0E-03
Methylene chloride	UG/M3	0.67	5.6E-10	2.6E-04	1.04	8.7E-10	4.0E-04	1.1	9.2E-10	4.2E-04	ND	NC	NC	0.46	3.8E-10	1.8E-04
Matrix C																
Vinyl chloride	UG/M3	0.47	1.7E-07	1.1E-03	ND	NC	NC	0.1	3.6E-08	2.3E-04	ND	NC	NC	0.13	4.6E-08	3.0E-04
Other																
1,1-Dichloroethane	UG/M3	0.39	5.1E-08	No value	0.24	3.1E-08	No value	0.3	3.9E-08	No value	0.21	NC	No value	0.41	5.3E-08	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	0.039 J	n/a	No value	ND	n/a	No value	0.041 J	n/a	No value
Non-Chlorinated VOCs																
Benzene	UG/M3	2.09	1.3E-06	1.6E-02	1.34	8.4E-07	1.0E-02	1.2	7.5E-07	9.2E-03	0.76	4.8E-07	0.01	1.3	8.1E-07	0.01
Ethylbenzene	UG/M3	1.91	3.9E-07	4.3E-04	0.69	1.4E-07	1.6E-04	1.1	2.2E-07	2.5E-04	ND	NC	NC	1.2	2.4E-07	2.7E-04
Toluene	UG/M3	10.23	n/a	4.7E-04	2.22	n/a	1.0E-04	3.7	n/a	1.7E-04	0.95	n/a	4.3E-05	3.6	n/a	1.6E-04
m&p-Xylene	UG/M3	7.72	n/a	1.8E-02	3.03	n/a	6.9E-03	4.2	n/a	9.5E-03	ND	n/a	NC	4.9	n/a	1.1E-02
o-Xylene	UG/M3	3.06	n/a	7.0E-03	1.26	n/a	2.9E-03	2.4	n/a	5.5E-03	ND	n/a	NC	3.1	n/a	7.0E-03
Cumulative Risk			3.0E-06	0.35		3.1E-06	0.688		2.3E-06	0.392		2.6E-06	0.694		2.8E-06	0.521
Chlorinated VOCs only			1.3E-06	0.31		2.1E-06	0.668		1.3E-06	0.367		2.1E-06	0.688		1.7E-06	0.492

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019, and May 2019
Building TR-8

Location ID		TR8-IA-3			TR8-IA-3			TR8-IA-4		
Sample ID		TR8-IA-3			TR8-IA-3			TR8-IA-4		
Matrix		AI Indoor Air	Cancer	Non-Cancer	AI Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		03/12/18	Risk	Hazard	1/15/2019	Risk	Hazard	5/1/2019	Risk	Hazard
Parameter	**Units**									
Chlorinated VOCs										
Matrix A										
1,1-Dichloroethene	UG/M3	ND	n/a	NC	0.44	n/a	5.0E-04	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	1.39	n/a	No value	0.75	n/a	No value	0.91	n/a	No value
Carbon tetrachloride	UG/M3	0.19	9.5E-08	4.3E-04	0.42	2.1E-07	9.5E-04	0.41	2.1E-07	9.4E-04
Trichloroethene	UG/M3	5.97	2.0E-06	6.8E-01	2.4	8.0E-07	2.7E-01	3.94	1.3E-06	4.5E-01
Matrix B										
1,1,1-Trichloroethane	UG/M3	0.82	n/a	3.7E-05	0.35	n/a	1.6E-05	0.55	n/a	2.5E-05
Tetrachloroethene	UG/M3	0.27	5.7E-09	1.5E-03	0.37	7.9E-09	2.1E-03	0.40	8.6E-09	2.2E-03
Methylene chloride	UG/M3	0.83	6.9E-10	3.2E-04	0.8	6.7E-10	3.1E-04	0.72	6.0E-10	2.8E-04
Matrix C										
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	0.07	2.4E-08	1.5E-04
Other										
1,1-Dichloroethane	UG/M3	0.16	2.1E-08	No value	0.26	3.4E-08	No value	0.36	4.6E-08	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	0.18	n/a	No value
Non-Chlorinated VOCs										
Benzene	UG/M3	2.17	1.4E-06	0.02	1.9	1.2E-06	0.01	0.53	3.3E-07	0.00
Ethylbenzene	UG/M3	0.78	1.6E-07	1.8E-04	1.4	2.9E-07	3.2E-04	0.76	1.6E-07	1.7E-04
Toluene	UG/M3	4.4	n/a	2.0E-04	6.4	n/a	2.9E-04	2.94	n/a	1.3E-04
m&p-Xylene	UG/M3	3.12	n/a	7.1E-03	5.3	n/a	1.2E-02	2.93	n/a	6.7E-03
o-Xylene	UG/M3	1.13	n/a	2.6E-03	2.3	n/a	5.2E-03	1.95	n/a	4.4E-03
Cumulative Risk			3.6E-06	0.707		2.5E-06	0.309		2.1E-06	0.467
Chlorinated VOCs only			2.1E-06	0.681		1.1E-06	0.277		1.6E-06	0.451

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, January 2019, and May 2019
Building TR-8

Location ID		TR8-IA-5			TR8-IA-6			TR8-IA-6			OA-011519			OA-050119		
Sample ID		TR8-IA-5			TR8-IA-6			FD-IA-050119			OA-011519			OA-050119		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer
Date Sampled		5/1/2019	Risk	Hazard	5/1/2019	Risk	Hazard	5/1/2019	Risk	Hazard	1/15/2019	Risk	Hazard	5/1/2019	Risk	Hazard
Parameter	**Units**							Field Duplicate								
Chlorinated VOCs																
Matrix A																
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	0.70	n/a	No value	0.47	n/a	No value	0.48	n/a	No value	0.032 J	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.41	2.1E-07	9.3E-04	0.40	2.0E-07	9.2E-04	0.41	2.0E-07	9.2E-04	0.41	2.1E-07	9.3E-04	0.39	2.0E-07	8.9E-04
Trichloroethene	UG/M3	2.48	8.3E-07	2.8E-01	1.64	5.5E-07	1.9E-01	1.56	5.2E-07	1.8E-01	0.12	4.0E-08	1.4E-02	ND	NC	NC
Matrix B																
1,1,1-Trichloroethane	UG/M3	0.37	n/a	1.7E-05	0.24	n/a	1.1E-05	0.25	n/a	1.1E-05	0.019	n/a	8.6E-07	ND	n/a	NC
Tetrachloroethene	UG/M3	0.23	4.9E-09	1.3E-03	0.19	4.0E-09	1.1E-03	0.17	3.6E-09	9.3E-04	0.08	1.7E-09	4.4E-04	ND	NC	NC
Methylene chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	9.1	7.6E-09	3.5E-03	0.75	6.3E-10	2.9E-04
Matrix C																
Vinyl chloride	UG/M3	0.07	2.3E-08	1.5E-04	ND	NC	NC	0.05	1.8E-08	1.2E-04	ND	NC	NC	ND	NC	NC
Other																
1,1-Dichloroethane	UG/M3	0.26	3.4E-08	No value	0.18	2.3E-08	No value	0.18	2.4E-08	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	0.18	n/a	No value	0.19	n/a	No value	0.21	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs																
Benzene	UG/M3	0.53	3.3E-07	0.00	0.52	3.2E-07	0.00	0.49	3.1E-07	0.00	0.64	4.0E-07	0.00	0.26	1.7E-07	0.00
Ethylbenzene	UG/M3	0.71	1.5E-07	1.6E-04	0.69	1.4E-07	1.6E-04	0.59	1.2E-07	1.3E-04	0.26	5.3E-08	5.9E-05	ND	NC	NC
Toluene	UG/M3	3.24	n/a	1.5E-04	3.61	n/a	1.6E-04	3.65	n/a	1.7E-04	54	n/a	2.5E-03	0.84	n/a	3.8E-05
m&p-Xylene	UG/M3	2.87	n/a	6.5E-03	2.38	n/a	5.4E-03	2.25	n/a	5.1E-03	0.76	n/a	1.7E-03	ND	n/a	NC
o-Xylene	UG/M3	2.30	n/a	5.2E-03	1.47	n/a	3.3E-03	1.40	n/a	3.2E-03	0.14	n/a	3.2E-04	ND	n/a	NC
Cumulative Risk			1.6E-06	0.300		1.2E-06	0.201		1.2E-06	0.192		7.1E-07	0.028		3.6E-07	0.003
Chlorinated VOCs only			1.1E-06	0.284		7.7E-07	0.188		7.7E-07	0.179		2.5E-07	0.019		2.0E-07	0.001

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-19

Location ID		TR19-OA-1			TR19-OA-1			OA-011619		
Sample ID		TR19-OA-1			TR19-OA-1			OA-011619		
Matrix		Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer
Date Sampled		12/05/17	Risk	Hazard	03/07/18	Risk	Hazard	1/16/2019	Risk	Hazard
Parameter	**Units**									
Chlorinated VOCs										
Matrix A										
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.43	2.2E-07	9.8E-04	0.19	9.5E-08	4.3E-04	0.4	2.0E-07	9.1E-04
Trichloroethene	UG/M3	0.11	3.7E-08	1.3E-02	ND	NC	NC	0.034	1.1E-08	3.9E-03
Matrix B										
1,1,1-Trichloroethane	UG/M3	0.22	n/a	1.0E-05	ND	n/a	NC	0.02	n/a	9.1E-07
Tetrachloroethene	UG/M3	0.06	1.3E-09	3.3E-04	0.07	1.5E-09	3.9E-04	0.058	1.2E-09	3.2E-04
Methylene chloride	UG/M3	0.52	4.3E-10	2.0E-04	ND	NC	NC	0.53	4.4E-10	2.0E-04
Matrix C										
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other										
1,1-Dichloroethane	UG/M3	0.07	9.1E-09	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs										
Benzene	UG/M3	0.41	2.6E-07	3.2E-03	0.83	5.2E-07	6.4E-03	0.44	2.8E-07	3.4E-03
Ethylbenzene	UG/M3	ND	NC	NC	ND	NC	NC	0.1	2.0E-08	2.3E-05
Toluene	UG/M3	0.31	n/a	1.4E-05	0.53	n/a	2.4E-05	1.7	n/a	7.7E-05
m&p-Xylene	UG/M3	ND	n/a	NC	ND	n/a	NC	0.27	n/a	6.1E-04
o-Xylene	UG/M3	ND	n/a	NC	0.17	n/a	3.9E-04	0.098	n/a	2.2E-04
Cumulative Risk			5.2E-07	0.017		6.2E-07	0.008		5.1E-07	0.010
Chlorinated VOCs only			2.6E-07	0.014		9.6E-08	0.001		2.1E-07	0.005

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-20

Location ID		TR20-IA-1			TR20-IA-1			TR20-IA-2			TR20-IA-3		
Sample ID		TR20-IA-1			TR20-IA-1			TR20-IA-2			TR20-IA-3		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		12/04/17	Risk	Hazard	03/06/18	Risk	Hazard	12/04/17	Risk	Hazard	12/04/17	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	0.2	n/a	2.3E-04	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	0.42	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.19	9.5E-08	4.3E-04	0.63	3.2E-07	1.4E-03	0.19	9.5E-08	4.3E-04	0.22	1.1E-07	5.0E-04
Trichloroethene	UG/M3	0.02	6.7E-09	2.3E-03	0.32	1.1E-07	3.6E-02	0.05	1.7E-08	5.7E-03	0.07	2.3E-08	8.0E-03
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	0.87	n/a	4.0E-05	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.04	8.5E-10	2.2E-04	2.2	4.7E-08	1.2E-02	0.07	1.5E-09	3.9E-04	0.08	1.7E-09	4.4E-04
Methylene chloride	UG/M3	0.46	3.8E-10	1.8E-04	0.87	7.3E-10	3.3E-04	0.3	2.5E-10	1.2E-04	0.37	3.1E-10	1.4E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	0.13	4.6E-08	3.0E-04	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	0.24	3.1E-08	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	0.73	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	0.72	4.5E-07	5.5E-03	1.48	9.3E-07	1.1E-02	0.7	4.4E-07	0.01	1.34	8.4E-07	0.01
Ethylbenzene	UG/M3	ND	NC	NC	0.81	1.7E-07	1.8E-04	0.42	8.6E-08	9.5E-05	1.02	2.1E-07	2.3E-04
Toluene	UG/M3	1.03	n/a	4.7E-05	2.38	n/a	1.1E-04	1.06	n/a	4.8E-05	3.19	n/a	1.5E-04
m&p-Xylene	UG/M3	0.83	n/a	1.9E-03	2.48	n/a	5.6E-03	1.14	n/a	2.6E-03	3.97	n/a	9.0E-03
o-Xylene	UG/M3	0.35	n/a	8.0E-04	0.98	n/a	2.2E-03	0.38	n/a	8.6E-04	1.6	n/a	3.6E-03
Cumulative Risk			5.5E-07	0.011		1.6E-06	0.070		6.4E-07	0.016		1.2E-06	0.032
Chlorinated VOCs only			1.0E-07	0.003		5.5E-07	0.051		1.1E-07	0.007		1.4E-07	0.009

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-20

Location ID		TR20-IA-3			TR20-IA-3			TR20-IA-4			TR20-IA-4		
Sample ID		FD-180306-2			TR20-IA-3			TR20-IA-4			TR20-IA-4		
Matrix		Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard	Indoor Air	Cancer Risk	Non-Cancer Hazard
Date Sampled		03/06/18			03/06/18			12/04/17			03/06/18		
Parameter	Units	Field Duplicate (1-1)											
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.25	1.3E-07	5.7E-04	0.25	1.3E-07	5.7E-04	0.2	1.0E-07	4.5E-04	0.25	1.3E-07	5.7E-04
Trichloroethene	UG/M3	0.16	5.3E-08	1.8E-02	0.11	3.7E-08	1.3E-02	0.04	1.3E-08	4.5E-03	0.11	3.7E-08	1.3E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.07	1.5E-09	3.9E-04	ND	NC	NC	0.05	1.1E-09	2.8E-04	0.07	1.5E-09	3.9E-04
Methylene chloride	UG/M3	ND	NC	NC	0.65	5.4E-10	2.5E-04	0.35	2.9E-10	1.3E-04	0.38	3.2E-10	1.5E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	1.53	9.6E-07	1.2E-02	2.13	1.3E-06	1.6E-02	1.16	7.3E-07	8.9E-03	1.88	1.2E-06	1.4E-02
Ethylbenzene	UG/M3	0.65	1.3E-07	1.5E-04	1.06	2.2E-07	2.4E-04	0.88	1.8E-07	2.0E-04	1.04	2.1E-07	2.4E-04
Toluene	UG/M3	3.88	n/a	1.8E-04	5.46	n/a	2.5E-04	2.77	n/a	1.3E-04	5.53	n/a	2.5E-04
m&p-Xylene	UG/M3	2.9	n/a	6.6E-03	4.99	n/a	1.1E-02	3.15	n/a	7.2E-03	4.16	n/a	9.5E-03
o-Xylene	UG/M3	1.04	n/a	2.4E-03	1.67	n/a	3.8E-03	1.26	n/a	2.9E-03	1.69	n/a	3.8E-03
Cumulative Risk			1.3E-06	0.040		1.7E-06	0.045		1.0E-06	0.025		1.6E-06	0.042
Chlorinated VOCs only			1.8E-07	0.019		1.6E-07	0.013		1.1E-07	0.005		1.6E-07	0.014

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-20

Location ID		TR20-IA-5			TR20-IA-5			TR20-IA-6			TR20-IA-6		
Sample ID		TR20-IA-5			TR20-IA-5			TR20-IA-6			TR20-IA-6		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		12/04/17	Risk	Hazard	03/06/18	Risk	Hazard	12/04/17	Risk	Hazard	03/06/18	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.2	1.0E-07	4.5E-04	0.25	1.3E-07	5.7E-04	0.32	1.6E-07	7.3E-04	0.25	1.3E-07	5.7E-04
Trichloroethene	UG/M3	0.2	6.7E-08	2.3E-02	0.11	3.7E-08	1.3E-02	ND	NC	NC	0.11	3.7E-08	1.3E-02
Matrix B													
1,1,1-Trichloroethane	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.07	1.5E-09	3.9E-04	0.2	4.3E-09	1.1E-03	0.04	8.5E-10	2.2E-04	0.41	8.7E-09	2.3E-03
Methylene chloride	UG/M3	0.5	4.2E-10	1.9E-04	ND	NC	NC	0.45	3.8E-10	1.7E-04	2.22	1.9E-09	8.5E-04
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	1.76	1.1E-06	1.4E-02	2.27	1.4E-06	1.7E-02	0.7	4.4E-07	5.4E-03	1.72	1.1E-06	1.3E-02
Ethylbenzene	UG/M3	1.37	2.8E-07	3.1E-04	1.65	3.4E-07	3.8E-04	ND	NC	NC	1.17	2.4E-07	2.7E-04
Toluene	UG/M3	4.4	n/a	2.0E-04	7.83	n/a	3.6E-04	0.74	n/a	3.4E-05	5.46	n/a	2.5E-04
m&p-Xylene	UG/M3	5.12	n/a	1.2E-02	7.59	n/a	1.7E-02	ND	n/a	NC	5.46	n/a	1.2E-02
o-Xylene	UG/M3	2.21	n/a	5.0E-03	2.86	n/a	6.5E-03	ND	n/a	NC	2.08	n/a	4.7E-03
Cumulative Risk			1.5E-06	0.054		1.9E-06	0.056		6.0E-07	0.007		1.5E-06	0.047
Chlorinated VOCs only			1.7E-07	0.024		1.7E-07	0.014		1.6E-07	0.001		1.7E-07	0.016

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-20

Location ID		TR20-IA-7			TR20-IA-8			TR20-IA-9			TR20-IA-10		
Sample ID		TR20-IA-7			TR20-IA-8			TR20-IA-9			TR20-IA-10		
Matrix		Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer	Indoor Air	Cancer	Non-Cancer
Date Sampled		03/06/18	Risk	Hazard	03/06/18	Risk	Hazard	1/17/2019	Risk	Hazard	1/17/2019	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	0.12	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.38	1.9E-07	8.6E-04	0.19	9.5E-08	4.3E-04	0.59	3.0E-07	1.3E-03	0.42	2.1E-07	9.5E-04
Trichloroethene	UG/M3	0.16	5.3E-08	1.8E-02	0.05	1.7E-08	5.7E-03	0.071	2.4E-08	8.1E-03	0.048	1.6E-08	5.5E-03
Matrix B													
1,1,1-Trichloroethane	UG/M3	0.6	n/a	2.7E-05	ND	n/a	NC	0.076	n/a	3.5E-06	0.052	n/a	2.4E-06
Tetrachloroethene	UG/M3	7.32	1.6E-07	4.1E-02	0.07	1.5E-09	3.9E-04	0.084	1.8E-09	4.7E-04	0.088	1.9E-09	4.9E-04
Methylene chloride	UG/M3	0.88	7.3E-10	3.4E-04	ND	NC	NC	ND	NC	NC	2.1	1.8E-09	8.1E-04
Matrix C													
Vinyl chloride	UG/M3	0.05	1.8E-08	1.1E-04	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	0.12	1.6E-08	No value	ND	NC	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	0.42	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	1.7	1.1E-06	1.3E-02	1.61	1.0E-06	1.2E-02	1.7	1.1E-06	1.3E-02	1.2	7.5E-07	9.2E-03
Ethylbenzene	UG/M3	0.7	1.4E-07	1.6E-04	0.73	1.5E-07	1.7E-04	1.1	2.2E-07	2.5E-04	0.97	2.0E-07	2.2E-04
Toluene	UG/M3	2.38	n/a	1.1E-04	4.29	n/a	2.0E-04	18	n/a	8.2E-04	23	n/a	1.0E-03
m&p-Xylene	UG/M3	2.48	n/a	5.6E-03	2.86	n/a	6.5E-03	4.1	n/a	9.3E-03	3.6	n/a	8.2E-03
o-Xylene	UG/M3	1.06	n/a	2.4E-03	0.98	n/a	2.2E-03	1.6	n/a	3.6E-03	1.4	n/a	3.2E-03
Cumulative Risk			1.6E-06	0.082		1.3E-06	0.028		1.6E-06	0.037		1.2E-06	0.030
Chlorinated VOCs only			4.3E-07	0.060		1.1E-07	0.007		3.2E-07	0.010		2.3E-07	0.008

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

TABLE 3
Carrier Site
Thompson Road, Syracuse, NY
Risk Calculations
December 2017, March 2018, and January 2019
Building TR-20

Location ID		TR20-IA-11			TR20-OA-1			TR20-OA-1			OA-011719		
Sample ID		TR20-IA-11			TR20-OA-1			TR20-OA-1			OA-011719		
Matrix		Indoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer	Outdoor Air	Cancer	Non-Cancer
Date Sampled		1/17/2019	Risk	Hazard	12/04/17	Risk	Hazard	03/06/18	Risk	Hazard	1/17/2019	Risk	Hazard
Parameter	**Units**												
Chlorinated VOCs													
Matrix A													
1,1-Dichloroethene	UG/M3	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
1,2-Dichloroethene (cis)	UG/M3	0.031 J	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Carbon tetrachloride	UG/M3	0.4	2.0E-07	9.1E-04	0.35	1.8E-07	8.0E-04	0.25	1.3E-07	5.7E-04	0.62	3.1E-07	1.4E-03
Trichloroethene	UG/M3	0.045	1.5E-08	5.1E-03	0.17	5.7E-08	1.9E-02	ND	NC	NC	0.054	1.8E-08	6.1E-03
Matrix B													
1,1,1-Trichloroethane	UG/M3	0.047	n/a	2.1E-06	ND	n/a	NC	ND	n/a	NC	ND	n/a	NC
Tetrachloroethene	UG/M3	0.082	1.7E-09	4.6E-04	0.12	2.6E-09	6.7E-04	0.07	1.5E-09	3.9E-04	0.048	1.0E-09	2.7E-04
Methylene chloride	UG/M3	ND	NC	NC	0.48	4.0E-10	1.8E-04	0.42	3.5E-10	1.6E-04	ND	NC	NC
Matrix C													
Vinyl chloride	UG/M3	ND	NC	NC	ND	NC	NC	ND	NC	NC	ND	NC	NC
Other													
1,1-Dichloroethane	UG/M3	ND	NC	No value	ND	NC	No value	ND	NC	No value	ND	NC	No value
1,2-Dichloroethene (trans)	UG/M3	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value	ND	n/a	No value
Non-Chlorinated VOCs													
Benzene	UG/M3	1.2	7.5E-07	9.2E-03	0.84	5.3E-07	6.5E-03	0.54	3.4E-07	4.2E-03	0.81	5.1E-07	6.2E-03
Ethylbenzene	UG/M3	1	2.0E-07	2.3E-04	0.52	1.1E-07	1.2E-04	ND	NC	NC	0.12	2.4E-08	2.7E-05
Toluene	UG/M3	23	n/a	1.0E-03	1	n/a	4.5E-05	0.3	n/a	1.4E-05	0.62	n/a	2.8E-05
m&p-Xylene	UG/M3	3.8	n/a	8.6E-03	0.87	n/a	2.0E-03	ND	n/a	NC	0.29	n/a	6.6E-04
o-Xylene	UG/M3	1.4	n/a	3.2E-03	0.35	n/a	8.0E-04	ND	n/a	NC	0.12	n/a	2.7E-04
Cumulative Risk			1.2E-06	0.029		8.7E-07	0.030		4.6E-07	0.005		8.6E-07	0.015
Chlorinated VOCs only			2.2E-07	0.006		2.3E-07	0.021		1.3E-07	0.001		3.3E-07	0.008

Notes:
UG/M3 - micrograms per cubic meter
n/a - not applicable (not a carcinogen)
NC - Not calculated
VOCs - volatile organic compound

Table 4 – Compliance Summary by Building

Building	2017/2018 - Compared to NYSDOH Indoor Air Guideline Values (Table 3.1)	2017/2018 - Indoor Air Below USEPA RSLs?	2017/2018 - Cumulative Indoor Air <1E-05 and HI=1?	2019 - Compared to NYSDOH Indoor Air Guideline Values (Table 3.1)	2019 - Indoor Air Below USEPA RSLs?	2019 - Cumulative Indoor Air <1E-05 and HI=1?
TR-4	✓	✓	✓	✓	✓	✓
TR-5	✓	✓	✓	NS	NS	NS
TR-6A	✓	✓	✓	NS	NS	NS
TR-7	TCE	✓	✓	✓	✓	✓
TR-7A	✓	✓	✓	NS	NS	NS
TR-8	TCE	TCE	✓	TCE	TCE	✓
TR-10	✓	✓	✓	NS	NS	NS
TR-12	✓	✓	✓	NS	NS	NS
TR-19	✓	✓	✓	✓	✓	✓
TR-20	✓	✓	✓	✓	✓	✓
TR-21	✓	✓	✓	NS	NS	NS
SWTP	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

1. Green check marks indicate that entry meets the criterion. Entries in red do not.
2. NS – Not Sampled.
3. HI was not calculated using petroleum related chemicals as the concentrations detected in indoor air are believed to be attributable to above grade sources (e.g., gas powered vehicles observed during sampling) rather than sub-surface sources.
4. New York State Department of Health (NYSDOH) Table 3.1 Air Guideline Values Derived by the NYSDOH
5. HI – Hazard Index, HQ – Hazard Quotient, N/A – not applicable
6. USEPA Regional Screening Levels (RSLs) for cancer risk and non-cancer hazard (µg/m3) for industrial (non-residential) air:

Compound	1E-06	HQ = 1
Trichloroethene	3.0	8.8
cis-1,2-Dichloroethene	No value	No value
Methylene Chloride	1,200	2,600
Carbon Tetrachloride	2.0	440

Figures

N

SANDERS CREEK

CARRIER PKWY

FIRST ST

THOMPSON RD

KINNE ST

VERIZON SERVICE RD

TR-1

TR-2

TR-3

SWTP

A&R

TR-4

TR-5

TR-6

TR-7

TR-7A

TR-6A

TR-8

TR-10

TR-10A

TR-11

TR-12

TR-13

TR-14

TR-18

TR-18S

TR-19

TR-20

TR-21

TR-21A

TR-23

TR4-SSV-1
TR4-IA-1
TR4-OA-1
TR4-SSV-2
TR4-IA-2
TR4-IA-3
TR4-SSV-3
OA-011519
TR4-IA-4
TR4-SSV-4
TR4-SSV-5
TR4-IA-5
TR4-OA-1

TR7-SSV-1
TR7-IA-1
TR7-OA-1
TR7-IA-2
TR7-SSV-2
TR7-SSV-6
TR7-IA-6
TR7-IA-5
TR7-SSV-5
TR7-SSV-4
TR7-IA-4
TR7A-IA-1
TR7A-SSV-1
TR7-IA-3
TR7-SSV-3
TR7A-IA-2
TR7-OA-1
TR7A-SSV-2

TR8-IA-5
TR8-SSV-2
TR8-IA-2
TR8-IA-4
TR8-SSV-1
TR8-IA-1
TR8-IA-6
TR8-SSV-3
TR8-IA-3
OA-050119

OA-011619
TR19-IA-1
TR19-SSV-1
TR19-SSV-2
TR19-IA-2
TR19-SSV-7
TR19-IA-7
TR19-SSV-3
TR19-IA-3
TR19-SSV-4
TR19-IA-4
TR19-SSV-8
TR19-IA-8
TR19-IA-5
TR19-SSV-5
TR19-OA-1
TR19-IA-6
TR19-SSV-6

TR20-IA-1
TR20-SSV-1
TR19-OA-1
TR20-IA-7
TR20-SSV-7
TR20-OA-1
OA-011719
TR20-OA-1
TR20-SSV-3
TR20-IA-3
TR20-IA-8
TR20-SSV-8
TR20-IA-10
TR20-IA-11
TR20-IA-9
TR20-SSV-11
TR20-SSV-9
TR20-SSV-10
TR20-SSV-4
TR20-IA-4
TR20-SSV-5
TR20-IA-5
TR20-SSV-6
TR20-IA-6

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location

Building Status:

- Operating SSDS
- Occupied
- Unoccupied

NOTES: SSDS = Sub-Slab Depressurization System

300 0 300 Feet

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
SAMPLE LOCATIONS

AECOM

FIGURE 1

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\May 2019\SAMPLE LOCATIONS.mxd 6/10/2019

N

TR4-SSV-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	18.93	31.92
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	18.92
Toluene	ND	ND
Trichloroethene	14.78	12.95
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	ND

TR4-IA-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.37	1.02
Carbon tetrachloride	0.32	0.20
Ethylbenzene	ND	ND
Methylene chloride	0.41	1.77
Tetrachloroethene	0.03	0.09
Toluene	0.42	1.50
Trichloroethene	ND	0.06
Vinyl chloride	ND	ND
m&p-Xylene	ND	1.24
o-Xylene	ND	0.36

TR4-IA-3	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	1.72	2.94	0.27
1,1-Dichloroethane	0.19	ND	0.052
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	0.71	0.52	0.15
1,2-Dichloroethene (trans)	ND	0.56	0.15
Benzene	0.63	0.68	0.69
Carbon tetrachloride	0.38	0.24	0.42
Ethylbenzene	ND	ND	0.34
Methylene chloride	0.49	3.15	ND
Tetrachloroethene	0.09	0.38	0.11
Toluene	1.55	1.19	3.1
Trichloroethene	0.53	1.78	0.28
Vinyl chloride	ND	ND	ND
m&p-Xylene	ND	ND	1
o-Xylene	0.26	0.21	0.41

TR4-SSV-3	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	42.61	65.47	41
1,1-Dichloroethane	ND	4.21	5.7
1,1-Dichloroethene	ND	ND	0.56
1,2-Dichloroethene (cis)	11.66	6.78	12
1,2-Dichloroethene (trans)	ND	ND	0.17
Benzene	ND	4.31	0.33
Carbon tetrachloride	ND	ND	0.39
Ethylbenzene	ND	ND	0.13
Methylene chloride	ND	ND	ND
Tetrachloroethene	ND	ND	0.094
Toluene	ND	ND	0.74
Trichloroethene	14.73	25.64	24
Vinyl chloride	ND	ND	0.049
m&p-Xylene	ND	ND	0.42
o-Xylene	ND	ND	0.2

MW-84

TR4-IA-4A	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	1.15	4.0
1,1-Dichloroethane	0.09	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	0.29
Benzene	0.56	0.51
Carbon tetrachloride	0.33	0.23
Ethylbenzene	0.43	ND
Methylene chloride	0.95	0.55
Tetrachloroethene	0.11	0.06
Toluene	3.11	2.43
Trichloroethene	0.31	0.42
Vinyl chloride	ND	ND
m&p-Xylene	1.42	ND
o-Xylene	0.74	0.33

TR4-IA-4B	12/17
VOCs:	
1,1,1-Trichloroethane	0.93
1,1-Dichloroethane	0.09
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.46
Carbon tetrachloride	0.52
Ethylbenzene	0.47
Methylene chloride	1.02
Tetrachloroethene	0.07
Toluene	2.08
Trichloroethene	0.29
Vinyl chloride	ND
m&p-Xylene	1.28
o-Xylene	0.64

TR4-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	0.21	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.77	0.61
Carbon tetrachloride	0.38	0.19
Ethylbenzene	0.40	ND
Methylene chloride	0.66	0.84
Tetrachloroethene	0.15	0.05
Toluene	1.63	0.87
Trichloroethene	0.12	0.04
Vinyl chloride	ND	ND
m&p-Xylene	1.35	ND
o-Xylene	0.44	0.20

TR4-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	40.27	47.69
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	ND	ND
Trichloroethene	85.99	103.19
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	ND

TR4-OA-1	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.41
Carbon tetrachloride	0.25
Ethylbenzene	1.57
Methylene chloride	0.27
Tetrachloroethene	0.04
Toluene	1.80
Trichloroethene	0.37
Vinyl chloride	ND
m&p-Xylene	3.45
o-Xylene	1.27

TR4-SSV-4	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	11.29	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	23.93	ND
Trichloroethene	88.67	64.49
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	ND

TR4-IA-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	0.97
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	0.42
Benzene	0.72	0.58
Carbon tetrachloride	0.37	0.23
Ethylbenzene	0.80	0.58
Methylene chloride	1.16	2.44
Tetrachloroethene	0.04	0.06
Toluene	2.17	4.70
Trichloroethene	0.10	0.18
Vinyl chloride	ND	ND
m&p-Xylene	3.35	2.51
o-Xylene	1.47	1.09

TR4-OA-1	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	0.01
1,1-Dichloroethene	0.01
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.51
Carbon tetrachloride	0.25
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	ND
Trichloroethene	0.07
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR4-SSV-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	83.48	66.56
1,1-Dichloroethane	ND	3.13
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	9.54	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	10.31	2.22
Trichloroethene	67.18	63.42
Vinyl chloride	ND	ND
m&p-Xylene	45.09	6.20
o-Xylene	21.89	3.26

OA-011519	01/19
VOCs:	
1,1,1-Trichloroethane	0.019
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.032
1,2-Dichloroethene (trans)	ND
Benzene	0.64
Carbon tetrachloride	0.41
Ethylbenzene	0.26
Methylene chloride	9.1
Tetrachloroethene	0.08
Toluene	54
Trichloroethene	0.12
Vinyl chloride	ND
m&p-Xylene	0.76
o-Xylene	0.14

SSAS-4
SSAS-11
VMP-1
VMP-2
VMP-3
VMP-4
VMP-5
VMP-6
SSDS-1
SSDS-2
SSDS-3

Approximate Location of SWMU4
Approximate Location of SWMU2
Approximate Location of SWMU1
Approximate Location of SWMU3

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Approximate VMP Location
- Approximate Extraction Point Location
- Historical Sub-Slab/Indoor Air Sample Location
- Approximate Location of Historical SWMU
- Lab
- Office
- Warehouse/Storage
- Other
- Approximate Area of Influence of the Active Sub-Slab Depressurization System
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTES:
- Concentrations shown in micrograms per cubic meter (µg/m^3)
- Crawl space located beneath concrete slab in TR4-SSV-3 area; Sample collected from crawl space air

80 0 80 Feet

TR-4
204,493 SF
350 Occupants

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-4

AECOM

FIGURE 2

J:\Projects\60310231_UTCAOCGRIMISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\January 2019\TR-04.mxd 3/8/2019

TR-7A
16,276 SF

70 Occupants (Combined)

TR-7
13,867 SF

TR7-SSV-4	03/18
VOCs:	
1,1,1-Trichloroethane	7.42
1,1-Dichloroethane	25.63
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	70.58
1,2-Dichloroethene (trans)	1.63
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	5.51
Methylene chloride	ND
Tetrachloroethene	6.58
Toluene	11.18
Trichloroethene	180.04
Vinyl chloride	1.1
m&p-Xylene	15.17
o-Xylene	8.41

TR7-IA-4	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	0.04
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.77
Carbon tetrachloride	0.31
Ethylbenzene	0.43
Methylene chloride	2.19
Tetrachloroethene	0.14
Toluene	1.77
Trichloroethene	0.38
Vinyl chloride	ND
m&p-Xylene	1.86
o-Xylene	1

TR7A-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.54	0.38
Carbon tetrachloride	0.3	0.25
Ethylbenzene	1.34	ND
Methylene chloride	0.73	0.59
Tetrachloroethene	0.26	0.07
Toluene	1.35	0.49
Trichloroethene	0.42	0.05
Vinyl chloride	ND	ND
m&p-Xylene	5.03	1.17
o-Xylene	2.39	0.74

TR7A-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	23.6	27.77
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	1.83
Methylene chloride	ND	ND
Tetrachloroethene	ND	5.29
Toluene	ND	1.99
Trichloroethene	21	ND
Vinyl chloride	ND	ND
m&p-Xylene	23.2	5.46
o-Xylene	ND	ND

TR7A-IA-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.71	0.57
Carbon tetrachloride	0.31	0.25
Ethylbenzene	ND	ND
Methylene chloride	3.85	ND
Tetrachloroethene	0.07	0.14
Toluene	0.71	ND
Trichloroethene	ND	0.05
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	0.26

TR7A-SSV-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	74.2	45.78
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	51.6	20.07
Methylene chloride	ND	ND
Tetrachloroethene	ND	6.05
Toluene	9.14	3.17
Trichloroethene	100	182.72
Vinyl chloride	ND	ND
m&p-Xylene	156	59.83
o-Xylene	24.2	10.67

TR7-OA-1	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	0.03
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.52
Carbon tetrachloride	0.3
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	0.39
Trichloroethene	0.09
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR7-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	0.04
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.74	0.8
Carbon tetrachloride	0.29	0.31
Ethylbenzene	1.45	0.43
Methylene chloride	1.61	0.66
Tetrachloroethene	0.09	0.07
Toluene	2.42	1.47
Trichloroethene	0.22	0.27
Vinyl chloride	ND	ND
m&p-Xylene	4.19	1.6
o-Xylene	1.54	0.87

TR7-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	21.3	16.2
1,1-Dichloroethane	8.99	19.72
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	22.84	44.81
1,2-Dichloroethene (trans)	ND	ND
Benzene	7.91	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	10.06
Methylene chloride	ND	ND
Tetrachloroethene	ND	8.27
Toluene	19.4	53.06
Trichloroethene	105	242.92
Vinyl chloride	ND	ND
m&p-Xylene	22.7	32
o-Xylene	15.43	31.65

TR7-IA-3	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	0.034
1,1-Dichloroethane	ND	ND	0.036
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	0.16
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	0.94	0.54	2.5
Carbon tetrachloride	0.23	0.19	0.41
Ethylbenzene	0.68	ND	1.5
Methylene chloride	0.43	0.59	ND
Tetrachloroethene	0.09	0.2	0.097
Toluene	2.21	1.09	9.9
Trichloroethene	2.08	2.53	1.1
Vinyl chloride	ND	ND	0.024
m&p-Xylene	2.53	ND	5.7
o-Xylene	1.08	0.3	1.9

TR7-SSV-3	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	1.52	1.3
1,1-Dichloroethane	ND	ND	0.34
1,1-Dichloroethene	ND	ND	0.1
1,2-Dichloroethene (cis)	ND	ND	0.48
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	ND	ND	3
Carbon tetrachloride	ND	ND	0.31
Ethylbenzene	ND	ND	2.2
Methylene chloride	ND	ND	ND
Tetrachloroethene	ND	ND	0.42
Toluene	24.6	4.4	9.8
Trichloroethene	25.2	13.11	80
Vinyl chloride	ND	ND	0.53
m&p-Xylene	31.1	7.98	11
o-Xylene	11.8	3.5	4.5

TR7-SSV-5	03/18
VOCs:	
1,1,1-Trichloroethane	4.46
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	114.6
Toluene	5.31
Trichloroethene	10.1
Vinyl chloride	ND
m&p-Xylene	7.59
o-Xylene	2.81

OA-011519	01/19
VOCs:	
1,1,1-Trichloroethane	0.019
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.032
1,2-Dichloroethene (trans)	ND
Benzene	0.64
Carbon tetrachloride	0.41
Ethylbenzene	0.26
Methylene chloride	9.1
Tetrachloroethene	0.08
Toluene	54
Trichloroethene	0.12
Vinyl chloride	ND
m&p-Xylene	0.76
o-Xylene	0.14

TR7-IA-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	0.03	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.88	0.61
Carbon tetrachloride	0.16	0.25
Ethylbenzene	0.59	ND
Methylene chloride	0.47	0.52
Tetrachloroethene	0.1	ND
Toluene	1.77	1.09
Trichloroethene	0.22	0.16
Vinyl chloride	ND	ND
m&p-Xylene	2.34	1.13
o-Xylene	1.01	0.39

TR7-SSV-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	27	20.13
1,1-Dichloroethane	ND	1.66
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	1220	494.23
Methylene chloride	ND	ND
Tetrachloroethene	ND	3.12
Toluene	17.2	18.59
Trichloroethene	20.4	14.51
Vinyl chloride	ND	ND
m&p-Xylene	6330	2150.35
o-Xylene	3050	1088.18

TR7-OA-1	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.54
Carbon tetrachloride	0.19
Ethylbenzene	ND
Methylene chloride	1.67
Tetrachloroethene	0.14
Toluene	0.53
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR7-SSV-6	03/18
VOCs:	
1,1,1-Trichloroethane	6.87
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	17.12
Methylene chloride	ND
Tetrachloroethene	4.31
Toluene	42.52
Trichloroethene	52.13
Vinyl chloride	ND
m&p-Xylene	70.67
o-Xylene	28.27

TR7-IA-6	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.02
Carbon tetrachloride	0.19
Ethylbenzene	1.52
Methylene chloride	34.65
Tetrachloroethene	0.07
Toluene	9.03
Trichloroethene	0.32
Vinyl chloride	ND
m&p-Xylene	6.85
o-Xylene	1.91

TR7-IA-5	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.77
Carbon tetrachloride	0.25
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	0.41
Toluene	1.09
Trichloroethene	0.38
Vinyl chloride	ND
m&p-Xylene	1.17
o-Xylene	0.52

MW-69

MW-22D

MW-09

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Lab
- Office
- Warehouse/Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTES:
- Concentrations shown in micrograms per cubic meter ($\mu g/m^3$)
- The corresponding outdoor air sample for 01/19 data, OA-011519, does not fall on this figure

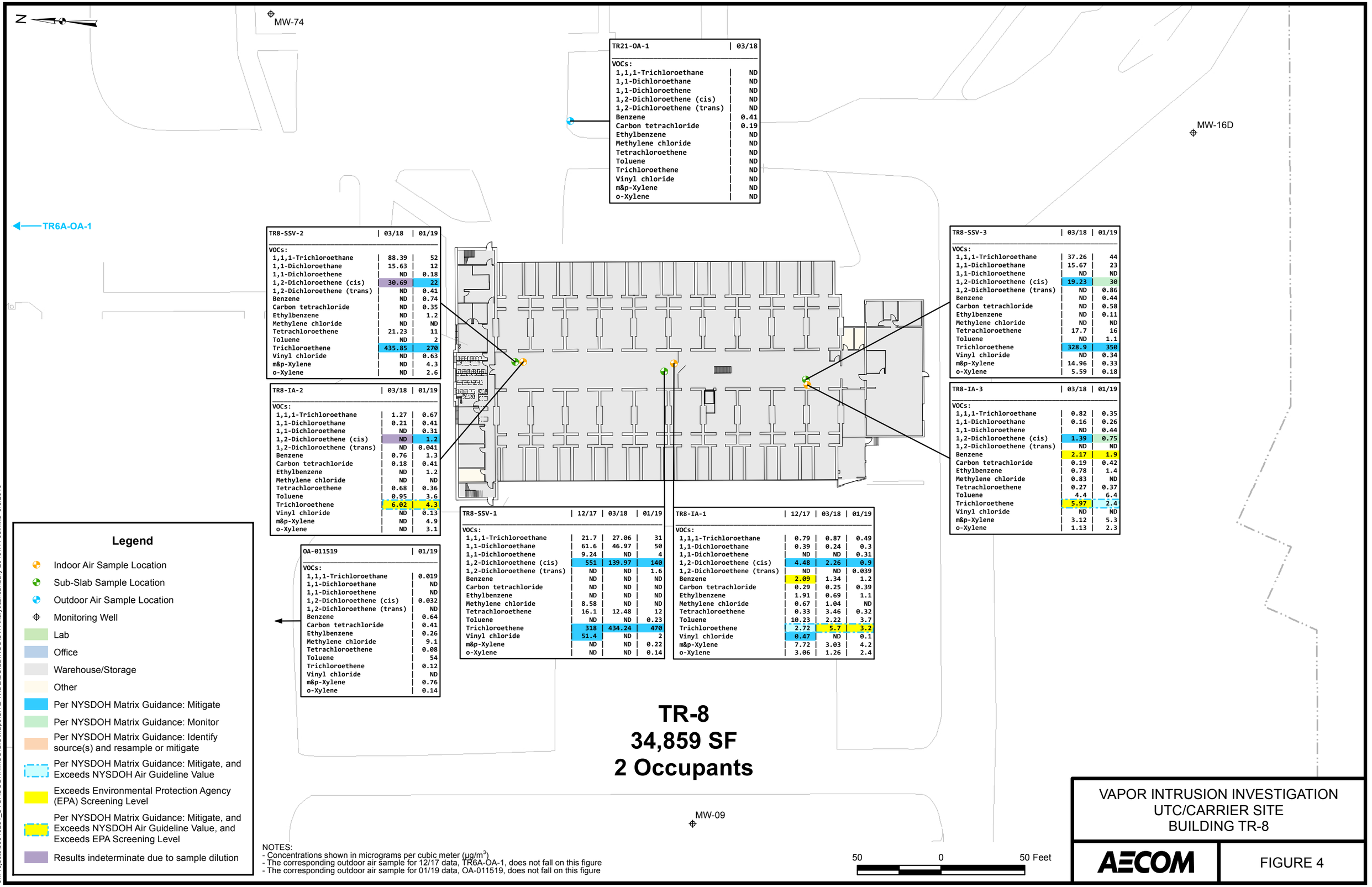
50 0 50 Feet

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-7 & TR-7A

AECOM

FIGURE 3

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\January 2019\TR-07 & TR-07A.mxd 3/8/2019


N
MW-74
MW-16D
TR6A-OA-1
MW-09
TR21-OA-1 | 03/18
VOCs:
1,1,1-Trichloroethane | ND
1,1-Dichloroethane | ND
1,1-Dichloroethene | ND
1,2-Dichloroethene (cis) | ND
1,2-Dichloroethene (trans) | ND
Benzene | 0.41
Carbon tetrachloride | 0.19
Ethylbenzene | ND
Methylene chloride | ND
Tetrachloroethene | ND
Toluene | ND
Trichloroethene | ND
Vinyl chloride | ND
m&p-Xylene | ND
o-Xylene | ND
TR8-SSV-2 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 88.39 | 52
1,1-Dichloroethane | 15.63 | 12
1,1-Dichloroethene | ND | 0.18
1,2-Dichloroethene (cis) | 30.69 | 22
1,2-Dichloroethene (trans) | ND | 0.41
Benzene | ND | 0.74
Carbon tetrachloride | ND | 0.35
Ethylbenzene | ND | 1.2
Methylene chloride | ND | ND
Tetrachloroethene | 21.23 | 11
Toluene | ND | 2
Trichloroethene | 435.85 | 270
Vinyl chloride | ND | 0.63
m&p-Xylene | ND | 4.3
o-Xylene | ND | 2.6
TR8-IA-2 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 1.27 | 0.67
1,1-Dichloroethane | 0.21 | 0.41
1,1-Dichloroethene | ND | 0.31
1,2-Dichloroethene (cis) | ND | 1.2
1,2-Dichloroethene (trans) | ND | 0.041
Benzene | 0.76 | 1.3
Carbon tetrachloride | 0.18 | 0.41
Ethylbenzene | ND | 1.2
Methylene chloride | ND | ND
Tetrachloroethene | 0.68 | 0.36
Toluene | 0.95 | 3.6
Trichloroethene | 6.02 | 4.3
Vinyl chloride | ND | 0.13
m&p-Xylene | ND | 4.9
o-Xylene | ND | 3.1
OA-011519 | 01/19
VOCs:
1,1,1-Trichloroethane | 0.019
1,1-Dichloroethane | ND
1,1-Dichloroethene | ND
1,2-Dichloroethene (cis) | 0.032
1,2-Dichloroethene (trans) | ND
Benzene | 0.64
Carbon tetrachloride | 0.41
Ethylbenzene | 0.26
Methylene chloride | 9.1
Tetrachloroethene | 0.08
Toluene | 54
Trichloroethene | 0.12
Vinyl chloride | ND
m&p-Xylene | 0.76
o-Xylene | 0.14
TR8-SSV-1 | 12/17 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 21.7 | 27.06 | 31
1,1-Dichloroethane | 61.6 | 46.97 | 50
1,1-Dichloroethene | 9.24 | ND | 4
1,2-Dichloroethene (cis) | 551 | 139.97 | 140
1,2-Dichloroethene (trans) | ND | ND | 1.6
Benzene | ND | ND | ND
Carbon tetrachloride | ND | ND | ND
Ethylbenzene | ND | ND | ND
Methylene chloride | 8.58 | ND | ND
Tetrachloroethene | 16.1 | 12.48 | 12
Toluene | ND | ND | 0.23
Trichloroethene | 318 | 434.24 | 470
Vinyl chloride | 51.4 | ND | 2
m&p-Xylene | ND | ND | 0.22
o-Xylene | ND | ND | 0.14
TR8-IA-1 | 12/17 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 0.79 | 0.87 | 0.49
1,1-Dichloroethane | 0.39 | 0.24 | 0.3
1,1-Dichloroethene | ND | ND | 0.31
1,2-Dichloroethene (cis) | 4.48 | 2.26 | 0.9
1,2-Dichloroethene (trans) | ND | ND | 0.039
Benzene | 2.09 | 1.34 | 1.2
Carbon tetrachloride | 0.29 | 0.25 | 0.39
Ethylbenzene | 1.91 | 0.69 | 1.1
Methylene chloride | 0.67 | 1.04 | ND
Tetrachloroethene | 0.33 | 3.46 | 0.32
Toluene | 10.23 | 2.22 | 3.7
Trichloroethene | 2.72 | 5.7 | 3.2
Vinyl chloride | 0.47 | ND | 0.1
m&p-Xylene | 7.72 | 3.03 | 4.2
o-Xylene | 3.06 | 1.26 | 2.4
TR8-SSV-3 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 37.26 | 44
1,1-Dichloroethane | 15.67 | 23
1,1-Dichloroethene | ND | ND
1,2-Dichloroethene (cis) | 19.23 | 30
1,2-Dichloroethene (trans) | ND | 0.86
Benzene | ND | 0.44
Carbon tetrachloride | ND | 0.58
Ethylbenzene | ND | 0.11
Methylene chloride | ND | ND
Tetrachloroethene | 17.7 | 16
Toluene | ND | 1.1
Trichloroethene | 328.9 | 350
Vinyl chloride | ND | 0.34
m&p-Xylene | 14.96 | 0.33
o-Xylene | 5.59 | 0.18
TR8-IA-3 | 03/18 | 01/19
VOCs:
1,1,1-Trichloroethane | 0.82 | 0.35
1,1-Dichloroethane | 0.16 | 0.26
1,1-Dichloroethene | ND | 0.44
1,2-Dichloroethene (cis) | 1.39 | 0.75
1,2-Dichloroethene (trans) | ND | ND
Benzene | 2.17 | 1.9
Carbon tetrachloride | 0.19 | 0.42
Ethylbenzene | 0.78 | 1.4
Methylene chloride | 0.83 | ND
Tetrachloroethene | 0.27 | 0.37
Toluene | 4.4 | 6.4
Trichloroethene | 5.97 | 2.4
Vinyl chloride | ND | ND
m&p-Xylene | 3.12 | 5.3
o-Xylene | 1.13 | 2.3
TR-8
34,859 SF
2 Occupants
Legend
Indoor Air Sample Location
Sub-Slab Sample Location
Outdoor Air Sample Location
Monitoring Well
Lab
Office
Warehouse/Storage
Other
Per NYSDOH Matrix Guidance: Mitigate
Per NYSDOH Matrix Guidance: Monitor
Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
Exceeds Environmental Protection Agency (EPA) Screening Level
Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
Results indeterminate due to sample dilution
NOTES:
- Concentrations shown in micrograms per cubic meter (µg/m3)
- The corresponding outdoor air sample for 12/17 data, TR6A-OA-1, does not fall on this figure
- The corresponding outdoor air sample for 01/19 data, OA-011519, does not fall on this figure
50 0 50 Feet
VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-8
AECOM
FIGURE 4
J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\January 2019\TR-08.mxd 3/8/2019

N

MW-74

MW-16D

TR8-IA-4	05/19
VOCs:	
1,1,1-Trichloroethane	0.55
1,1-Dichloroethane	0.36
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.91
1,2-Dichloroethene (trans)	0.18
Benzene	0.53
Carbon tetrachloride	0.41
Ethylbenzene	0.76
Methylene chloride	0.72
Tetrachloroethene	0.40
Toluene	2.94
Trichloroethene	3.94
Vinyl chloride	0.07
m&p-Xylene	2.93
o-Xylene	1.95

TR8-IA-5	05/19
VOCs:	
1,1,1-Trichloroethane	0.37
1,1-Dichloroethane	0.26
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.70
1,2-Dichloroethene (trans)	0.18
Benzene	0.53
Carbon tetrachloride	0.41
Ethylbenzene	0.71
Methylene chloride	ND
Tetrachloroethene	0.23
Toluene	3.24
Trichloroethene	2.48
Vinyl chloride	0.07
m&p-Xylene	2.87
o-Xylene	2.30

OA-050119	05/19
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.26
Carbon tetrachloride	0.39
Ethylbenzene	ND
Methylene chloride	0.75
Tetrachloroethene	ND
Toluene	0.84
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR8-IA-6	05/19
VOCs:	
1,1,1-Trichloroethane	0.25
1,1-Dichloroethane	0.18
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.48
1,2-Dichloroethene (trans)	0.21
Benzene	0.52
Carbon tetrachloride	0.41
Ethylbenzene	0.69
Methylene chloride	ND
Tetrachloroethene	0.19
Toluene	3.65
Trichloroethene	1.64
Vinyl chloride	0.05
m&p-Xylene	2.38
o-Xylene	1.47

TR-8
34,859 SF
2 Occupants

MW-09

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Lab
- Office
- Warehouse/Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTE:
Concentrations shown in micrograms per cubic meter ($\mu g/m^3$)

50 0 50 Feet

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-8 (SECOND FLOOR)

AECOM

FIGURE 4A

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\May 2019\TR-08 (2nd FLOOR).mxd 6/10/2019

N

TR19-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.53	0.70
Carbon tetrachloride	0.27	0.19
Ethylbenzene	0.42	ND
Methylene chloride	0.47	3.19
Tetrachloroethene	ND	0.07
Toluene	0.99	1.17
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	0.95	1.04
o-Xylene	0.33	0.56

TR19-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	8.78	9.33
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	ND	2.14
Trichloroethene	ND	2.42
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	ND

TR19-SSV-7	03/18
VOCs:	
1,1,1-Trichloroethane	18.5
1,1-Dichloroethane	1.46
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	2.78
1,2-Dichloroethene (trans)	ND
Benzene	11.52
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	64.9
Toluene	5.83
Trichloroethene	521.3
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR19-IA-7	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	1.19
Benzene	0.70
Carbon tetrachloride	0.19
Ethylbenzene	ND
Methylene chloride	0.52
Tetrachloroethene	0.27
Toluene	0.79
Trichloroethene	0.21
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	0.48

TR19-SSV-4	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	0.2
1,1-Dichloroethane	ND	ND	0.13
1,1-Dichloroethene	ND	2.14	0.55
1,2-Dichloroethene (cis)	274	463.93	100
1,2-Dichloroethene (trans)	44.01	93.58	24
Benzene	ND	ND	1.7
Carbon tetrachloride	ND	ND	ND
Ethylbenzene	114.02	5.42	12
Methylene chloride	ND	ND	ND
Tetrachloroethene	23.46	48.15	17
Toluene	14.19	1.99	12
Trichloroethene	221.42	254.2	110
Vinyl chloride	6.21	11.43	3.7
m&p-Xylene	780.37	36.72	80
o-Xylene	550.59	27.83	63

TR19-IA-4	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	ND
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	1.21	2.04	1.8
Carbon tetrachloride	0.29	0.25	0.41
Ethylbenzene	0.62	1.78	1.4
Methylene chloride	0.32	0.59	ND
Tetrachloroethene	ND	0.07	0.099
Toluene	2.64	5.91	25
Trichloroethene	ND	0.05	0.047
Vinyl chloride	ND	ND	ND
m&p-Xylene	2.36	8.76	5.5
o-Xylene	1.3	3.99	2.2

TR19-IA-6	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	0.29	ND	0.023
1,1-Dichloroethane	0.09	ND	ND
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	0.084
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	0.99	2.04	1.1
Carbon tetrachloride	0.42	0.19	0.4
Ethylbenzene	ND	1.13	0.78
Methylene chloride	0.65	0.69	2.4
Tetrachloroethene	0.08	0.07	0.11
Toluene	1.11	4.85	12
Trichloroethene	ND	ND	0.3
Vinyl chloride	ND	ND	ND
m&p-Xylene	1.05	5.16	2.8
o-Xylene	0.5	2.3	1.1

TR19-OA-1	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.83
Carbon tetrachloride	0.19
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	0.07
Toluene	0.53
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	0.17

TR19-IA-2	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	0.024
1,1-Dichloroethane	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	ND
1,2-Dichloroethene (trans)	ND	ND	0.053
Benzene	1.23	1.85	2
Carbon tetrachloride	0.26	0.25	0.41
Ethylbenzene	1.05	1.34	2.4
Methylene chloride	0.42	0.87	ND
Tetrachloroethene	0.25	0.61	0.7
Toluene	3.36	4.33	20
Trichloroethene	1.54	0.16	0.08
Vinyl chloride	ND	ND	ND
m&p-Xylene	4.64	6.03	8.7
o-Xylene	2.15	2.82	3.3

TR19-SSV-2	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	0.27
1,1-Dichloroethane	ND	ND	0.16
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	ND
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	ND	ND	2.9
Carbon tetrachloride	ND	ND	ND
Ethylbenzene	ND	ND	3.8
Methylene chloride	ND	2.19	ND
Tetrachloroethene	ND	2.37	1.4
Toluene	ND	1.77	13
Trichloroethene	ND	2.42	0.79
Vinyl chloride	ND	ND	0.68
m&p-Xylene	ND	6.33	16
o-Xylene	ND	4.12	6.7

OA-011619	01/19
VOCs:	
1,1,1-Trichloroethane	0.02
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.44
Carbon tetrachloride	0.4
Ethylbenzene	0.1
Methylene chloride	0.53
Tetrachloroethene	0.058
Toluene	1.7
Trichloroethene	0.034
Vinyl chloride	ND
m&p-Xylene	0.27
o-Xylene	0.098

TR19-SSV-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	2.73
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	37.01
Carbon tetrachloride	ND	ND
Ethylbenzene	11.97	11.49
Methylene chloride	ND	1.70
Tetrachloroethene	ND	10.65
Toluene	ND	194.91
Trichloroethene	26.12	69.33
Vinyl chloride	ND	ND
m&p-Xylene	76.74	52.02
o-Xylene	18.34	15.17

TR19-IA-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.43	0.62
Carbon tetrachloride	0.28	0.19
Ethylbenzene	1.66	ND
Methylene chloride	1.53	0.44
Tetrachloroethene	0.49	0.14
Toluene	4.03	0.33
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	4.81	ND
o-Xylene	2.05	ND

TR19-OA-1	12/17
VOCs:	
1,1,1-Trichloroethane	0.22
1,1-Dichloroethane	0.07
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.41
Carbon tetrachloride	0.43
Ethylbenzene	ND
Methylene chloride	0.52
Tetrachloroethene	0.06
Toluene	0.31
Trichloroethene	0.11
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR19-SSV-8	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.91
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	2.97
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR19-IA-8	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.51
Carbon tetrachloride	0.19
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	0.07
Toluene	0.53
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR19-SSV-6	12/17	03/18	01/19
VOCs:			
1,1,1-Trichloroethane	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND
1,2-Dichloroethene (cis)	ND	ND	ND
1,2-Dichloroethene (trans)	ND	ND	ND
Benzene	ND	ND	ND
Carbon tetrachloride	ND	ND	ND
Ethylbenzene	ND	6.46	0.8
Methylene chloride	ND	1.63	ND
Tetrachloroethene	ND	ND	0.26
Toluene	12.34	4.59	12
Trichloroethene	ND	ND	0.24
Vinyl chloride	ND	ND	0.42
m&p-Xylene	ND	38.11	3.2
o-Xylene	ND	22.07	1.2

TR19-SSV-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	7.72
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	ND	22.65
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	ND	19.47
o-Xylene	ND	6.85

TR19-IA-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	0.65	ND
1,1-Dichloroethane	0.29	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.73	1.56
Carbon tetrachloride	0.38	0.19
Ethylbenzene	0.82	0.61
Methylene chloride	0.58	1.81
Tetrachloroethene	0.08	ND
Toluene	1.55	2.78
Trichloroethene	0.53	ND
Vinyl chloride	ND	ND
m&p-Xylene	2.29	2.43
o-Xylene	0.88	1.34

MW-82
MW-83
MW-81
MW-75

Approximate Area of Former Degreaser

Approximate Location of SWMU14
Wet Paint Booths

Approximate Location of SWMU12
Satellite Accumulation Areas

TR-19
334,240 SF
146 Occupants

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Approximate Location of Historical SWMU
- Former Degreaser Location
- Lab
- Office
- Warehouse/Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTE:
- Concentrations shown in micrograms per cubic meter (µg/m^3)

110 0 110 Feet

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-19

AECOM

FIGURE 5

J:\Projects\60310231_UTCAOCGRIMISC\GIS\Maps\SITE-WIDE\BUILDINGS\SVI Analytical\January 2019\TR-19.mxd 3/8/2019

N

TR-20
446,515 SF
180 Occupants

KINNE ST

SVS-1

SVS-2

Property Line

MW-76

MW-77

MW-78

MW-82

DEPRESSED LOADING DOCK

TR20-OA-1	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.54
Carbon tetrachloride	0.25
Ethylbenzene	ND
Methylene chloride	0.42
Tetrachloroethene	0.07
Toluene	0.3
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

OA-011719	01/19
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.81
Carbon tetrachloride	0.62
Ethylbenzene	0.12
Methylene chloride	ND
Tetrachloroethene	0.048
Toluene	0.62
Trichloroethene	0.054
Vinyl chloride	ND
m&p-Xylene	0.29
o-Xylene	0.12

TR20-OA-1	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.84
Carbon tetrachloride	0.35
Ethylbenzene	0.52
Methylene chloride	0.48
Tetrachloroethene	0.12
Toluene	1
Trichloroethene	0.17
Vinyl chloride	ND
m&p-Xylene	0.87
o-Xylene	0.35

TR20-IA-8	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.61
Carbon tetrachloride	0.19
Ethylbenzene	0.73
Methylene chloride	ND
Tetrachloroethene	0.07
Toluene	4.29
Trichloroethene	0.05
Vinyl chloride	ND
m&p-Xylene	2.86
o-Xylene	0.98

TR20-SSV-8	03/18
VOCs:	
1,1,1-Trichloroethane	5.67
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	2.23
Carbon tetrachloride	ND
Ethylbenzene	6.98
Methylene chloride	ND
Tetrachloroethene	2.37
Toluene	5.68
Trichloroethene	6.13
Vinyl chloride	ND
m&p-Xylene	23.97
o-Xylene	6.42

TR20-SSV-4	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	2.24
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	1.66
Carbon tetrachloride	ND	ND
Ethylbenzene	49	30.48
Methylene chloride	ND	ND
Tetrachloroethene	2.83	ND
Toluene	26.1	5.68
Trichloroethene	ND	7.79
Vinyl chloride	ND	ND
m&p-Xylene	249	159.54
o-Xylene	85.8	77.17

TR20-IA-4	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.16	1.88
Carbon tetrachloride	0.2	0.25
Ethylbenzene	0.88	1.04
Methylene chloride	0.35	0.38
Tetrachloroethene	0.05	0.07
Toluene	2.77	5.53
Trichloroethene	0.04	0.11
Vinyl chloride	ND	ND
m&p-Xylene	3.15	4.16
o-Xylene	1.26	1.69

TR20-IA-11	01/19
VOCs:	
1,1,1-Trichloroethane	0.047
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.031
1,2-Dichloroethene (trans)	ND
Benzene	1.2
Carbon tetrachloride	0.4
Ethylbenzene	1
Methylene chloride	ND
Tetrachloroethene	0.082
Toluene	23
Trichloroethene	0.045
Vinyl chloride	ND
m&p-Xylene	3.8
o-Xylene	1.4

TR20-SSV-11	01/19
VOCs:	
1,1,1-Trichloroethane	0.047
1,1-Dichloroethane	0.033
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.76
Carbon tetrachloride	0.21
Ethylbenzene	1.9
Methylene chloride	ND
Tetrachloroethene	0.1
Toluene	3.1
Trichloroethene	0.36
Vinyl chloride	0.36
m&p-Xylene	13
o-Xylene	6.5

TR20-SSV-2	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	ND
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR20-IA-2	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.7
Carbon tetrachloride	0.19
Ethylbenzene	0.42
Methylene chloride	0.3
Tetrachloroethene	0.07
Toluene	1.06
Trichloroethene	0.05
Vinyl chloride	ND
m&p-Xylene	1.14
o-Xylene	0.38

TR20-IA-7	03/18
VOCs:	
1,1,1-Trichloroethane	0.6
1,1-Dichloroethane	0.12
1,1-Dichloroethene	0.12
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	0.42
Benzene	1.7
Carbon tetrachloride	0.38
Ethylbenzene	0.7
Methylene chloride	0.88
Tetrachloroethene	7.32
Toluene	2.38
Trichloroethene	0.16
Vinyl chloride	0.05
m&p-Xylene	2.48
o-Xylene	1.06

TR20-SSV-7	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	3.93
Toluene	ND
Trichloroethene	8.81
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR20-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	0.87
1,1-Dichloroethane	ND	0.24
1,1-Dichloroethene	ND	0.2
1,2-Dichloroethene (cis)	ND	0.42
1,2-Dichloroethene (trans)	ND	0.73
Benzene	0.72	1.48
Carbon tetrachloride	0.19	0.63
Ethylbenzene	ND	0.81
Methylene chloride	0.46	0.87
Tetrachloroethene	0.04	2.2
Toluene	1.03	2.38
Trichloroethene	0.02	0.32
Vinyl chloride	ND	0.13
m&p-Xylene	0.83	2.48
o-Xylene	0.35	0.98

TR20-IA-10	01/19
VOCs:	
1,1,1-Trichloroethane	0.052
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.2
Carbon tetrachloride	0.42
Ethylbenzene	0.97
Methylene chloride	2.1
Tetrachloroethene	0.088
Toluene	23
Trichloroethene	0.048
Vinyl chloride	ND
m&p-Xylene	3.6
o-Xylene	1.4

TR20-SSV-10	01/19
VOCs:	
1,1,1-Trichloroethane	0.027
1,1-Dichloroethane	0.02
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.64
Carbon tetrachloride	0.37
Ethylbenzene	0.17
Methylene chloride	1.5
Tetrachloroethene	0.072
Toluene	3
Trichloroethene	0.28
Vinyl chloride	0.24
m&p-Xylene	1
o-Xylene	0.25

TR20-SSV-6	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	14.9	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	131	7.07
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	21	2.93
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	633	36.89
o-Xylene	512	31.95

TR20-IA-6	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.7	1.72
Carbon tetrachloride	0.32	0.25
Ethylbenzene	ND	1.17
Methylene chloride	0.45	2.22
Tetrachloroethene	0.04	0.41
Toluene	0.74	5.46
Trichloroethene	ND	0.11
Vinyl chloride	ND	ND
m&p-Xylene	ND	5.46
o-Xylene	ND	2.08

TR20-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	15.06	14.46
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	2.53	ND
Tetrachloroethene	ND	10.24
Toluene	4.89	2.37
Trichloroethene	ND	11.12
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	1.86

TR20-IA-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.34	2.13
Carbon tetrachloride	0.22	0.25
Ethylbenzene	1.02	1.06
Methylene chloride	0.37	0.65
Tetrachloroethene	0.08	0.07
Toluene	3.19	5.46
Trichloroethene	0.07	0.16
Vinyl chloride	ND	ND
m&p-Xylene	3.97	4.99
o-Xylene	1.6	1.67

TR20-SSV-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	387	235.7
1,1-Dichloroethane	ND	6.28
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	13.92
1,2-Dichloroethene (trans)	ND	2.18
Benzene	ND	2.84
Carbon tetrachloride	ND	ND
Ethylbenzene	62	6.16
Methylene chloride	ND	ND
Tetrachloroethene	ND	5.02
Toluene	43.6	5.91
Trichloroethene	5370	3869.45
Vinyl chloride	ND	ND
m&p-Xylene	338	31.87
o-Xylene	102	11.62

TR20-IA-9	01/19
VOCs:	
1,1,1-Trichloroethane	0.076
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.7
Carbon tetrachloride	0.59
Ethylbenzene	1.1
Methylene chloride	ND
Tetrachloroethene	0.084
Toluene	18
Trichloroethene	0.071
Vinyl chloride	ND
m&p-Xylene	4.1
o-Xylene	1.6

TR20-SSV-9	01/19
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	5.4
Carbon tetrachloride	ND
Ethylbenzene	1200
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	55
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	4800
o-Xylene	1000

TR20-SSV-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	13.62
Carbon tetrachloride	ND	ND
Ethylbenzene	13.1	122.26
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	22.1	23.34
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	22	429.2
o-Xylene	ND	183.39

TR20-IA-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.76	2.27
Carbon tetrachloride	0.2	0.25
Ethylbenzene	1.37	1.65
Methylene chloride	0.5	ND
Tetrachloroethene	0.07	0.2
Toluene	4.4	7.83
Trichloroethene	0.2	0.11
Vinyl chloride	ND	ND
m&p-Xylene	5.12	7.59
o-Xylene	2.21	2.86

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Approximate Location of Historical SWMU
- Historical Soil Vapor Probe Location
- Lab
- Office
- Warehouse/ Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTE:
- Concentrations shown in micrograms per cubic meter (µg/m^3)

130 0 130 Feet

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
BUILDING TR-20

AECOM

FIGURE 6

J:\Projects\60313024_UTCOCOFRIMRS\CAD\GIS\MapsISITE-WIDE\BUILDING\SSV Analysis\January 2019\TR-20.mxd 3/6/2019

Appendix A

Sampling Collection Forms

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/15/19

Sample #	TR4-SSV-3	FD-011519-1	TR4-IA-3	FD-011519-2	TR7-SSV-3
Location	TR-4	TR-4	TR-4	TR-4	TR-7
Summa Canister ID	6L0922	6L1808	6L0408	60000186	00000279
Flow Controller ID	23233	23606	23418	23168	23529
Additional Tubing Added	NO/YES How much? 3'	NO/YES How much?	NO/YES How much?	NO/YES How much? 3'	NO/YES How much?
Purge Time (Start)	0755	0755		~~0829~~	0829
Purge Time (Stop)	0800	0800		~~0~~	0834
Total Purge Time (min)	5	5			5
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results	0 ppm	0 ppm			0 ppm
PID (ppb)	2186	2186			2004
CH_4 (ppm)	0	0			0
O_2 (%)	20.9	20.9			≈ 18.9
CO_2	0	0			0
H_2S (ppm)	0	0			0
Pressure Gauge - before sampling	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -28	Gauge -30+ / Regulator -30+	Gauge -29.5 / Regulator -28.5	Gauge -30+ / Regulator -27
Sample Time (Start)	0808	0808	0809	0809	0837
Sample Time (Stop)	1608	1608	1609	1609	1637
Total Sample Time (min)	480	480	480	480	480
Pressure Gauge - after sampling	Gauge -9 / Regulator -10	Gauge -8 / Regulator -4	Gauge -8.5 / Regulator -7.5	Gauge -8 / Regulator -5.5	Gauge -7.5 / Regulator -5.5
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES / (NO)	YES / (NO)	YES / (NO)	YES / (NO)	YES / (NO)
General Comments:	Bkgd = 0 ppb	Field Dup of TR4-SSV-3		Field Dup of TR4-IA-3	Bkgd = 0 ppb

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/15/19

Sample #	TR7-IA-3	TR8-SSV-3	TR8-IA-3	TR8-SSV-1	TR8-IA-1
Location	TR-7	TR-8	TR-8	TR-8	TR-8
Summa Canister ID	6L1415	6L0925	6L0859	6L1077	6L0413
Flow Controller ID	23310	24248	23568	~~24285~~ 23151	23424
Additional Tubing Added	NO/YES How much? 8"	NO/YES How much? 3'	NO/YES How much?	NO/YES How much? 3'	NO/YES How much?
Purge Time (Start)		0905		0919	
Purge Time (Stop)		0910		0924	
Total Purge Time (min)		5		5	
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results		675 ppm		0 ppm	
PID (ppb)		3180 ppb		3261	
CH_4 (ppm)		0		0	
O_2 (%)		19.9		20.1	
CO_2		0.2		0.1	
H_2S (ppm)		0		0	
Pressure Gauge - before sampling	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30+
Sample Time (Start)	0836	0911	0912	0926	0927
Sample Time (Stop)	1638	1711	1712	1726	1727
Total Sample Time (min)	480	480	480	480	480
Pressure Gauge - after sampling	Gauge -7.0 / Regulator -6.5	Gauge ~~-6.5~~ / Regulator -5	Gauge -12 / Regulator -9	Gauge -5.5 / Regulator -6	Gauge -5.5 / Regulator -7.5
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)
General Comments:		BKgd 0 ppb		Flow changed to 23151 (24285 misread by -5)	

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/15/19

Sample #	TR8-SSV-2	TR8-IA-2	OA.011519		
Location	TR8	TR8	Outdoor on concrete blocks by MW-3 pair		
Summa Canister ID	6L1523	6L1453	6L1494		
Flow Controller ID	23394	23361	23111		
Additional Tubing Added	NO/(YES) How much? 3'	(NO)/YES How much?	(NO)/YES How much?	NO/YES How much?	NO/YES How much?
Purge Time (Start)	0939				
Purge Time (Stop)	0944				
Total Purge Time (min)	5				
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results	0 ppm				
PID (ppb)	5584				
CH_4 (ppm)	0				
O_2 (%)	19.2				
CO_2	0				
H_2S (ppm)	0				
Pressure Gauge - before sampling	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30+	Gauge / Regulator	Gauge / Regulator
Sample Time (Start)	0945	0946	1000		
Sample Time (Stop)	1745	1746	1800		
Total Sample Time (min)	480	480	480		
Pressure Gauge - after sampling	Gauge -6 / Regulator -8	Gauge -8.5 / Regulator -9	Gauge -6 / Regulator -8.5	Gauge / Regulator	Gauge / Regulator
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES (NO)	YES (NO)	YES (NO)	YES / NO	YES / NO
General Comments:					

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/16/19

Sample #	TR19-SSV-2	TR19-IA-2	TR19-SSV-4	TR19-IA-4	TR19-SSV-6
Location	North End				
Summa Canister ID	6L1798	6L1550	6L1707	6L1666	6L1073
Flow Controller ID	24265	23565	23514	24203	24274
Additional Tubing Added	NO/YES How much? 3'	NO/YES How much?	NO/YES How much? 3'	NO/YES How much?	NO/YES How much? 3'
Purge Time (Start)	0732		0755		0824
Purge Time (Stop)	0737		0800		0829
Total Purge Time (min)	5		5		5
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results	0ppm		0ppm		0ppm
PID (ppb)	2851		6822		7585
CH_4 (ppm)	0.1		0.0		0.0
O_2 (%)	17.5		15.3		17.9
CO_2	0.4		0.3		0.0
H_2S (ppm)	0		0.0		0.0
Pressure Gauge - before sampling	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -29.5	Gauge -30+ / Regulator -28	Gauge -30+ / Regulator -30	Gauge -30+ / Regulator -29
Sample Time (Start)	0746	0747	0806	0807	0838
Sample Time (Stop)	1546	1447	1606	1607	1638
Total Sample Time (min)	480	420	480	480	480
Pressure Gauge - after sampling	Gauge -7 / Regulator -5.5	Gauge -4.5 / Regulator -4	Gauge -7 / Regulator -6	Gauge -4.5 / Regulator -6.5	Gauge -8 / Regulator -5.5
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
General Comments:	Bkg 0ppb on ppb Rae today.				

~0810 - Two Gas covered gators that were Parked near column E8, exited TR19 going DOWN Column Row G
~1000 - Gas covered gator @ E8
~1100 - No Gator @ E8, But one observed on Row J exiting into TR20

(over)

1245 - Ryder Box truck Between H24 + I24 @ LOADING DOCK
No Gaters @ E8

1330 - No new Activity
1500 - " "
1450 - " "

1630 - bay door open to fresh air

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/16/19

Sample #	FD-011619-1	TR19-IA-6	FD-011619-2	OA-011619	
Location	TR19-SSV-6		TR19-IA-6	NW Between TR19+TR5	
Summa Canister ID	6L0423	1159	6L0812	6L0182	
Flow Controller ID	24280	23112	23546	23767	
Additional Tubing Added	NO/(YES) How much? 3'	(NO)/YES How much?	(NO)/YES How much?	(NO)/YES How much?	NO/YES How much?
Purge Time (Start)					
Purge Time (Stop)					
Total Purge Time (min)					
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results					
PID (ppb)					
CH_4 (ppm)					
O_2 (%)					
CO_2					
H_2S (ppm)					
Pressure Gauge - before sampling	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -29-	Gauge -30+ / Regulator -30	Gauge -30+ / Regulator -30+	Gauge / Regulator
Sample Time (Start)	0838	0839	0839	0857	
Sample Time (Stop)	1638	1639	1639	1657	
Total Sample Time (min)	480	480	480	480	
Pressure Gauge - after sampling	Gauge -8 / Regulator -65	Gauge -6 / Regulator -5	Gauge -8 / Regulator -6	Gauge -7 / Regulator -5	Gauge / Regulator
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES (NO)	YES (NO)	YES / (NO)	YES / (NO)	YES / NO
General Comments:	PLOW/PICKUP @ H25 UTV @ K25 TRUCK @ J23 VAN @ J24				

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility

Samplers: Rob Murphy, Tom Urban

Date: 1/17/19

Sample #	TR20-SSV-11	TR20-IA-11	TR20-SSV-10	TR20-IA-10	TR20-SSV-9
Location	TR-20 low Vac -18	TR-20			
Summa Canister ID	~~6L1744~~	1314	6L1211	6L1633	6L1378
Flow Controller ID	~~23434~~	23227	23380	23824	23773
Additional Tubing Added	NO/YES How much? 3'	NO/YES How much?	NO/YES How much? 3'	NO/YES How much?	NO/YES How much? 3'
Purge Time (Start)	0737		0800		0817
Purge Time (Stop)	0742		0805		0822
Total Purge Time (min)	5		5		5
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results	0 ppm		0 ppm		0 ppm
PID (ppb)	269		365		690
CH_4 (ppm)	0.0		0.0		0.0
O_2 (%)	20.3		20.3		20.3
CO_2	0.0		0.0		0.0
H_2S (ppm)	0.0		0.0		0.0
Pressure Gauge - before sampling	Gauge -30+ / Regulator -29.5	Gauge -30+ / Regulator -29.5	Gauge -30+ / Regulator -30	Gauge -30+ / Regulator -30+	Gauge -30+ / Regulator -30+
Sample Time (Start)	0752	0753	0808	0809	0823
Sample Time (Stop)	1552	1553	1608	1609	1623
Total Sample Time (min)	480	480	480	480	480
Pressure Gauge - after sampling	Gauge -6.5 / Regulator -6	Gauge -6 / Regulator -5.5	Gauge -6.5 / Regulator -6.5	Gauge -6.0 / Regulator -9.5	Gauge -7.0 / Regulator -6.5
Sample Volume	6 Liters	6 Liters	6 Liters	6 Liters	6 Liters
Canister Pressure Went To Ambient Pressure?	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)
General Comments:	can = 6L1809 reg: 23222 0 ppb BKg	———			

GAS POWERED VEHICLE NEXT TO COLUMN T3 @ 0715. 0810 IT DEPARTED TOWARDS TR 19 ALONG AISLE 7.

Summa Canister Sampling Field Data Sheet

Site: UTC - Carrier Facility
Samplers: Rob Murphy, Tom Urban
Date: 1/17/19

Sample #	TR20-IA-9	OA-011719			
Location					
Summa Canister ID	6L1233	6L0537			
Flow Controller ID	23202	23487			
Additional Tubing Added	(NO)/YES How much?	NO/YES How much?	NO/YES How much?	NO/YES How much?	NO/YES How much?
Purge Time (Start)					
Purge Time (Stop)					
Total Purge Time (min)					
Purge Volume	1 Liter	1 Liter	1 Liter	1 Liter	1 Liter
Initial Tracer Gas Results					
PID (ppb)					
CH_4 (ppm)					
O_2 (%)					
CO_2					
H_2S (ppm)					

Pressure Gauge - before sampling	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator
	-30+	-29.5	-30+	-30						
Sample Time (Start)	0824		0837							
Sample Time (Stop)	1624		1637							
Total Sample Time (min)	480		480							
Pressure Gauge - after sampling	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator	Gauge	Regulator
	-9.5	-9	-6.5	-5.5						
Sample Volume	6 Liters		6 Liters		6 Liters		6 Liters		6 Liters	
Canister Pressure Went To Ambient Pressure?	YES / (NO)		YES / NO		YES / NO		YES / NO		YES / NO	
General Comments:										

0615 - R. MURPHY / T. LEAN MEET @ Rob's House. ELMA, NY. DEPART FOR SITE.
0900 - Arrive on site. Meet up w/ Trevor Jennings - GPRS - utility locator.
0915 - Arrive @ Joe Bagley's office.
- HAVE SP-10 Safety meeting, followed by Utility Clearance w/ Tracy Petta.
~1000 - ACCOM + GPRS Goto TR-20.
1000 → 1200 - GPRS scans all 3 new locations. Calico had them scan an alternate spot @ easternmost new point. But after discussing w/ Peter Hajduk will advance pt @ pt more north/north of storm sewer. All 3 pts ~5" concrete w/ wire mesh.
1200 - GPRS Departs
1200 - 1230 Pick up equipment from TR
1230 - 1300 - Lunch.
1300 - 1330 - Pick up Canisters @ TA - on Boss Rd.
- Return to site stage 9 Boxes of Canisters in TR - 4 office area.
1330 - 1600 - Drill all 11 sampling pts.
Look for chemicals Seal w/ Clay and Label
1600 Check into hotel.

Rite in the Rain

Location UTC-SYRACUSE Date 1/15/19

Project / Client 2019 VI SAMPLING.

0630 meet @ motel and discuss days activities
0700 - Sign in @ Gate 6.
- Grab Canisters from TR-4.
- Setup @ TR-4-SSV-3, Conduct tracer gas test. OK
0808 - START SAMPLING TR4-SSV-3 AND DUPLICATE FD-011519-1
0809 - START SAMPLING TR4-IA-3 AND DUPLICATE FD-011519-2
- MOBE TO TR-7
- TRACER GAS TEST OK.
0837 - START SAMPLING TR-7-SSV-3
0838 - START SAMPLING TR-7-IA-3
MOBE TO TR-8.
0900 - Tracer gas test @ TR8-SSV-3 OK
0911 - START SAMPLING @ TR8-SSV-3
0912 - START SAMPLING @ TR8-IA-3
0924 - Tracer gas @ TR8-SSV-1 - OK
0926 - START SAMPLING @ TR8-SSV-1
0927 - START SAMPLING @ TR8-IA-1
0944 - Tracer gas @ TR8-SSV-2 - OK
0945 - START SAMPLING @ TR8-SSV-2
0946 - START SAMPLING @ TR8-IA-2
1000 - START OUTDOOR AMBIENT SAMPLE.
MOBE WEST OF TR7/TR4 NEAR MW-3 CLUSTER

Location UTC-SYRACUSE Date 1/15/19

Project / Client 2019 VI SAMPLING

- OA-011519 @ 1000
1100 Conduct Round to check on cans
1215 Conduct full round to check on cans
- Conduct chemical inventory in vicinity of all eleven locations. -
1445 → 1500 - Conduct check on vacuum @ all cans OK.
First can TR4-SSV to be shut off @ ~1608
1608 - Shut down TR4-SSV-3 + FD-011519-1
1609 - Shut down TR4-IA-3 and FD-011519-2
1637 Shutdown TR-7-SSV-3
1638 Shutdown TR-7-IA-3
1710 - Shutdown TR8-SSV-3
1712 - Shutdown TR8-IA-3
1726 Shutdown TR8-SSV-1
1727 Shutdown TR8-IA-1
1745 Shutdown TR8-SSV-2
1746 Shutdown TR8-IA-2
1800 Shutdown OA-011519
All Locations patched w/ hydraulic cement
Stored full cans in TR-4 office area
DEPART SITE

Rite in the Rain

Location UTC - SYRACUSE Date 1/16/19

Project / Client 2019 - VI SAMPLING

0630 R. MURPHY & T. URBAN MEET @ HOTEL.

0700 SIGN IN @ GATE 6.

GOTO TR4 LOAD UP CANISTERS.

GOTO TR19.

0732-0737 - TRACER GAS Sample TR19-SSV-2 - OK.

0746 - START SAMPLE TR19-SSV-2

0747 - START SAMPLE TR19-IA-2

0755-0800 TRACER GAS @ TR19 SSV-4 OK

0806 START SAMPLE @ TR19-SSV-4

0807 START SAMPLE TR19-IA-4

0824-0829 - TRACER GAS @ TR19-SSV-6 OK

0838 - START TR19-SSV-6

AND DUPLICATE FD-011619-1

0839 START TR19-IA-6

AND DUPLICATE FD-011619-2

Plow/Pickup @ Column H25,

UTV @ Column K25

TRUCK @ J23

VAN @ J24

Two Golfs (gas powered) noted @ Column C8

AND OBSERVED TO MOVE AROUND BUILDING

0905-0915 Conduct Round of vac. checks

1005-1015 - " "

1105-1115 - " "

Location UTC - SYRACUSE Date 1/16/19

Project / Client 2019 - VI SAMPLING

1230 - Conduct Round of Vac Checks.

TR-19-IA-2 Appears to be running fast, keep an eye on it.

1245 - Ryder Box truck observed in loading dock @ H24/I24.

No Golfers @ @ 8

1330 - Conduct Vac Checks OK.

13 - No New activity.

1400 - Vac checks ok / No new Activity.

1445 - Vac checks ok / No new Activity.

- Except shut off TR11-IA-2 @ 1447

After 7 hours.

1546 - Shutdown TR19-SSV-2 And Patch.

1606 - Shutdown TR19-SSV-4 And Patch

1607 Shutdown TR19-IA-4

1638 Shutdown TR19-SSV-6 And FD-011619-1 And Patch

1639 Shutdown TR-19-IA-6 and FD-011619-2

1657 Shut down Outdoor Air OA-011619.

Pack up / Tape Summa can Edges And Take to FEDEX.

1830 - End of DAY

Rite in the Rain

Location UTC - SYRACUSE Date 1/17/19

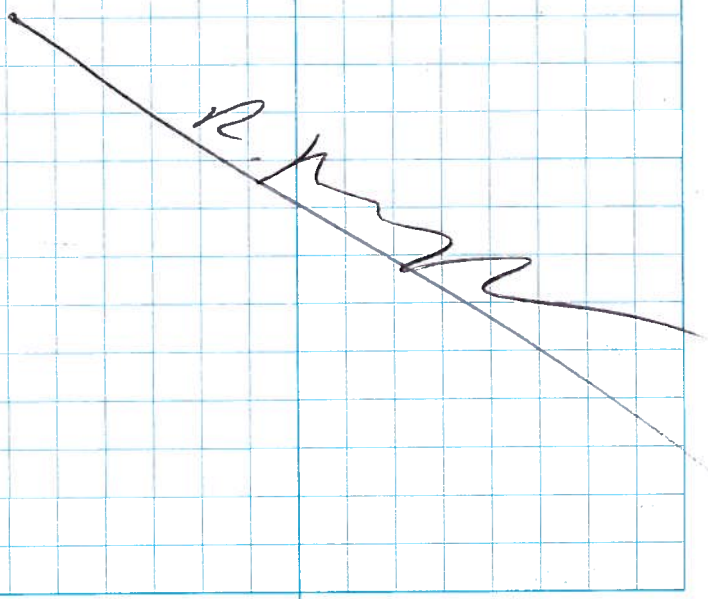
Project / Client 2019 - VI SAMPLING

0630 - Meet @ Hotel.
0700 - Sign in @ Gate 6
- Goto TR4 LOADUP CANS.
- MOBE to TR20.
0737-0742 - TRACER GAS @ TR20-SSV-11 OK
0752 - START SIMPLE TR20-SSV-11
0753 - START SAMPLE TR20-IA-11
0800-0805 TRACER GAS @ TR20-SSV-10 - OK!
0808 - START SAMPLE TR20-SSV-10
0809 - START SAMPLE TR20-IA-10
0817-0822 TRACER GAS @ TR20-SSV-9 - OK!
0823 - START SAMPLE @ TR20-SSV-9.
0824 - START SAMPLE @ TR20-IA-9
0837 - SETUP OUTDOOR CAN DA-011719
- Gas powered vehicles noted @ Column T3 @ 0715, @ 0810 it departed ~~twice not~~ along aside 7.
1030 - Conduct Vac Checks
1215 - Conduct Vac Checks
1315 - Conduct Vac Checks
1500 - Conduct Vac Checks
→ No Gas powered vehicles observed in TR20 except for the one in morning.

Location UTC SYRACUSE Date 1/17/19

Project / Client 2019 VI SAMPLING

1552 Shutdown TR20-SSV-11 + Patch.
1553 Shutdown TR20-IA-11
1608 Shutdown TR20-SSV-10 + Patch
1609 Shutdown TR20-IA-10
1623 Shutdown TR20-SSV-9 + Patch
1624 Shutdown TR20-IA-9
1637 Shutdown DA-011719.
- Bob up all Summa Canisters and connects to COC.
1645 Sign out @ Gate 6
1700 - Go to FEDEX / END OF DAY



Rite in the Rain

Location UTC - SYRACUSE Date 1/18/19

Project / Client 2019 VI SAMPLING

0730 MEET @ HOTEL + CHECKOUT
- GOTO GATE 6, Sign in.
- CLEAN FLOORS (WAX CRAYON MARKINGS) IN TR20.
- PAINT ALL LOCATIONS IN TR20, TR19, and TR8. with EPOXY seal Paint (Grey)

~0930. CHECK IN W/ JOE BASKS.

1045 DEPART SITE / SIGN OUT @ GATE 6.
- GOTO PINES TO RETURN RENTALS

~1400 ARRIVE HOME TRANSFER EQUIPMENT FROM RENTAL RETURN RENTAL.

Location Date

Project / Client

Rite in the Rain

TR-8: 2nd Floor Sampling Event
UTC Carrier - Syracuse NY
Vapor Intrusion Summa Can Data Sheet

5-1-19

Sample ID	Canister #	Flow Control #	Initial Vacuum (in Hg)	Final Vacuum (in Hg)	Start Time	Stop Time
TR8-IA-4	8046	10064	29.5	4	818	14:58
TR8-IA-5	7309	10056	29	4	8:22	14:53
TR8-IA-6	7960	10047	29	4	835	14:48
~~TR8-IA-7~~	~~6210~~	~~10053~~	~~29.5~~	~~6~~	~~835~~	~~14:48~~
~~TR8~~-OA-050119	8488	10063	29	4	839	15:17
FD-IA-050119	6210	10053	29.5	6	835	1448

Field Duplicate

in hg - inches of mercury

~~TR8-IA-7 is a duplicate of TR8-IA-6~~
Renamed FD-IA-050119
Duplicate of TR8-IA-6

Appendix B

Photo Log

AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/14/19

Description:

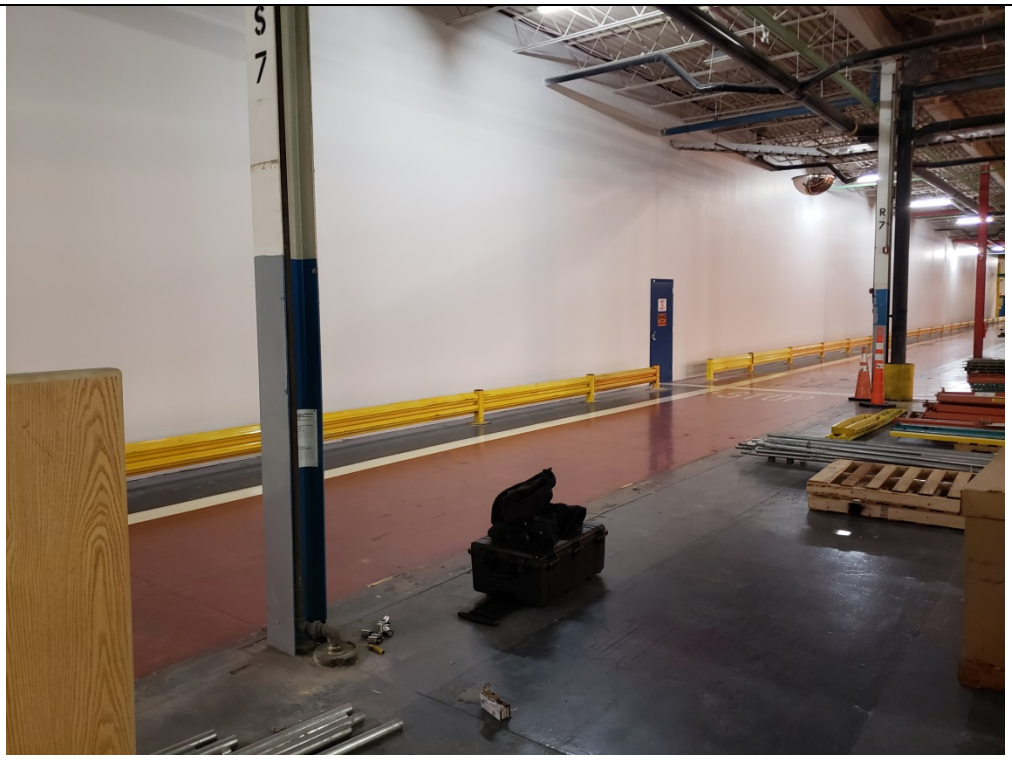
GPR scan of TR20-SSV-9



Location:	**Date:**
TR-20	1/14/19

Description:

View southwest of TR20-SSV-9 location next to column S7.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/14/19

Description:

View south southeast of GPR scan of TR20-SSV-10



Location:	**Date:**
TR-20	1/14/19

Description:

View east of TR20-SSV-10 location next to column U7.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/14/19

Description:

View west of TR20-SSV-11 location next to column W7 after GPR scan and mark out of rebar grid.



Location:	**Date:**
TR-20	1/14/19

Description:

View north of TR20-SSV-11 location next to column W7 after GPR scan and mark out of rebar grid.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/14/19

Description:

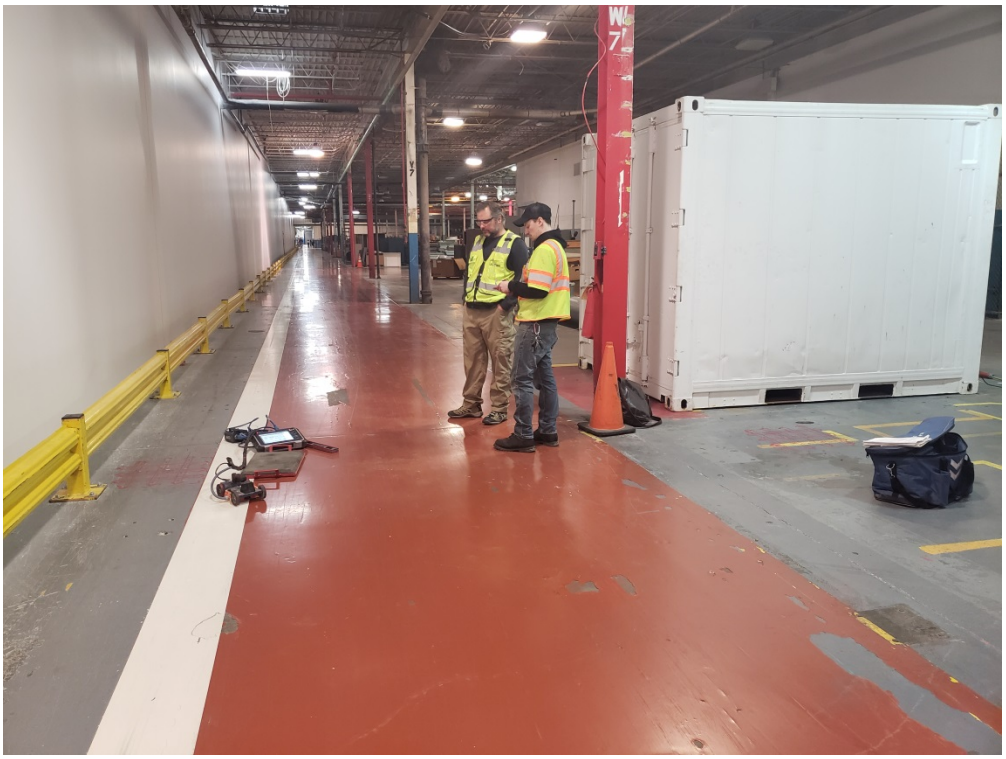
View south of alternate TR20-SSV-11 location that was marked out, but ultimately not used.



Location:	**Date:**
TR-20	1/14/19

Description:

View west of alternate TR20-SSV-11 location that was marked out, but ultimately not used.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-4	1/15/19

Description:

Indoor air sample
TR4-AI-3

Sub-slab sample
TR4-SSV-3

Plus Duplicates:
FD-011519-1 and
FD-011519-2



Location:	**Date:**
TR-7	1/15/19

Description:

Indoor air sample
TR7-IA-3

Sub-slab sample
TR7-SSV-3



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-8	1/15/19

Description:

Indoor air sample
TR8-IA-3

Sub-slab sample
TR8-SSV-3



Location:	**Date:**
TR-8	1/15/19

Description:

Indoor air sample
TR8-IA-1

Sub-slab sample
TR8-SSV-1



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-8	1/15/19

Description:

Indoor air sample
TR8-IA-2

Sub-slab sample
TR8-SSV-2



Location:	**Date:**
TR-8	1/15/19

Description:

View of cleaning chemical storage cabinet located at south end of main room in TR-8. Contents were inventoried prior to sampling.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-19	1/16/19

Description:

Gasoline powered vehicles observed parked near column E8.



Location:	**Date:**
TR-19	1/16/19

Description:

Van parked near column J24.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-19	1/15/19

Description:

Truck parked near column J23



Location:	**Date:**
TR-19	1/16/19

Description:

Gasoline powered vehicle parked near column K25.



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-19	1/16/19

Description:

Truck parked near column H25.



Location:	**Date:**
TR-19	1/16/19

Description:

Indoor air sample
TR19-IA-2

Sub-slab sample
TR19-SSV-2



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-19	1/16/19

Description:

Indoor air sample
TR19-IA-4

Sub-slab sample
TR19-SSV-4



Location:	**Date:**
TR-19	1/16/19

Description:

Indoor air sample
TR19-IA-6 and duplicate
FD-011619-2

Sub-slab sample
TR19-SSV-6 and
duplicate FD-011619-1



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-19	1/16/19

Description:

View northwest of outdoor air sample OA-011619 located between buildings TR-19 and TR-5



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/17/19

Description:

Gasoline powered vehicle observed parked near column T3.



Location:	**Date:**
TR-20	1/17/19

Description:

Indoor air sample
TR20-IA-9

Sub-slab sample
TR20-SSV-9



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/17/19

Description:

Indoor air sample
TR20-IA-10

Sub-slab sample
TR20-SSV-10



Location:	**Date:**
TR-20	1/17/19

Description:

Indoor air sample
TR20-IA-11

Sub-slab sample
TR20-SSV-11



AECOM

PHOTOGRAPH LOG

Client Name:
Carrier Corporation

Site Location:
Thompson Road Campus
Syracuse, New York

Location:	**Date:**
TR-20	1/17/19

Description:

Outdoor Air Sample
OA-011719

Located at northeast corner of TR-20

View looking southwest.



Appendix C

Product Inventory Forms

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-4 Bldg Code: _____ Date: 1/15/19

Bldg Address: _____ Apt/Suite No: _____

Bldg City/State/Zip: _____

Make and Model of PID: _____ Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
cafeteria	nothing in area					☐
	115 ppb Bkgd @			12:30 (lunch-time)		☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-7 Bldg Code: _____ Date: 1/15/19

Bldg Address: _____ Apt/Suite No: _____

Bldg City/State/Zip: _____

Make and Model of PID: _____ Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
kitchenette	greaseless lubricant	11 oz	U	petroleum distillates	0	☐
	eaderm hand cream	14 oz	UO x4	Tea-Sterate; prop. glycol	0	☐
	desk & office cleaner	15 oz	U	N/A	0	☐
	lemon polish	14 oz	UO	propane, isobutane; n-butane, Naphtha	113	☐
hallway cabinet	marking paint	17 oz	UO	toluene, acetone, xylene	2517	☐
						☐
						☐
WEST BAY	GAS POWERED VEHICLES			OCCASSIONALLY VEHICLES ARE PARKED IN THIS BAY. UTVS/SIDE BY SIDES		☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-8 Bldg Code: _____ Date: 1/15/19

Bldg Address: _____ Apt/Suite No: _____

Bldg City/State/Zip: _____

Make and Model of PID: _____ Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
back closet	Good Sense RTU odor counteractant	1qt.	New UO x2	isopropyl alcohol	0	☐
	non-acid Bowl	1qt	New UO x2	n-alkyl dimethyl benzyl ammonium chloride	0	☐
	crew clinging toilet bowl cleaner	1qt	new UO	" "	0	☐
back room cabinet	multiple quarts of cleaners	1qt	new UO x9	" "	0	☐
	bleach	1gal	new UO	bleach	0	☐
	* Scan under	annex	door	- 0 ppb		☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-19 Bldg Code: Date: 1/15/19

Bldg Address: Apt/Suite No:

Bldg City/State/Zip:

Make and Model of PID: Date of Calibration:

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
South TR-19 H23 column	rostoleum enamel	15oz	UO	acetone, xylene	331	☐
Bkgd =	30ppb 2-3 gas powered vehicles in bay area					☐
I 11 area	Bkgd = 178 ppb					☐
	isopropyl alcohol	12oz	U	Iso. alcohol 1-1 difluoroethane	260	☐
	rostoleum camoflage paint	12oz	U	toluene & xylene	1062	☐
	lubricant - spray	11oz	U	pet. distillates mineral oil	1356	☐
	lubricant - spray silicone	10oz	U	hexane, propane, 2 methyl pentane	1091	☐
	"			2-3 dimethyl butane 2-2 " "		☐
column D4	Bkgd 380					☐
	silicone caulk	10oz	U	ethyltriacetoxysilane methyltriacetoxysilane	477	☐
	degreaser CSM-2	20oz	U	n-propyl bromide	2333 ppm	☐
	locktite	0.34oz x2	U	N/A	595	☐
	ultra tetgel	2oz	U	fluorocarbon ~~lubricant~~ polymer	614	☐
	thread sealant	1pt	U	petroleum oils & butane	699	☐
	contact cleaner	11oz x2	U	hexane isopropyl alcohol	1163	☐
	Stop gap foam	12oz	U	4-4 diphenylmethane dimethyl ether	884	☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-19 Bldg Code: _____ Date: 1/15/19

Bldg Address: _____ Apt/Suite No: _____

Bldg City/State/Zip: _____

Make and Model of PID: _____ Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
E6 column	hand wipes Harco -Pro	3 oz	U	glycerine	10.66	ppm ☐
	metal cutting oil	16.5	U	pet. oil propane n-Butane; isobutane	650	☐
F3+ F4	flammable cabinet	outside		16.55 ppm		☐
	↳ 5' ⊥	Bkgd		of ~~750~~ 680/700		☐
D4 area	iso. alcohol	12 oz	x2 U	iso. alcohol	711	☐
	thread sealant	1 pt	U	pet. oils & butane	50.68	ppm ☐
	lubricant spray	11 oz	U	aromatic Hydrocarbons surfactant	1566	☐
	WD-40	11 oz	U	pet. distallates	1065	☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: TR-20 Bldg Code: _____ Date: 1/15/19

Bldg Address: _____ Apt/Suite No: _____

Bldg City/State/Zip: _____

Make and Model of PID: _____ Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
Bkgd	222					☐
column T5	wall base adhesive x7	30oz	UO	repia polymer urea, plasticizer	1300	☐
	Stainless steel clener	18oz	UO	pet. distillates, butane/propane blend	320	☐
	latef paint	30gal	U	vinyl polymer titanium dioxide	Bkgd	☐
	acrylic latex	1gal	U	ammonium hydroxide	Bkgd	☐
column W6	WD-40	11oz	U	pet. distillate	318	☐
Bkgd 26y	multi purpose adhesive	16.75 oz	U	acetone propane cyclohexane	1927	☐
				dimethylbutane		☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* 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.

Product Inventory Complete? ☐ Were there any elevated PID readings taken on site? ☐ ☐ Products with COC?

Appendix D

Data Usability Summary Reports

DATA USABILITY SUMMARY REPORT

VAPOR INTRUSION INVESTIGATION - 2018/2019 WINTER SEASON
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY
SITE ID# 734043

Analyses Performed by:

EUROFINS/AIR TOXICS
FOLSOM, CA 95630

Prepared for:

UNITED TECHNOLOGIES CORP.
UTC SHARED REMEDIATION SERVICES
FARMINGTON, CT 06032

Prepared by:

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202

FEBRUARY 2019

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1

2.0 ANALYTICAL METHODOLOGIES/DATA VALIDATION PROCEDURES 1

3.0 DATA DELIVERABLE COMPLETENESS 2

4.0 SAMPLE RECEIPT/HOLDING TIMES 2

5.0 NONCONFORMANCES 2

6.0 SAMPLE RESULTS AND REPORTING 2

7.0 SUMMARY 2

TABLES
(Following Text)

Table 1 Summary of Data Qualifications

Table 2 Validated Soil Vapor, Indoor Air, and Outdoor Air Sample Results

ATTACHMENTS

Attachment A Validated Form I's

Attachment B Support Documentation

1.0 INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B, Guidance for Data Deliverables and the Development of Data Usability Summary Reports,* May 2010. Discussed in this DUSR are analytical data for 11 soil vapor samples, 2 soil vapor field duplicates, 11 indoor air samples, 2 indoor air field duplicates, and 3 ambient (outdoor) air samples collected January 15-17, 2019. The samples were collected in support of the Soil Vapor Intrusion Study for the UTC/Carrier site (Site #734043), located in Syracuse, New York.

2.0 ANALYTICAL METHODOLOGIES/DATA VALIDATION PROCEDURES

All samples were sent to Eurofins/Air Toxics (Folsom, CA) for analysis. The samples were analyzed for select volatile organic compounds (VOCs) following United States Environmental Protection Agency (USEPA) *Compendium Method TO-15, Determination of VOCs in Air Collected in Specially Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*, EPA/625/R-96/010b, January 1999. The soil vapor, indoor air and outside air samples were analyzed by TO-15 low level and TO-15 Selective Ion Monitoring (SIM) in order to achive the requested detection limits.

A limited data validation was performed in accordance with the guidelines in the following USEPA Region II document:

- *Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15, SOP HW-31, Rev. 6,* December 2016.

The limited validation included: a completeness review of all required deliverables; holding times; a review of quality control (QC) results [blanks, instrument tunings, calibration standards, duplicate analyses, and laboratory control sample (LCS) recoveries] to determine if the data are within the protocol-required limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; an evaluation of the raw data to confirm the results provided in the data summary sheets; and a review of laboratory data qualifiers.

Qualifications applied to the data during the limited data validation include 'J' (estimated), 'UJ' (estimated quantitation limit), and 'U' (non-detect). Definitions of USEPA data qualifiers are presented at the end of this text. A summary of data qualifications is presented on Table 1. The validated analytical results are presented on Table 2. Copies of validated laboratory analytical summaries (Form 1s) are presented in Attachment A. Documentation supporting the qualification of data is presented in Attachment B. Only analytical deviations affecting data usability are discussed in this report.

3.0 DATA DELIVERABLE COMPLETENESS

Full deliverable data packages (i.e., NYSDEC ASP (Category B or equivalent) were provided by the laboratory, which included all reporting forms and raw data necessary to fully evaluate and verify the reported analytical results.

4.0 SAMPLE RECEIPT/HOLDING TIMES

All samples were received by the laboratory intact and under proper chain-of-custody (COC). All samples were analyzed within the required holding times.

The change in pressure between the end of sampling and receipt at the lab exceeded 5 psi for outdoor air sample OA-011619. The results for all compounds in this sample have been qualified 'J' or 'UJ'.

5.0 NONCONFORMANCES

- **Field Duplicates**

  A field duplicate was collected for soil vapor samples TR4-SSV-3 and TR19-SSV-6, and indoor air samples TR4-IA-3 and TR19-IA-6. The field duplicate relative percent differences (RPDs) exhibited good analytical precision (i.e., RPD < 50% when parent and/or field duplicate results are detected) with the exceptions listed on Table 1.

- **Laboratory Blanks**

  Benzene and/or methylene chloride (MeCl) were detected in the method blanks at levels less the reporting limit (RL) but greater than the method detection limit (MDL) (i.e., 'J' result). Note, the lab is reporting down to the MDL in order to achieve the requested detection limits (see Table 2). The associated samples listed on Table 1 that had detections less than the RL (2x the RL for MeCl) for these compounds were qualified 'U' at the RL or the detected value, whichever was higher.

  Support documentation (i.e., method blank Form I) is provided in Attachment B.

6.0 SAMPLE RESULTS AND REPORTING

All quantitation/detection limits were reported in accordance with method requirements and were adjusted for sample volume and dilution factors. Results below the quantitation limits were qualified 'J' by the laboratory.

The laboratory incorrectly identified field duplicate sample FD-011619-*2* (TR19-IA-6) as FD-011619-*1* on the Form Is. The form Is were manually corrected during the data validation process.

Several soil vapor samples required initial dilutions due to high levels of target compounds and/or non-target compounds. The quantitation limits reported for the non-detect compounds are the lowest achievable at the diluted level.

7.0 SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. Those results qualified 'J', 'U', or 'UJ' are considered conditionally usable. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist AMK **Date:** 2/28/19

Reviewed By: Peter R. Fairbanks, Senior Chemist PF **Date:** 2/28/19

DEFINITIONS OF USEPA DATA QUALIFIERS

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 low.

UJ – The analyte was analyzed for, but 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 quality control criteria. The analyte may or may not be present in the sample.

D – The sample result was reported from a secondary dilution analysis.

TABLE 1
VAPOR INTRUSION INVESTIGATION – 2018/2019 WINTER SEASON
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	FRACTION	ANALYTICAL DEVIATION	QUALIFICATION
OA-011619	VOCs	Pressure difference between end of sampling and lab receipt > 5 psi.	Qualify detected results 'J' and non-detect results 'UJ'
TR19-IA-6 and FD-011619-2	VOCs	FD %RPD > 50% for trichloroethene and MeCl.	Qualify detected results 'J' and non-detect results 'UJ'.
TR4-IA-3, FD-011519-2 (TR4-IA-3), TR4-SSV-3, FD-011519-1 (TR4-SSV-3), TR7-IA-3, TR7-SSV-3, TR8-IA-1, TR8-SSV-1, TR8-IA-2, TR8-SSV-2, TR8-IA-3, TR8-SSV-3, TR19-IA-2, TR19-SSV-2, TR19-SSV-4, TR19-IA-6, FD-011619-2 (TR19-IA-6), TR20-IA-11, and TR20-SSV-11	VOCs	MBLK > MDL but < RL for MeCl.	Quality detected results < 2x RL 'U' at RL, or 'U' at the detected value, whichever was higher.
TR8-SSV-1, TR19-SSV-6, and FD-011619-1 (TR19-SSV-6)	VOCs	MBLK > MDL but < RL for benzene.	Quality detected results <RL 'U' at RL.

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		OA-011519	OA-011619	OA-011719	TR19-IA-2	TR19-IA-4
Sample ID		OA-011519	OA-011619	OA-011719	TR19-IA-2	TR19-IA-4
Matrix		Outdoor Air	Outdoor Air	Outdoor Air	Indoor Air	Indoor Air
Depth Interval (ft)		-	-	-	-	-
Date Sampled		01/15/19	01/16/19	01/17/19	01/16/19	01/16/19
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	0.019 J	0.020 J	0.056 U	0.024 J	0.019 U
1,1-Dichloroethane	UG/M3	0.014 U	0.013 UJ	0.040 U	0.015 U	0.014 U
1,1-Dichloroethene	UG/M3	0.018 U	0.017 UJ	0.049 U	0.020 U	0.019 U
1,2-Dichloroethene (cis)	UG/M3	0.032 J	0.019 UJ	0.060 U	0.021 U	0.020 U
1,2-Dichloroethene (trans)	UG/M3	0.025 U	0.024 UJ	0.046 U	0.053 J	0.026 U
Benzene	UG/M3	0.64	0.44 J	0.81	2.0	1.8
Carbon tetrachloride	UG/M3	0.41	0.40 J	0.62	0.41	0.41
Ethylbenzene	UG/M3	0.26	0.10 J	0.12 J	2.4	1.4
Methylene chloride	UG/M3	9.1	0.53 J	0.72 U	1.1 U	1.0 U
Tetrachloroethene	UG/M3	0.080 J	0.058 J	0.048 J	0.70	0.099 J
Toluene	UG/M3	54	1.7 J	0.62	20	25
Trichloroethene	UG/M3	0.12 J	0.034 J	0.054 J	0.080 J	0.047 J
Vinyl chloride	UG/M3	0.0094 U	0.0089 UJ	0.013 U	0.010 U	0.0097 U
m&p-Xylene	UG/M3	0.76	0.27 J	0.29	8.7	5.5
o-Xylene	UG/M3	0.14	0.098 J	0.12 J	3.3	2.2

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		TR19-IA-6	TR19-IA-6	TR19-SSV-2	TR19-SSV-4	TR19-SSV-6
Sample ID		FD-011619-2	TR19-IA-6	TR19-SSV-2	TR19-SSV-4	FD-011619-1
Matrix		Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor
Depth Interval (ft)		-	-	-	-	-
Date Sampled		01/16/19	01/16/19	01/16/19	01/16/19	01/16/19
Parameter	Units	Field Duplicate (1-1)				Field Duplicate (1-1)
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	0.023 J	0.019 J	0.27 J	0.20 J	0.018 U
1,1-Dichloroethane	UG/M3	0.15 U	0.014 U	0.16 J	0.13 J	0.014 U
1,1-Dichloroethene	UG/M3	0.20 U	0.019 U	0.20 U	0.55 J	0.019 U
1,2-Dichloroethene (cis)	UG/M3	0.084 J	0.020 U	0.22 U	100	0.020 U
1,2-Dichloroethene (trans)	UG/M3	0.28 U	0.026 U	0.27 U	24	0.026 U
Benzene	UG/M3	1.1	1.1	2.9	1.7	2.6 U
Carbon tetrachloride	UG/M3	0.40	0.37	0.98 U	0.51 U	0.092 U
Ethylbenzene	UG/M3	0.78	0.75	3.8	12	0.75 J
Methylene chloride	UG/M3	1.1 UJ	2.4 J	11 U	5.7 U	11 U
Tetrachloroethene	UG/M3	0.083 J	0.11 J	1.4 J	17	0.26 J
Toluene	UG/M3	12	12	13	12	12
Trichloroethene	UG/M3	0.30 J	0.034 J	0.79 J	110	0.24 J
Vinyl chloride	UG/M3	0.10 U	0.0096 U	0.68 J	3.7	0.42 J
m&p-Xylene	UG/M3	2.8	2.7	16	80	3.2
o-Xylene	UG/M3	1.1	1.0	6.7	63	1.2 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		TR19-SSV-6	TR20-IA-10	TR20-IA-11	TR20-IA-9	TR20-SSV-10
Sample ID		TR19-SSV-6	TR20-IA-10	TR20-IA-11	TR20-IA-9	TR20-SSV-10
Matrix		Subslab Vapor	Indoor Air	Indoor Air	Indoor Air	Subslab Vapor
Depth Interval (ft)		-	-	-	-	-
Date Sampled		01/16/19	01/17/19	01/17/19	01/17/19	01/17/19
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	0.20 U	0.052 J	0.047 J	0.076 J	0.027 J
1,1-Dichloroethane	UG/M3	0.16 U	0.015 U	0.014 U	0.050 U	0.020 J
1,1-Dichloroethene	UG/M3	0.21 U	0.020 U	0.019 U	0.060 U	0.020 U
1,2-Dichloroethene (cis)	UG/M3	0.22 U	0.021 U	0.031 J	0.074 U	0.022 U
1,2-Dichloroethene (trans)	UG/M3	0.28 U	0.027 U	0.026 U	0.058 U	0.027 U
Benzene	UG/M3	2.6 U	1.2	1.2	1.7	0.64
Carbon tetrachloride	UG/M3	1.0 U	0.42	0.40	0.59	0.37
Ethylbenzene	UG/M3	0.80 J	0.97	1.0	1.1	0.17
Methylene chloride	UG/M3	11 U	2.1	1.1 U	0.90 U	1.5
Tetrachloroethene	UG/M3	0.24 J	0.088 J	0.082 J	0.084 J	0.072 J
Toluene	UG/M3	12	23	23	18	3.0
Trichloroethene	UG/M3	0.24 J	0.048 J	0.045 J	0.071 J	0.28
Vinyl chloride	UG/M3	0.40 J	0.010 U	0.0099 U	0.016 U	0.24
m&p-Xylene	UG/M3	3.2	3.6	3.8	4.1	1.0
o-Xylene	UG/M3	1.2 J	1.4	1.4	1.6	0.25

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		TR20-SSV-11	TR20-SSV-9	TR4-IA-3	TR4-IA-3	TR4-SSV-3
Sample ID		TR20-SSV-11	TR20-SSV-9	FD-011519-2	TR4-IA-3	FD-011519-1
Matrix		Subslab Vapor	Subslab Vapor	Indoor Air	Indoor Air	Subslab Vapor
Depth Interval (ft)		-	-	-	-	-
Date Sampled		01/17/19	01/17/19	01/15/19	01/15/19	01/15/19
Parameter	Units			Field Duplicate (1-1)		Field Duplicate (1-1)
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	0.047 J	5.2 U	0.24	0.27	40
1,1-Dichloroethane	UG/M3	0.033 J	4.2 U	0.047 J	0.052 J	5.6
1,1-Dichloroethene	UG/M3	0.020 U	7.9 U	0.021 U	0.021 U	0.54
1,2-Dichloroethene (cis)	UG/M3	0.022 U	6.2 U	0.13	0.15	12
1,2-Dichloroethene (trans)	UG/M3	0.027 U	5.8 U	0.13 J	0.15 J	0.15 J
Benzene	UG/M3	0.76	5.4	0.67	0.69	0.33
Carbon tetrachloride	UG/M3	0.21	7.9 U	0.36	0.42	0.39
Ethylbenzene	UG/M3	1.9	1,200	0.30	0.34	0.13 J
Methylene chloride	UG/M3	1.1 U	9.5 U	2.5 U	1.2 U	2.1 U
Tetrachloroethene	UG/M3	0.10 J	6.4 U	0.085 J	0.11 J	0.091 J
Toluene	UG/M3	3.1	55	2.9	3.1	0.74
Trichloroethene	UG/M3	0.36	9.0 U	0.25	0.28	23
Vinyl chloride	UG/M3	0.36	5.1 U	0.011 U	0.011 U	0.039 J
m&p-Xylene	UG/M3	13	4,800	0.90	1.0	0.42
o-Xylene	UG/M3	6.5	1,000	0.36	0.41	0.20

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

#Error
Printed: 2/28/2019 9:20:18 AM
[LOGDATE] >= #1/15/2019# AND [UNITS] = 'UG/M3'

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		TR4-SSV-3	TR7-IA-3	TR7-SSV-3	TR8-IA-1	TR8-IA-2
Sample ID		TR4-SSV-3	TR7-IA-3	TR7-SSV-3	TR8-IA-1	TR8-IA-2
Matrix		Subslab Vapor	Indoor Air	Subslab Vapor	Indoor Air	Indoor Air
Depth Interval (ft)		-	-	-	-	-
Date Sampled		01/15/19	01/15/19	01/15/19	01/15/19	01/15/19
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	41	0.034 J	1.3	0.49	0.67
1,1-Dichloroethane	UG/M3	5.7	0.036 J	0.34	0.30	0.41
1,1-Dichloroethene	UG/M3	0.56	0.021 U	0.10	0.31	0.31
1,2-Dichloroethene (cis)	UG/M3	12	0.16	0.48	0.90	1.2
1,2-Dichloroethene (trans)	UG/M3	0.17 J	0.028 U	0.029 U	0.039 J	0.041 J
Benzene	UG/M3	0.29	2.5	3.0	1.2	1.3
Carbon tetrachloride	UG/M3	0.37	0.41	0.31	0.39	0.41
Ethylbenzene	UG/M3	0.083 J	1.5	2.2	1.1	1.2
Methylene chloride	UG/M3	1.2 U	1.1 U	2.4 U	2.0 U	1.2 U
Tetrachloroethene	UG/M3	0.094 J	0.097 J	0.42	0.32	0.36
Toluene	UG/M3	0.32	9.9	9.8	3.7	3.6
Trichloroethene	UG/M3	24	1.1	80	3.2	4.3
Vinyl chloride	UG/M3	0.049 J	0.024 J	0.53	0.10	0.13
m&p-Xylene	UG/M3	0.29 J	5.7	11	4.2	4.9
o-Xylene	UG/M3	0.12 J	1.9	4.5	2.4	3.1

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

TABLE 2
VALIDATED SOIL VAPOR, INDOOR AIR, AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		TR8-IA-3	TR8-SSV-1	TR8-SSV-2	TR8-SSV-3
Sample ID		TR8-IA-3	TR8-SSV-1	TR8-SSV-2	TR8-SSV-3
Matrix		Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor
Depth Interval (ft)		-	-	-	-
Date Sampled		01/15/19	01/15/19	01/15/19	01/15/19
Parameter	Units				
Volatile Organic Compounds					
1,1,1-Trichloroethane	UG/M3	0.35	31	52	44
1,1-Dichloroethane	UG/M3	0.26	50	12	23
1,1-Dichloroethene	UG/M3	0.44	4.0	0.18	0.068 U
1,2-Dichloroethene (cis)	UG/M3	0.75	140	22	30
1,2-Dichloroethene (trans)	UG/M3	0.035 U	1.6 J	0.41 J	0.86 J
Benzene	UG/M3	1.9	1.2 U	0.74	0.44 J
Carbon tetrachloride	UG/M3	0.42	0.47 U	0.35 J	0.58 J
Ethylbenzene	UG/M3	1.4	0.076 U	1.2	0.11 J
Methylene chloride	UG/M3	1.4 U	5.3 U	2.2 U	3.7 U
Tetrachloroethene	UG/M3	0.37	12	11	16
Toluene	UG/M3	6.4	0.23 J	2.0	1.1
Trichloroethene	UG/M3	2.4	470	270	350
Vinyl chloride	UG/M3	0.013 U	2.0	0.63	0.34
m&p-Xylene	UG/M3	5.3	0.22 J	4.3	0.33 J
o-Xylene	UG/M3	2.3	0.14 J	2.6	0.18 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 2/20/19
CHECKED BY: PRF 2/26/19

Detection Limits shown are MDL

ATTACHMENT A

VALIDATED FORM I'S

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR4-IA-3		
Lab ID:	1901332-03A	**Date/Time Analyzed:**	1/22/19 03:16 PM
Date/Time Collected:	1/15/19 08:09 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012209

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 1.2	0.52	1.2	1.2 ~~0.42 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	100

2/5/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR4-IA-3		
Lab ID:	1901332-03B	**Date/Time Analyzed:**	1/22/19 03:16 PM
Date/Time Collected:	1/15/19 08:09 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012209sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.021	D	0.18	0.27
1,1-Dichloroethane	75-34-3	0.016	D	0.14	0.052 J
1,1-Dichloroethene	75-35-4	0.021	D	0.067	Not Detected
Benzene	71-43-2	0.019	D	0.27	0.69
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.42
cis-1,2-Dichloroethene	156-59-2	0.023	D	0.13	0.15
Ethyl Benzene	100-41-4	0.017	D	0.14	0.34
m,p-Xylene	108-38-3	0.022	D	0.29	1.0
o-Xylene	95-47-6	0.019	D	0.14	0.41
Tetrachloroethene	127-18-4	0.019	D	0.23	0.11 J
Toluene	108-88-3	0.031	D	0.13	3.1
trans-1,2-Dichloroethene	156-60-5	0.029	D	0.67	0.15 J
Trichloroethene	79-01-6	0.018	D	0.18	0.28
Vinyl Chloride	75-01-4	0.011	D	0.086	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	97

TR4-1A-3

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011519-2		
Lab ID:	1901332-04A	**Date/Time Analyzed:**	1/22/19 04:23 PM
Date/Time Collected:	1/15/19 12:00 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012210

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 2.5	0.51	~~1.1~~ 2.5	2.5 U

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	97

2/5/19

TR4-1A-3

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011519-2		
Lab ID:	1901332-04B	**Date/Time Analyzed:**	1/22/19 04:23 PM
Date/Time Collected:	1/15/19 12:00 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012210sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.18	0.24
1,1-Dichloroethane	75-34-3	0.016	D	0.13	0.047 J
1,1-Dichloroethene	75-35-4	0.021	D	0.065	Not Detected
Benzene	71-43-2	0.018	D	0.26	0.67
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.36
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.13	0.13
Ethyl Benzene	100-41-4	0.016	D	0.14	0.30
m,p-Xylene	108-38-3	0.022	D	0.28	0.90
o-Xylene	95-47-6	0.019	D	0.14	0.36
Tetrachloroethene	127-18-4	0.019	D	0.22	0.085 J
Toluene	108-88-3	0.030	D	0.12	2.9
trans-1,2-Dichloroethene	156-60-5	0.028	D	0.65	0.13 J
Trichloroethene	79-01-6	0.017	D	0.18	0.25
Vinyl Chloride	75-01-4	0.011	D	0.084	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	97

DLK 2/5/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR4-SSV-3		
Lab ID:	1901332-01A	**Date/Time Analyzed:**	1/22/19 12:59 PM
Date/Time Collected:	1/15/19 08:08 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012207

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 1.2	0.52	1.2	1.2 ~~0.92 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	111
Toluene-d8	2037-26-5	70-130	97

dpsp 2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR4-SSV-3		
Lab ID:	1901332-01B	**Date/Time Analyzed:**	1/22/19 12:59 PM
Date/Time Collected:	1/15/19 08:08 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012207sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.021	D	0.18	41
1,1-Dichloroethane	75-34-3	0.016	D	0.14	5.7
1,1-Dichloroethene	75-35-4	0.021	D	0.067	0.56
Benzene	71-43-2	0.019	D	0.27	0.29
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.37
cis-1,2-Dichloroethene	156-59-2	0.023	D	0.13	12
Ethyl Benzene	100-41-4	0.017	D	0.14	0.083 J
m,p-Xylene	108-38-3	0.022	D	0.29	0.29 J
o-Xylene	95-47-6	0.019	D	0.14	0.12 J
Tetrachloroethene	127-18-4	0.019	D	0.23	0.094 J
Toluene	108-88-3	0.031	D	0.13	0.32
trans-1,2-Dichloroethene	156-60-5	0.029	D	0.67	0.17 J
Trichloroethene	79-01-6	0.018	D	0.18	24
Vinyl Chloride	75-01-4	0.011	D	0.086	0.049 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	96

TRY-SSV-3

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011519-1		
Lab ID:	1901332-02A	**Date/Time Analyzed:**	1/22/19 01:57 PM
Date/Time Collected:	1/15/19 12:00 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012208

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
Methylene Chloride	75-09-2	~~0.20~~ 2.1	0.51	~~1.1~~ 2.1	2.1 ~~1.8~~	U

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	99
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	97

2/15/19

TR4-SSV-3

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011519-1		
Lab ID:	1901332-02B	**Date/Time Analyzed:**	1/22/19 01:57 PM
Date/Time Collected:	1/15/19 12:00 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012208sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.18	40
1,1-Dichloroethane	75-34-3	0.016	D	0.13	5.6
1,1-Dichloroethene	75-35-4	0.021	D	0.065	0.54
Benzene	71-43-2	0.018	D	0.26	0.33
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.39
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.13	12
Ethyl Benzene	100-41-4	0.016	D	0.14	0.13 J
m,p-Xylene	108-38-3	0.022	D	0.28	0.42
o-Xylene	95-47-6	0.019	D	0.14	0.20
Tetrachloroethene	127-18-4	0.019	D	0.22	0.091 J
Toluene	108-88-3	0.030	D	0.12	0.74
trans-1,2-Dichloroethene	156-60-5	0.028	D	0.65	0.15 J
Trichloroethene	79-01-6	0.017	D	0.18	23
Vinyl Chloride	75-01-4	0.011	D	0.084	0.039 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	96

2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR7-IA-3		
Lab ID:	1901332-06A	**Date/Time Analyzed:**	1/22/19 06:23 PM
Date/Time Collected:	1/15/19 08:38 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012212

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 1.1	0.51	1.1	1.1 ~~0.77 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	95

DMF 2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR7-IA-3		
Lab ID:	1901332-06B	**Date/Time Analyzed:**	1/22/19 06:23 PM
Date/Time Collected:	1/15/19 08:38 AM	**Dilution Factor:**	1.64
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012212sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.18	0.034 J
1,1-Dichloroethane	75-34-3	0.016	D	0.13	0.036 J
1,1-Dichloroethene	75-35-4	0.021	D	0.065	Not Detected
Benzene	71-43-2	0.018	D	0.26	2.5
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.41
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.13	0.16
Ethyl Benzene	100-41-4	0.016	D	0.14	1.5
m,p-Xylene	108-38-3	0.022	D	0.28	5.7
o-Xylene	95-47-6	0.019	D	0.14	1.9
Tetrachloroethene	127-18-4	0.019	D	0.22	0.097 J
Toluene	108-88-3	0.030	D	0.12	9.9
trans-1,2-Dichloroethene	156-60-5	0.028	D	0.65	Not Detected
Trichloroethene	79-01-6	0.017	D	0.18	1.1
Vinyl Chloride	75-01-4	0.011	D	0.084	0.024 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air-Toxics

Client ID:	TR7-SSV-3		
Lab ID:	1901332-05A	**Date/Time Analyzed:**	1/22/19 05:03 PM
Date/Time Collected:	1/15/19 08:37 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012211

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 2.4	0.52	~~1.2~~ 2.4	2.4 ~~1.2~~ U

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	110

DMS 2/5/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR7-SSV-3		
Lab ID:	1901332-05B	**Date/Time Analyzed:**	1/22/19 05:03 PM
Date/Time Collected:	1/15/19 08:37 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012211sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.021	D	0.18	1.3
1,1-Dichloroethane	75-34-3	0.016	D	0.14	0.34
1,1-Dichloroethene	75-35-4	0.021	D	0.067	0.10
Benzene	71-43-2	0.019	D	0.27	3.0
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.31
cis-1,2-Dichloroethene	156-59-2	0.023	D	0.13	0.48
Ethyl Benzene	100-41-4	0.017	D	0.14	2.2
m,p-Xylene	108-38-3	0.022	D	0.29	11
o-Xylene	95-47-6	0.019	D	0.14	4.5
Tetrachloroethene	127-18-4	0.019	D	0.23	0.42
Toluene	108-88-3	0.031	D	0.13	9.8
trans-1,2-Dichloroethene	156-60-5	0.029	D	0.67	Not Detected
Trichloroethene	79-01-6	0.018	D	0.18	80
Vinyl Chloride	75-01-4	0.011	D	0.086	0.53

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	108

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-IA-1		
Lab ID:	1901333-03A	**Date/Time Analyzed:**	1/23/19 05:37 PM
Date/Time Collected:	1/15/19 09:27 AM	**Dilution Factor:**	1.50
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012312

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
Methylene Chloride	75-09-2	~~0.18~~ 2.0	0.47	~~1.0~~ 2.0	2.0 ~~1.1~~	U

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	95

2/5/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-IA-1		
Lab ID:	1901333-03B	**Date/Time Analyzed:**	1/23/19 05:37 PM
Date/Time Collected:	1/15/19 09:27 AM	**Dilution Factor:**	1.50
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012312sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	D	0.16	0.49
1,1-Dichloroethane	75-34-3	0.014	D	0.12	0.30
1,1-Dichloroethene	75-35-4	0.019	D	0.059	0.31
Benzene	71-43-2	0.017	D	0.24	1.2
Carbon Tetrachloride	56-23-5	0.093	D	0.19	0.39
cis-1,2-Dichloroethene	156-59-2	0.020	D	0.12	0.90
Ethyl Benzene	100-41-4	0.015	D	0.13	1.1
m,p-Xylene	108-38-3	0.020	D	0.26	4.2
o-Xylene	95-47-6	0.017	D	0.13	2.4
Tetrachloroethene	127-18-4	0.017	D	0.20	0.32
Toluene	108-88-3	0.028	D	0.11	3.7
trans-1,2-Dichloroethene	156-60-5	0.026	D	0.59	0.039 J
Trichloroethene	79-01-6	0.016	D	0.16	3.2
Vinyl Chloride	75-01-4	0.0097	D	0.077	0.10

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-1		
Lab ID:	1901333-02A	**Date/Time Analyzed:**	1/23/19 03:00 PM
Date/Time Collected:	1/15/19 09:26 AM	**Dilution Factor:**	7.60
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012308

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.92~~ 5.3	2.4	5.3	5.3 ~~1.5 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	100

2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-1		
Lab ID:	1901333-02B	**Date/Time Analyzed:**	1/23/19 03:00 PM
Date/Time Collected:	1/15/19 09:26 AM	**Dilution Factor:**	7.60
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012308sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.095	D	0.83	31
1,1-Dichloroethane	75-34-3	0.072	D	0.62	50
1,1-Dichloroethene	75-35-4	0.096	D	0.30	4.0
Benzene	71-43-2	~~0.086~~ 1.2	D	1.2	~~0.24 J~~ 1.2 U
Carbon Tetrachloride	56-23-5	0.47	D	0.96	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.10	D	0.60	140
Ethyl Benzene	100-41-4	0.076	D	0.66	Not Detected
m,p-Xylene	108-38-3	0.10	D	1.3	0.22 J
o-Xylene	95-47-6	0.088	D	0.66	0.14 J
Tetrachloroethene	127-18-4	0.087	D	1.0	12
Toluene	108-88-3	0.14	D	0.57	0.23 J
trans-1,2-Dichloroethene	156-60-5	0.13	D	3.0	1.6 J
Trichloroethene	79-01-6	0.080	D	0.82	470
Vinyl Chloride	75-01-4	0.049	D	0.39	2.0

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	97

2/5/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-IA-2		
Lab ID:	1901333-05A	**Date/Time Analyzed:**	1/23/19 04:18 PM
Date/Time Collected:	1/15/19 09:46 AM	**Dilution Factor:**	1.70
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012310

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.20~~ 1.2	0.53	1.2	1.2 ~~0.46 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	94

2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-IA-2		
Lab ID:	1901333-05B	**Date/Time Analyzed:**	1/23/19 04:18 PM
Date/Time Collected:	1/15/19 09:46 AM	**Dilution Factor:**	1.70
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012310sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.021	D	0.18	0.67
1,1-Dichloroethane	75-34-3	0.016	D	0.14	0.41
1,1-Dichloroethene	75-35-4	0.021	D	0.067	0.31
Benzene	71-43-2	0.019	D	0.27	1.3
Carbon Tetrachloride	56-23-5	0.10	D	0.21	0.41
cis-1,2-Dichloroethene	156-59-2	0.023	D	0.13	1.2
Ethyl Benzene	100-41-4	0.017	D	0.15	1.2
m,p-Xylene	108-38-3	0.023	D	0.30	4.9
o-Xylene	95-47-6	0.020	D	0.15	3.1
Tetrachloroethene	127-18-4	0.019	D	0.23	0.36
Toluene	108-88-3	0.031	D	0.13	3.6
trans-1,2-Dichloroethene	156-60-5	0.029	D	0.67	0.041 J
Trichloroethene	79-01-6	0.018	D	0.18	4.3
Vinyl Chloride	75-01-4	0.011	D	0.087	0.13

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-2		
Lab ID:	1901333-04A	**Date/Time Analyzed:**	1/23/19 04:58 PM
Date/Time Collected:	1/15/19 09:45 AM	**Dilution Factor:**	3.12
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012311

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.38~~ 2.2	0.98	2.2	2.2 ~~0.92 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	105

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MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-2		
Lab ID:	1901333-04B	**Date/Time Analyzed:**	1/23/19 04:58 PM
Date/Time Collected:	1/15/19 09:45 AM	**Dilution Factor:**	3.12
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012311sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.039	D	0.34	52
1,1-Dichloroethane	75-34-3	0.030	D	0.25	12
1,1-Dichloroethene	75-35-4	0.039	D	0.12	0.18
Benzene	71-43-2	0.035	D	0.50	0.74
Carbon Tetrachloride	56-23-5	0.19	D	0.39	0.35 J
cis-1,2-Dichloroethene	156-59-2	0.043	D	0.25	22
Ethyl Benzene	100-41-4	0.031	D	0.27	1.2
m,p-Xylene	108-38-3	0.042	D	0.54	4.3
o-Xylene	95-47-6	0.036	D	0.27	2.6
Tetrachloroethene	127-18-4	0.036	D	0.42	11
Toluene	108-88-3	0.057	D	0.24	2.0
trans-1,2-Dichloroethene	156-60-5	0.054	D	1.2	0.41 J
Trichloroethene	79-01-6	0.033	D	0.34	270
Vinyl Chloride	75-01-4	0.020	D	0.16	0.63

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	103

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	TR8-IA-3		
Lab ID:	1901333-01A	**Date/Time Analyzed:**	1/23/19 02:21 PM
Date/Time Collected:	1/15/19 09:12 AM	**Dilution Factor:**	2.03
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012307

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.24~~ 1.4	0.63	1.4	1.4 ~~0.86 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	95

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eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	TR8-IA-3		
Lab ID:	1901333-01B	**Date/Time Analyzed:**	1/23/19 02:21 PM
Date/Time Collected:	1/15/19 09:12 AM	**Dilution Factor:**	2.03
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012307sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.025	D	0.22	0.35
1,1-Dichloroethane	75-34-3	0.019	D	0.16	0.26
1,1-Dichloroethene	75-35-4	0.026	D	0.080	0.44
Benzene	71-43-2	0.023	D	0.32	1.9
Carbon Tetrachloride	56-23-5	0.13	D	0.26	0.42
cis-1,2-Dichloroethene	156-59-2	0.028	D	0.16	0.75
Ethyl Benzene	100-41-4	0.020	D	0.18	1.4
m,p-Xylene	108-38-3	0.027	D	0.35	5.3
o-Xylene	95-47-6	0.023	D	0.18	2.3
Tetrachloroethene	127-18-4	0.023	D	0.28	0.37
Toluene	108-88-3	0.037	D	0.15	6.4
trans-1,2-Dichloroethene	156-60-5	0.035	D	0.80	Not Detected
Trichloroethene	79-01-6	0.021	D	0.22	2.4
Vinyl Chloride	75-01-4	0.013	D	0.10	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-3		
Lab ID:	1901332-07A	**Date/Time Analyzed:**	1/22/19 07:14 PM
Date/Time Collected:	1/15/19 09:11 AM	**Dilution Factor:**	5.37
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012213

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.65~~ 3.7	1.7	3.7	3.7 ~~1.8 J~~ U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	98

2/15/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR8-SSV-3		
Lab ID:	1901332-07B	**Date/Time Analyzed:**	1/22/19 07:14 PM
Date/Time Collected:	1/15/19 09:11 AM	**Dilution Factor:**	5.37
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012213sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.067	D	0.59	44
1,1-Dichloroethane	75-34-3	0.051	D	0.43	23
1,1-Dichloroethene	75-35-4	0.068	D	0.21	Not Detected
Benzene	71-43-2	0.061	D	0.86	0.44 J
Carbon Tetrachloride	56-23-5	0.33	D	0.68	0.58 J
cis-1,2-Dichloroethene	156-59-2	0.074	D	0.42	30
Ethyl Benzene	100-41-4	0.054	D	0.47	0.11 J
m,p-Xylene	108-38-3	0.072	D	0.93	0.33 J
o-Xylene	95-47-6	0.062	D	0.47	0.18 J
Tetrachloroethene	127-18-4	0.061	D	0.73	16
Toluene	108-88-3	0.099	D	0.40	1.1
trans-1,2-Dichloroethene	156-60-5	0.093	D	2.1	0.86 J
Trichloroethene	79-01-6	0.056	D	0.58	350
Vinyl Chloride	75-01-4	0.035	D	0.27	0.34

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-2		
Lab ID:	1901335-02A	**Date/Time Analyzed:**	1/23/19 06:17 PM
Date/Time Collected:	1/16/19 07:47 AM	**Dilution Factor:**	1.55
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012313

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.19~~ 1.1	0.48	1.1	~~0.76 J~~ 1.1 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	95

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-2		
Lab ID:	1901335-02B	**Date/Time Analyzed:**	1/23/19 06:17 PM
Date/Time Collected:	1/16/19 07:47 AM	**Dilution Factor:**	1.55
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012313sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	D	0.17	0.024 J
1,1-Dichloroethane	75-34-3	0.015	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.020	D	0.061	Not Detected
Benzene	71-43-2	0.018	D	0.25	2.0
Carbon Tetrachloride	56-23-5	0.096	D	0.20	0.41
cis-1,2-Dichloroethene	156-59-2	0.021	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.015	D	0.13	2.4
m,p-Xylene	108-38-3	0.021	D	0.27	8.7
o-Xylene	95-47-6	0.018	D	0.13	3.3
Tetrachloroethene	127-18-4	0.018	D	0.21	0.70
Toluene	108-88-3	0.028	D	0.12	20
trans-1,2-Dichloroethene	156-60-5	0.027	D	0.61	0.053 J
Trichloroethene	79-01-6	0.016	D	0.17	0.080 J
Vinyl Chloride	75-01-4	0.010	D	0.079	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	94

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-SSV-2		
Lab ID:	1901335-01A	**Date/Time Analyzed:**	1/23/19 09:22 PM
Date/Time Collected:	1/16/19 07:46 AM	**Dilution Factor:**	15.8
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012317

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~1.9~~ 11	4.9	11	~~2.3 J~~ 11 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	99

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-SSV-2		
Lab ID:	1901335-01B	**Date/Time Analyzed:**	1/23/19 09:22 PM
Date/Time Collected:	1/16/19 07:46 AM	**Dilution Factor:**	15.8
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012317sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.20	D	1.7	0.27 J
1,1-Dichloroethane	75-34-3	0.15	D	1.3	0.16 J
1,1-Dichloroethene	75-35-4	0.20	D	0.63	Not Detected
Benzene	71-43-2	0.18	D	2.5	2.9
Carbon Tetrachloride	56-23-5	0.98	D	2.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.22	D	1.2	Not Detected
Ethyl Benzene	100-41-4	0.16	D	1.4	3.8
m,p-Xylene	108-38-3	0.21	D	2.7	16
o-Xylene	95-47-6	0.18	D	1.4	6.7
Tetrachloroethene	127-18-4	0.18	D	2.1	1.4 J
Toluene	108-88-3	0.29	D	1.2	13
trans-1,2-Dichloroethene	156-60-5	0.27	D	6.3	Not Detected
Trichloroethene	79-01-6	0.16	D	1.7	0.79 J
Vinyl Chloride	75-01-4	0.10	D	0.81	0.68 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-4		
Lab ID:	1901335-04A	**Date/Time Analyzed:**	1/23/19 10:02 PM
Date/Time Collected:	1/16/19 08:07 AM	**Dilution Factor:**	1.50
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012318

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.18~~ 1.0	0.47	1.0	~~0.47 J~~ 1.00

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	93

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-4		
Lab ID:	1901335-04B	**Date/Time Analyzed:**	1/23/19 10:02 PM
Date/Time Collected:	1/16/19 08:07 AM	**Dilution Factor:**	1.50
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012318sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	D	0.16	Not Detected
1,1-Dichloroethane	75-34-3	0.014	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.019	D	0.059	Not Detected
Benzene	71-43-2	0.017	D	0.24	1.8
Carbon Tetrachloride	56-23-5	0.093	D	0.19	0.41
cis-1,2-Dichloroethene	156-59-2	0.020	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.015	D	0.13	1.4
m,p-Xylene	108-38-3	0.020	D	0.26	5.5
o-Xylene	95-47-6	0.017	D	0.13	2.2
Tetrachloroethene	127-18-4	0.017	D	0.20	0.099 J
Toluene	108-88-3	0.028	D	0.11	25
trans-1,2-Dichloroethene	156-60-5	0.026	D	0.59	Not Detected
Trichloroethene	79-01-6	0.016	D	0.16	0.047 J
Vinyl Chloride	75-01-4	0.0097	D	0.077	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	92

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-SSV-4		
Lab ID:	1901335-03A	**Date/Time Analyzed:**	1/24/19 06:36 AM
Date/Time Collected:	1/16/19 08:06 AM	**Dilution Factor:**	8.20
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012320

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.99~~ 5.7	2.6	5.7	~~1.6 J~~ 5.7 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	101

DMK 2/8/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-SSV-4		
Lab ID:	1901335-03B	**Date/Time Analyzed:**	1/24/19 06:36 AM
Date/Time Collected:	1/16/19 08:06 AM	**Dilution Factor:**	8.20
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012320sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.10	D	0.89	0.20 J
1,1-Dichloroethane	75-34-3	0.078	D	0.66	0.13 J
1,1-Dichloroethene	75-35-4	0.10	D	0.32	0.55
Benzene	71-43-2	0.093	D	1.3	1.7
Carbon Tetrachloride	56-23-5	0.51	D	1.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.11	D	0.65	100
Ethyl Benzene	100-41-4	0.082	D	0.71	12
m,p-Xylene	108-38-3	0.11	D	1.4	80
o-Xylene	95-47-6	0.095	D	0.71	63
Tetrachloroethene	127-18-4	0.093	D	1.1	17
Toluene	108-88-3	0.15	D	0.62	12
trans-1,2-Dichloroethene	156-60-5	0.14	D	3.2	24
Trichloroethene	79-01-6	0.086	D	0.88	110
Vinyl Chloride	75-01-4	0.053	D	0.42	3.7

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-6		
Lab ID:	1901335-07A	**Date/Time Analyzed:**	1/23/19 06:57 PM
Date/Time Collected:	1/16/19 08:39 AM	**Dilution Factor:**	1.48
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012314

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.18	0.46	1.0	2.4 J

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	89

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-IA-6		
Lab ID:	1901335-07B	**Date/Time Analyzed:**	1/23/19 06:57 PM
Date/Time Collected:	1/16/19 08:39 AM	**Dilution Factor:**	1.48
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012314sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.018	D	0.16	0.019 J
1,1-Dichloroethane	75-34-3	0.014	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.019	D	0.059	Not Detected
Benzene	71-43-2	0.017	D	0.24	1.1
Carbon Tetrachloride	56-23-5	0.092	D	0.19	0.37
cis-1,2-Dichloroethene	156-59-2	0.020	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.015	D	0.13	0.75
m,p-Xylene	108-38-3	0.020	D	0.26	2.7
o-Xylene	95-47-6	0.017	D	0.13	1.0
Tetrachloroethene	127-18-4	0.017	D	0.20	0.11 J
Toluene	108-88-3	0.027	D	0.11	12
trans-1,2-Dichloroethene	156-60-5	0.026	D	0.59	Not Detected
Trichloroethene	79-01-6	0.016	D	0.16	0.034 J
Vinyl Chloride	75-01-4	0.0096	D	0.076	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	92

TR19-1A-6

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MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011619-~~1~~ 2		
Lab ID:	1901335-08A	**Date/Time Analyzed:**	1/23/19 07:37 PM
Date/Time Collected:	1/16/19 12:00 AM	**Dilution Factor:**	1.61
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012315

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.19~~ 1.1	0.50	1.1	~~0.52 J~~ 1.1 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	92

2/18/19

TR19-1A-6

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MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011619~~-1~~ 2		
Lab ID:	1901335-08B	**Date/Time Analyzed:**	1/23/19 07:37 PM
Date/Time Collected:	1/16/19 12:00 AM	**Dilution Factor:**	1.61
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012315sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.18	0.023 J
1,1-Dichloroethane	75-34-3	0.015	D	0.13	Not Detected
1,1-Dichloroethene	75-35-4	0.020	D	0.064	Not Detected
Benzene	71-43-2	0.018	D	0.26	1.1
Carbon Tetrachloride	56-23-5	0.10	D	0.20	0.40
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.13	0.084 J
Ethyl Benzene	100-41-4	0.016	D	0.14	0.78
m,p-Xylene	108-38-3	0.021	D	0.28	2.8
o-Xylene	95-47-6	0.018	D	0.14	1.1
Tetrachloroethene	127-18-4	0.018	D	0.22	0.083 J
Toluene	108-88-3	0.030	D	0.12	12
trans-1,2-Dichloroethene	156-60-5	0.028	D	0.64	Not Detected
Trichloroethene	79-01-6	0.017	D	0.17	0.30 J
Vinyl Chloride	75-01-4	0.010	D	0.082	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	92

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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Client ID:	TR19-SSV-6		
Lab ID:	1901335-05A	**Date/Time Analyzed:**	1/24/19 04:35 PM
Date/Time Collected:	1/16/19 08:38 AM	**Dilution Factor:**	16.4
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012411

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	2.0	5.1	11	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	101

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR19-SSV-6		
Lab ID:	1901335-05B	**Date/Time Analyzed:**	1/24/19 04:35 PM
Date/Time Collected:	1/16/19 08:38 AM	**Dilution Factor:**	16.4
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012411sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.20	D	1.8	Not Detected
1,1-Dichloroethane	75-34-3	0.16	D	1.3	Not Detected
1,1-Dichloroethene	75-35-4	0.21	D	0.65	Not Detected
Benzene	71-43-2	~~0.18~~ 2.6	D	2.6	~~1.4 J~~ 2.6 U
Carbon Tetrachloride	56-23-5	1.0	D	2.1	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.22	D	1.3	Not Detected
Ethyl Benzene	100-41-4	0.16	D	1.4	0.80 J
m,p-Xylene	108-38-3	0.22	D	2.8	3.2
o-Xylene	95-47-6	0.19	D	1.4	1.2 J
Tetrachloroethene	127-18-4	0.19	D	2.2	0.24 J
Toluene	108-88-3	0.30	D	1.2	12
trans-1,2-Dichloroethene	156-60-5	0.28	D	6.5	Not Detected
Trichloroethene	79-01-6	0.17	D	1.8	0.24 J
Vinyl Chloride	75-01-4	0.11	D	0.84	0.40 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	102

2/18/19

TR19-SSV-6

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MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011619-1		
Lab ID:	1901335-06A	**Date/Time Analyzed:**	1/24/19 05:32 PM
Date/Time Collected:	1/16/19 12:00 AM	**Dilution Factor:**	16.1
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012412

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	1.9	5.0	11	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	101

TR19-SSV-6

eurofins | Air Toxics

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client ID:	FD-011619-1		
Lab ID:	1901335-06B	**Date/Time Analyzed:**	1/24/19 05:32 PM
Date/Time Collected:	1/16/19 12:00 AM	**Dilution Factor:**	16.1
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012412sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.20	D	1.8	Not Detected
1,1-Dichloroethane	75-34-3	0.15	D	1.3	Not Detected
1,1-Dichloroethene	75-35-4	0.20	D	0.64	Not Detected
Benzene	71-43-2	~~0.18~~ 2.6	D	2.6	~~1.4 J~~ 2.6 U
Carbon Tetrachloride	56-23-5	1.0	D	2.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.22	D	1.3	Not Detected
Ethyl Benzene	100-41-4	0.16	D	1.4	0.75 J
m,p-Xylene	108-38-3	0.21	D	2.8	3.2
o-Xylene	95-47-6	0.18	D	1.4	1.2 J
Tetrachloroethene	127-18-4	0.18	D	2.2	0.26 J
Toluene	108-88-3	0.30	D	1.2	12
trans-1,2-Dichloroethene	156-60-5	0.28	D	6.4	Not Detected
Trichloroethene	79-01-6	0.17	D	1.7	0.24 J
Vinyl Chloride	75-01-4	0.10	D	0.82	0.42 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	102

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-9		
Lab ID:	1901355-06A	**Date/Time Analyzed:**	1/28/19 08:44 PM
Date/Time Collected:	1/17/19 08:24 AM	**Dilution Factor:**	1.78
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21012815

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.90	0.90	1.2	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	127
4-Bromofluorobenzene	460-00-4	70-130	88
Toluene-d8	2037-26-5	70-130	102

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-9		
Lab ID:	1901355-06B	**Date/Time Analyzed:**	1/28/19 08:44 PM
Date/Time Collected:	1/17/19 08:24 AM	**Dilution Factor:**	1.78
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21012815sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.069	0.087	0.19	0.076 J
1,1-Dichloroethane	75-34-3	0.050	0.065	0.14	Not Detected
1,1-Dichloroethene	75-35-4	0.060	0.064	0.070	Not Detected
Benzene	71-43-2	0.21	0.21	0.28	1.7
Carbon Tetrachloride	56-23-5	0.084	0.10	0.22	0.59
cis-1,2-Dichloroethene	156-59-2	0.074	0.074	0.14	Not Detected
Ethyl Benzene	100-41-4	0.094	0.094	0.15	1.1
m,p-Xylene	108-38-3	0.11	0.11	0.31	4.1
o-Xylene	95-47-6	0.12	0.12	0.15	1.6
Tetrachloroethene	127-18-4	0.039	0.11	0.24	0.084 J
Toluene	108-88-3	0.078	0.078	0.13	18
trans-1,2-Dichloroethene	156-60-5	0.058	0.064	0.70	Not Detected
Trichloroethene	79-01-6	0.050	0.086	0.19	0.071 J
Vinyl Chloride	75-01-4	0.016	0.041	0.091	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	126
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-SSV-9		
Lab ID:	1901355-05A	**Date/Time Analyzed:**	1/31/19 07:20 AM
Date/Time Collected:	1/17/19 08:23 AM	**Dilution Factor:**	10.5
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msda.i / a013026

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	5.2	23	29	Not Detected
1,1-Dichloroethane	75-34-3	4.2	17	21	Not Detected
1,1-Dichloroethene	75-35-4	7.9	17	21	Not Detected
Benzene	71-43-2	2.3	13	17	5.4 J
Carbon Tetrachloride	56-23-5	7.9	26	33	Not Detected
cis-1,2-Dichloroethene	156-59-2	6.2	17	21	Not Detected
Ethyl Benzene	100-41-4	8.7	18	23	1200
m,p-Xylene	108-38-3	3.6	18	23	4800
Methylene Chloride	75-09-2	9.5	36	180	Not Detected
o-Xylene	95-47-6	3.6	18	23	1000
Tetrachloroethene	127-18-4	6.4	28	36	Not Detected
Toluene	108-88-3	2.8	16	20	55
trans-1,2-Dichloroethene	156-60-5	5.8	17	21	Not Detected
Trichloroethene	79-01-6	9.0	22	28	Not Detected
Vinyl Chloride	75-01-4	5.1	11	13	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	94

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-10		
Lab ID:	1901355-04A	**Date/Time Analyzed:**	1/25/19 07:55 PM
Date/Time Collected:	1/17/19 08:09 AM	**Dilution Factor:**	1.55
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012515

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.19	0.48	1.1	2.1

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	92

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-10		
Lab ID:	1901355-04B	**Date/Time Analyzed:**	1/25/19 07:55 PM
Date/Time Collected:	1/17/19 08:09 AM	**Dilution Factor:**	1.55
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012515sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	D	0.17	0.052 J
1,1-Dichloroethane	75-34-3	0.015	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.020	D	0.061	Not Detected
Benzene	71-43-2	0.018	D	0.25	1.2
Carbon Tetrachloride	56-23-5	0.096	D	0.20	0.42
cis-1,2-Dichloroethene	156-59-2	0.021	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.015	D	0.13	0.97
m,p-Xylene	108-38-3	0.021	D	0.27	3.6
o-Xylene	95-47-6	0.018	D	0.13	1.4
Tetrachloroethene	127-18-4	0.018	D	0.21	0.088 J
Toluene	108-88-3	0.028	D	0.12	23
trans-1,2-Dichloroethene	156-60-5	0.027	D	0.61	Not Detected
Trichloroethene	79-01-6	0.016	D	0.17	0.048 J
Vinyl Chloride	75-01-4	0.010	D	0.079	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	92

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-SSV-10		
Lab ID:	1901355-03A	**Date/Time Analyzed:**	1/25/19 07:16 PM
Date/Time Collected:	1/17/19 08:08 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012514

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.19	0.49	1.1	1.5

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-SSV-10		
Lab ID:	1901355-03B	**Date/Time Analyzed:**	1/25/19 07:16 PM
Date/Time Collected:	1/17/19 08:08 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012514sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.17	0.027 J
1,1-Dichloroethane	75-34-3	0.015	D	0.13	0.020 J
1,1-Dichloroethene	75-35-4	0.020	D	0.062	Not Detected
Benzene	71-43-2	0.018	D	0.25	0.64
Carbon Tetrachloride	56-23-5	0.098	D	0.20	0.37
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.016	D	0.14	0.17
m,p-Xylene	108-38-3	0.021	D	0.27	1.0
o-Xylene	95-47-6	0.018	D	0.14	0.25
Tetrachloroethene	127-18-4	0.018	D	0.21	0.072 J
Toluene	108-88-3	0.029	D	0.12	3.0
trans-1,2-Dichloroethene	156-60-5	0.027	D	0.62	Not Detected
Trichloroethene	79-01-6	0.016	D	0.17	0.28
Vinyl Chloride	75-01-4	0.010	D	0.080	0.24

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-11		
Lab ID:	1901355-02A	**Date/Time Analyzed:**	1/24/19 10:41 PM
Date/Time Collected:	1/17/19 07:53 AM	**Dilution Factor:**	1.53
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012419

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.18~~ 1.1	0.48	1.1	~~0.81 J~~ 1.1 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	93

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-IA-11		
Lab ID:	1901355-02B	**Date/Time Analyzed:**	1/24/19 10:41 PM
Date/Time Collected:	1/17/19 07:53 AM	**Dilution Factor:**	1.53
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012419sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	D	0.17	0.047 J
1,1-Dichloroethane	75-34-3	0.014	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.019	D	0.061	Not Detected
Benzene	71-43-2	0.017	D	0.24	1.2
Carbon Tetrachloride	56-23-5	0.095	D	0.19	0.40
cis-1,2-Dichloroethene	156-59-2	0.021	D	0.12	0.031 J
Ethyl Benzene	100-41-4	0.015	D	0.13	1.0
m,p-Xylene	108-38-3	0.020	D	0.26	3.8
o-Xylene	95-47-6	0.018	D	0.13	1.4
Tetrachloroethene	127-18-4	0.017	D	0.21	0.082 J
Toluene	108-88-3	0.028	D	0.12	23
trans-1,2-Dichloroethene	156-60-5	0.026	D	0.61	Not Detected
Trichloroethene	79-01-6	0.016	D	0.16	0.045 J
Vinyl Chloride	75-01-4	0.0099	D	0.078	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	93

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-SSV-11		
Lab ID:	1901355-01A	**Date/Time Analyzed:**	1/24/19 09:05 PM
Date/Time Collected:	1/17/19 07:52 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012417

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	~~0.19~~ 1.1	0.49	1.1	~~0.74 J~~ 1.1 U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	108

2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	TR20-SSV-11		
Lab ID:	1901355-01B	**Date/Time Analyzed:**	1/24/19 09:05 PM
Date/Time Collected:	1/17/19 07:52 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012417sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.020	D	0.17	0.047 J
1,1-Dichloroethane	75-34-3	0.015	D	0.13	0.033 J
1,1-Dichloroethene	75-35-4	0.020	D	0.062	Not Detected
Benzene	71-43-2	0.018	D	0.25	0.76
Carbon Tetrachloride	56-23-5	0.098	D	0.20	0.21
cis-1,2-Dichloroethene	156-59-2	0.022	D	0.12	Not Detected
Ethyl Benzene	100-41-4	0.016	D	0.14	1.9
m,p-Xylene	108-38-3	0.021	D	0.27	13
o-Xylene	95-47-6	0.018	D	0.14	6.5
Tetrachloroethene	127-18-4	0.018	D	0.21	0.10 J
Toluene	108-88-3	0.029	D	0.12	3.1
trans-1,2-Dichloroethene	156-60-5	0.027	D	0.62	Not Detected
Trichloroethene	79-01-6	0.016	D	0.17	0.36
Vinyl Chloride	75-01-4	0.010	D	0.080	0.36

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	105

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011519		
Lab ID:	1901333-06A	**Date/Time Analyzed:**	1/23/19 03:39 PM
Date/Time Collected:	1/15/19 10:00 AM	**Dilution Factor:**	1.46
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012309

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.18	0.46	1.0	9.1

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011519		
Lab ID:	1901333-06B	**Date/Time Analyzed:**	1/23/19 03:39 PM
Date/Time Collected:	1/15/19 10:00 AM	**Dilution Factor:**	1.46
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012309sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.018	D	0.16	0.019 J
1,1-Dichloroethane	75-34-3	0.014	D	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.018	D	0.058	Not Detected
Benzene	71-43-2	0.016	D	0.23	0.64
Carbon Tetrachloride	56-23-5	0.091	D	0.18	0.41
cis-1,2-Dichloroethene	156-59-2	0.020	D	0.12	0.032 J
Ethyl Benzene	100-41-4	0.014	D	0.13	0.26
m,p-Xylene	108-38-3	0.019	D	0.25	0.76
o-Xylene	95-47-6	0.017	D	0.13	0.14
Tetrachloroethene	127-18-4	0.017	D	0.20	0.080 J
Toluene	108-88-3	0.027	D	0.11	54
trans-1,2-Dichloroethene	156-60-5	0.025	D	0.58	Not Detected
Trichloroethene	79-01-6	0.015	D	0.16	0.12 J
Vinyl Chloride	75-01-4	0.0094	D	0.075	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011619		
Lab ID:	1901335-09A	**Date/Time Analyzed:**	1/23/19 10:43 PM
Date/Time Collected:	1/16/19 08:57 AM	**Dilution Factor:**	1.38
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012319

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.17	0.43	0.96	0.53 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	99

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011619		
Lab ID:	1901335-09B	**Date/Time Analyzed:**	1/23/19 10:43 PM
Date/Time Collected:	1/16/19 08:57 AM	**Dilution Factor:**	1.38
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20012319sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.017	D	0.15	0.020 J
1,1-Dichloroethane	75-34-3	0.013	D	0.11	Not Detected U
1,1-Dichloroethene	75-35-4	0.017	D	0.055	Not Detected U
Benzene	71-43-2	0.016	D	0.22	0.44 J
Carbon Tetrachloride	56-23-5	0.086	D	0.17	0.40 J
cis-1,2-Dichloroethene	156-59-2	0.019	D	0.11	Not Detected U
Ethyl Benzene	100-41-4	0.014	D	0.12	0.10 J
m,p-Xylene	108-38-3	0.018	D	0.24	0.27 J
o-Xylene	95-47-6	0.016	D	0.12	0.098 J
Tetrachloroethene	127-18-4	0.016	D	0.19	0.058 J
Toluene	108-88-3	0.025	D	0.10	1.7 J
trans-1,2-Dichloroethene	156-60-5	0.024	D	0.55	Not Detected U
Trichloroethene	79-01-6	0.014	D	0.15	0.034 J
Vinyl Chloride	75-01-4	0.0089	D	0.070	Not Detected U

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	98

dwk 2/18/19

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011719		
Lab ID:	1901355-07A	**Date/Time Analyzed:**	1/28/19 07:34 PM
Date/Time Collected:	1/17/19 08:37 AM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21012814

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.72	0.72	1.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	128
4-Bromofluorobenzene	460-00-4	70-130	87
Toluene-d8	2037-26-5	70-130	101

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	OA-011719		
Lab ID:	1901355-07B	**Date/Time Analyzed:**	1/28/19 07:34 PM
Date/Time Collected:	1/17/19 08:37 AM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21012814sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.056	0.071	0.16	Not Detected
1,1-Dichloroethane	75-34-3	0.040	0.052	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.049	0.051	0.057	Not Detected
Benzene	71-43-2	0.17	0.17	0.23	0.81
Carbon Tetrachloride	56-23-5	0.068	0.082	0.18	0.62
cis-1,2-Dichloroethene	156-59-2	0.060	0.060	0.11	Not Detected
Ethyl Benzene	100-41-4	0.076	0.076	0.12	0.12 J
m,p-Xylene	108-38-3	0.092	0.092	0.25	0.29
o-Xylene	95-47-6	0.095	0.095	0.12	0.12 J
Tetrachloroethene	127-18-4	0.031	0.088	0.20	0.048 J
Toluene	108-88-3	0.063	0.063	0.11	0.62
trans-1,2-Dichloroethene	156-60-5	0.046	0.051	0.57	Not Detected
Trichloroethene	79-01-6	0.041	0.070	0.15	0.054 J
Vinyl Chloride	75-01-4	0.013	0.033	0.074	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	127
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	103

ATTACHMENT B

SUPPORT DOCUMENTATION

AIR SAMPLE CHAIN OF CUSTODY RECORD

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202
PHONE: 716-856-5636
AECOM CONTACT: Ann Marie Krapovitch

PROJECT NUMBER: 60594804
SITE NAME: UTC - Carrier - Syracuse
SAMPLERS (PRINT/SIGNATURE): Tom Urban / Tom Urban
DELIVERY SERVICE: FedEx AIRBILL NO.:
LAB: Eurofins
SHIPPING CONTAINER ~ of ~
PAGE 1 of 1

	LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
01A	TR4	1/15/19	0808	TR4-SSV-3	AS	6	6L0922	23233	-30	-9		X				N1
02A	FD-1	1/15/19	-	FD-011519-1	AS	6	6L1808	23606	-30	-8		X			TR4-SSV-3	FD1
03A	TR4	1/15/19	0809	TR4-IA-3	AI	6	6L0408	23418	-30	-8.5		X				N1
04A	FD-2	1/15/19	-	FD-011519-2	AI	6	1186	23168	-29.5	-8		X			TR4-IA-3	FD2
05A	TR7	1/15/19	0837	TR7-SSV-3	AS	6	2279	23529	-30	-7.5		X				N1
06A	TR7	1/15/19	0838	TR7-IA-3	AI	6	6L1415	23310	-30	-7		X				N1
07A	TR8	1/15/19	0911	TR8-SSV-3	AS	6	6L0925	24248	-30	-6.5		X				N1
	TR8	1/15/19	0912	TR8-IA-3	AI	6	6L0859	23568	-30	-12		X				N1
	TR8	1/15/19	0926	TR8-SSV-1	AS	6	6L1077	23151	-30	-5.5		X				N1
	TR8	1/15/19	0927	TR8-IA-1	AI	6	6L0413	23424	-30	-5.5		X				N1
	TR8	1/15/19	0945	TR8-SSV-2	AS	6	6L1523	23394	-30	-6		X				N1
	TR8	1/15/19	0946	TR8-IA-2	AI	6	6L1453	23261	-30	-8.5		X				N1
	OA-1	1/15/19	1000	OA-011519	AA	6	6L1494	23111	-30	-6		X				N1

MATRIX CODES: AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS

SAMPLE TYPE CODES: N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
Tom Urban	1/14/19	1800	FEDEX	1/14/19	1010
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS: Custody Seal Intact? Y N (None) Temp NA FedEx

Distribution: Original accompanies shipment, copy to project file

URSF-075K/1 OF 1/CofCR/GCM

1901332

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
AECOM Environment
Workorder# 1901332

Seven 6 Liter Summa Canister (SIM Certified) samples were received on January 18, 2019. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: 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

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

As per project specific client request the laboratory has reported estimated values for target compound

hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Dilution was performed on sample TR8-SSV-3 due to the presence of high level target species.

Definition of Data Qualifying Flags

Nine 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.

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

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

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

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901332-08A	**Date/Time Analyzed:**	1/22/19 11:52 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012206a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.12	0.31	0.69	0.20 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	98

AIR SAMPLE CHAIN OF CUSTODY RECORD

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202
PHONE: 716-856-5636
AECOM CONTACT: Ann Marie Krapovitch

PROJECT NUMBER: 60594804
SITE NAME: UTC - Carrier - Syracuse
SAMPLERS (PRINT/SIGNATURE): Tom Urban / Tom Urban
DELIVERY SERVICE: FedEx AIRBILL NO.:

LAB: Eurofins
SHIPPING CONTAINER — of —
PAGE 1 of 1

	LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
	TR4	1/15/19	0808	TR4-SSV-3	AS	6	6L0922	23233	-30	-9		X				N1
	FD-1	1/15/19	—	FD-011519-1	AS	6	6L1808	23606	-30	-8		X				FD1
	TR4	1/15/19	0809	TR4-IA-3	AI	6	6L0408	23418	-30	-8.5		X				N2
	FD-2	1/15/19	—	FD-011519-2	AI	6	1186	23168	-29.5	-8		X				FD2
	TR7	1/15/19	0837	TR7-SSV-3	AS	6	2279	23529	-30	-7.5		X				N1
	TR7	1/15/19	0835	TR7-IA-3	AI	6	6L1415	23310	-30	-7		X				N1
	TR8	1/15/19	0911	TR8-SSV-3	AS	6	6L0925	24248	-30	-6.5		X				N1
01A	TR8	1/15/19	0912	TR8-IA-3	AI	6	6L0859	23568	-30	-12		X				N1
02A	TR8	1/15/19	0926	TR8-SSV-1	AS	6	6L1077	23151	-30	-5.5		X				N1
03A	TR8	1/15/19	0927	TR8-IA-1	AI	6	6L0413	23524	-30	-5.5		X				N1
04A	TR8	1/15/19	0445	TR8-SSV-2	AS	6	6L1523	23394	-30	-6		X				N1
05A	TR8	1/15/19	0946	TR8-IA-2	AI	6	6L1453	23261	-30	-8.5		X				N1
06A	OA-1	1/15/19	1000	OA-011519	AA	6	6L1494	23111	-30	-6		X				N1

MATRIX CODES: AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS

SAMPLE TYPE CODES: N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
Tom Urban	1/16/19	1800	FEDEX	1/16/19	1010
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS: Custody Seal Intact? Y N (None) Temp NA

Distribution: Original accompanies shipment, copy to project file

URSF-075K/1 OF 1/CofCR/GCM

1901333

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
AECOM Environment
Workorder# 1901333

Six 6 Liter Summa Canister (SIM Certified) samples were received on January 18, 2019. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: 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

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

As per project specific client request the laboratory has reported estimated values for target compound

hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Dilution was performed on samples TR8-SSV-1 and TR8-SSV-2 due to the presence of high level target species.

Definition of Data Qualifying Flags

Nine 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.

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

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

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

AIR SAMPLE CHAIN OF CUSTODY RECORD

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202
PHONE: 716-856-5636
AECOM CONTACT: Ann Marie Krafovitch

PROJECT NUMBER: 60594804
SITE NAME: UTC - Carrier - Syracuse
SAMPLERS (PRINT/SIGNATURE): Tom Urban / Tom Urban
DELIVERY SERVICE: FedEx AIRBILL NO.:
LAB: Eurofins
SHIPPING CONTAINER ___ of ___
PAGE 1 of 1

	LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
01A	TR19	1/16/19	0746	TR19-SSV-2	AS	6	6L1798	24265	-30+	-7		X				N1
02A	TR19	1/16/19	0747	TR19-IA-2	AI	6	6L1550	23565	-30+	-4.5		X				N1
03A	TR19	1/16/19	0806	TR19-SSV-4	AS	6	6L1707	23514	-30+	-7		X				N1
04A	TR19	1/16/19	0807	TR19-IA-4	AI	6	6L1666	24203	-30+	-4.5		X				N1
05A	TR19	1/16/19	0835	TR19-SSV-6	AS	6	6L1073	24274	-30+	-8		X				N1
06A	FD-1	1/16/19	—	FD-011619-1	AS	6	6L0423	24280	-30+	-8		X			TR19-SSV-6	FD1
07A	TR19	1/16/19	0839	TR19-IA-6	AI	6	6L1159	23112	-30+	-6		X				N1
08A	FD-2	1/16/19	—	FD-011619-2	AI	6	6L0812	23546	-30+	-8		X			TR19-IA-6	FD2
09A	OA-1	1/16/19	0857	OA-011619	AA	6	6L0182	23767	-30+	-7		X				N1
				UNUSED		>	6L1011	<							UNUSED	

MATRIX CODES: AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS

SAMPLE TYPE CODES: N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
Tom Urban	1/16/19	1800	FedEx	1/17/19	1010
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS: Custody Seal Intact? Y N None Temp NA FedEx

Distribution: Original accompanies shipment, copy to project file

URSF-075K/1 OF 1/ColCR/GCM

1901335

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
AECOM Environment
Workorder# 1901335

Nine 6 Liter Summa Canister (SIM Certified) samples were received on January 18, 2019. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: 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 was a difference (greater than or equal to 5.0" Hg) between the measured canister receipt vacuum and that which was reported on the Chain of Custody (COC) for sample OA-011619. A leak test indicated that the valve was functioning properly.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Dilution was performed on samples TR19-SSV-2, TR19-SSV-4, TR19-SSV-6 and FD-011619-1 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Nine 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.

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

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

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

eurofins | Air Toxics

WORK ORDER #: 1901335

Work Order Summary

CLIENT:	Ms. Ann Marie Kropovitch AECOM Environment 5015 Campuswood Drive Suite 104 East Syracuse, NY 13057	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	315.432.0506	**P.O. #**	60594804
FAX:		**PROJECT #**	60594804
DATE RECEIVED:	01/18/2019	**CONTACT:**	Rachel Selenis
DATE COMPLETED:	01/30/2019		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	TR19-SSV-2	Modified TO-15	4.5 "Hg	5.1 psi
01B	TR19-SSV-2	Modified TO-15	4.5 "Hg	5.1 psi
02A	TR19-IA-2	Modified TO-15	3.5 "Hg	5.4 psi
02B	TR19-IA-2	Modified TO-15	3.5 "Hg	5.4 psi
03A	TR19-SSV-4	Modified TO-15	5.3 "Hg	5.2 psi
03B	TR19-SSV-4	Modified TO-15	5.3 "Hg	5.2 psi
04A	TR19-IA-4	Modified TO-15	3.3 "Hg	5 psi
04B	TR19-IA-4	Modified TO-15	3.3 "Hg	5 psi
05A	TR19-SSV-6	Modified TO-15	5.3 "Hg	5.1 psi
05B	TR19-SSV-6	Modified TO-15	5.3 "Hg	5.1 psi
06A	FD-011619-1	Modified TO-15	4.9 "Hg	5.1 psi
06B	FD-011619-1	Modified TO-15	4.9 "Hg	5.1 psi
07A	TR19-IA-6	Modified TO-15	3.3 "Hg	4.7 psi
07B	TR19-IA-6	Modified TO-15	3.3 "Hg	4.7 psi
08A	FD-011619-1	Modified TO-15	5.3 "Hg	4.8 psi
08B	FD-011619-1	Modified TO-15	5.3 "Hg	4.8 psi
09A	OA-011619	Modified TO-15	1 "Hg	4.9 psi
09B	OA-011619	Modified TO-15	1 "Hg	4.9 psi
10A	Lab Blank	Modified TO-15	NA	NA
10B	Lab Blank	Modified TO-15	NA	NA
10C	Lab Blank	Modified TO-15	NA	NA
10D	Lab Blank	Modified TO-15	NA	NA
11A	CCV	Modified TO-15	NA	NA

Continued on next page

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901333-07B	**Date/Time Analyzed:**	1/23/19 11:55 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012306sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.012	D	0.11	Not Detected
1,1-Dichloroethane	75-34-3	0.0095	D	0.081	Not Detected
1,1-Dichloroethene	75-35-4	0.013	D	0.040	Not Detected
Benzene	71-43-2	0.011	D	0.16	0.012 J
Carbon Tetrachloride	56-23-5	0.062	D	0.12	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.014	D	0.079	Not Detected
Ethyl Benzene	100-41-4	0.010	D	0.087	Not Detected
m,p-Xylene	108-38-3	0.013	D	0.17	Not Detected
o-Xylene	95-47-6	0.012	D	0.087	Not Detected
Tetrachloroethene	127-18-4	0.011	D	0.14	Not Detected
Toluene	108-88-3	0.018	D	0.075	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.017	D	0.40	Not Detected
Trichloroethene	79-01-6	0.010	D	0.11	Not Detected
Vinyl Chloride	75-01-4	0.0065	D	0.051	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901335-10C	**Date/Time Analyzed:**	1/24/19 03:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012410a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.12	0.31	0.69	0.22 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901335-10A	**Date/Time Analyzed:**	1/23/19 11:55 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012306a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.12	0.31	0.69	0.31 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	97

AIR SAMPLE
CHAIN OF CUSTODY RECORD

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202
PHONE: 716-856-5636
AECOM CONTACT: Ann Marie Krapcitch

PROJECT NUMBER: 60594804
SITE NAME: VTC - Carrier - Syracuse

SAMPLERS (PRINT/SIGNATURE): Tom Urban / Tom Urban

DELIVERY SERVICE: FedEx AIRBILL NO.:

LAB: Eurofins
SHIPPING CONTAINER — of —
PAGE 1 of 1

	LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
01A	TR20	1/17/19	0752	TR20-SSV-11	AS	6	6L1809	23222	-30	-6.5		X				N
02A	TR20	1/17/19	0753	TR20-IA-11	AI	6	1314	23227	-30	-6		X				N
03A	TR20	1/17/19	0808	TR20-SSV-10	AS	6	6L1211	23380	-30	-6.5		X				N
04A	TR20	1/17/19	0809	TR20-IA-10	AI	6	6L1633	23824	-30	-6		X				N
05A	TR20	1/17/19	0823	TR20-SSV-9	AS	6	6L1378	23773	-30	-7		X				N
06A	TR20	1/17/19	0824	TR20-IA-9	AI	6	6L1233	23202	-30	-9.5		X				N
07A	OA-1	1/17/19	0837	OA-011719	AA	6	6L0537	23457	-30	-6.5		X				N
																N

FedEx

Custody Seal Intact?
Y N None Temp NA

MATRIX CODES	AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS
SAMPLE TYPE CODES	N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
Tom Urban	1/17/19	1500	GATR	1/21/19	0905
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS

Distribution: Original accompanies shipment, copy to project file

URSF-076K/1 OF 1/CofCR/GCM

1901355

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
AECOM Environment
Workorder# 1901355

Seven 6 Liter Summa Canister (SIM Certified) samples were received on January 21, 2019. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: 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

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Sample TR20-SSV-9 was transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target compounds.

Dilution was performed on sample TR20-SSV-9 due to the presence of high level target species.

Definition of Data Qualifying Flags

Nine 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.

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

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

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

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901355-08A	**Date/Time Analyzed:**	1/24/19 03:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012410a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.12	0.31	0.69	0.22 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

eurofins | Air Toxics

Client ID:	Lab Blank		
Lab ID:	1901355-08C	**Date/Time Analyzed:**	1/25/19 12:29 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20012506a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	75-09-2	0.12	0.31	0.69	0.19 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	99

DATA USABILITY SUMMARY REPORT

VAPOR INTRUSION INVESTIGATION
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY
NYSDEC SITE ID# 734043

Analyses Performed by:

PACE ANALYTICAL
MOUNT JULIET, TN 37122

Prepared for:

UNITED TECHNOLOGIES CORP.
UTC SHARED REMEDIATION SERVICES
FARMINGTON, CT 06032

Prepared by:

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202

JUNE 2019

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1

2.0 ANALYTICAL METHODOLOGIES/DATA VALIDATION PROCEDURES 1

3.0 DATA DELIVERABLE COMPLETENESS 2

4.0 SAMPLE RECEIPT/HOLDING TIMES 2

5.0 NONCONFORMANCES 2

6.0 SAMPLE RESULTS AND REPORTING 2

7.0 SUMMARY 2

TABLES
(Following Text)

Table 1 Validated Indoor Air and Outdoor Air Sample Results

ATTACHMENTS

Attachment A Validated Form I's

Attachment B Support Documentation

1.0 INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B, Guidance for Data Deliverables and the Development of Data Usability Summary Reports,* May 2010. Discussed in this DUSR are analytical data for 3 indoor air samples, 1 indoor air field duplicate, and 1 ambient (outdoor) air sample collected May 1, 2019. The samples were collected in support of the Soil Vapor Intrusion Study for the UTC/Carrier site (NYSDEC Site #734043), located in Syracuse, New York.

2.0 ANALYTICAL METHODOLOGIES/DATA VALIDATION PROCEDURES

All samples were sent to Pace Analytical (Mount Juliet, TN) for analysis. The samples were analyzed for select volatile organic compounds (VOCs) following United States Environmental Protection Agency (USEPA) *Compendium Method TO-15, Determination of VOCs in Air Collected in Specially Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS),* EPA/625/R-96/010b, January 1999.

A limited data validation was performed in accordance with the guidelines in the following USEPA Region II document:

- *Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15, SOP HW-31, Rev. 6,* December 2016.

The limited validation included: a completeness review of all required deliverables; holding times; a review of quality control (QC) results [blanks, instrument tunings, calibration standards, duplicate analyses, and laboratory control sample (LCS) recoveries] to determine if the data are within the protocol-required limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; an evaluation of the raw data to confirm the results provided in the data summary sheets; and a review of laboratory data qualifiers.

No qualifications were applied to the data during the limited data validation. Definitions of USEPA data qualifiers are presented at the end of this text. The validated analytical results are presented on Table 1. Copies of validated laboratory analytical summaries (Form Is) are presented in Attachment A. Documentation supporting the qualification of data is presented in Attachment B. Only analytical deviations affecting data usability are discussed in this report.

3.0 DATA DELIVERABLE COMPLETENESS

Full deliverable data packages (i.e., NYSDEC ASP (Category B or equivalent) were provided by the

laboratory, which included all reporting forms and raw data necessary to fully evaluate and verify the reported analytical results.

4.0 SAMPLE RECEIPT/HOLDING TIMES

All samples were received by the laboratory intact and under proper chain-of-custody (COC). All samples were analyzed within the required holding times.

5.0 NONCONFORMANCES

- **Laboratory Blanks**

  Trans-1,2-dichloroethene was detected in the method blank at a level less the reporting limit (RL) but greater than the method detection limit (MDL) (i.e., 'J' result). The lab applied B qualifiers to the affected samples. Since the sample results were much greater than the RL, no qualification was required and the 'B' qualifiers were was removed during the data validation.

6.0 SAMPLE RESULTS AND REPORTING

All quantitation/detection limits were reported in accordance with method requirements and were adjusted for sample volume and dilution factors.

A field duplicate was collected for indoor air sample TR8-IA-6. The field duplicate relative percent differences (RPDs) exhibited good analytical precision (i.e., RPD < 50% when parent and/or field duplicate results are detected).

7.0 SUMMARY

All sample analyses were found to be compliant with the method criteria. All sample results are usable as reported. AECOM does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist  **Date:** 6/7/19

Reviewed By: Peter R. Fairbanks, Senior Chemist  **Date:** 6/7/19

DEFINITIONS OF USEPA DATA QUALIFIERS

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 low.

UJ – The analyte was analyzed for, but 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 quality control criteria. The analyte may or may not be present in the sample.

D – The sample result was reported from a secondary dilution analysis.

TABLE 1
VALIDATED INDOOR AIR AND OUTDOOR AIR SAMPLE RESULTS
UTC/CARRIER SITE

Location ID		FIELDQC	TR-08	TR-08	TR-08	TR-08
Sample ID		OA-050119	FD-IA-05119	TR8-IA-4	TR8-IA-5	TR8-IA-6
Matrix		Outdoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/01/19	05/01/19	05/01/19	05/01/19	05/01/19
Parameter	Units		Field Duplicate (1-1)			
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/M3	0.109 U	0.252	0.552	0.368	0.242
1,1-Dichloroethane	UG/M3	0.0802 U	0.184	0.355	0.260	0.175
1,1-Dichloroethene	UG/M3	0.0793 U	0.0793 U	0.0793 U	0.0793 U	0.0793 U
1,2-Dichloroethene (cis)	UG/M3	0.0793 U	0.478	0.913	0.695	0.469
1,2-Dichloroethene (trans)	UG/M3	0.0793 U	0.209	0.175	0.176	0.191
Benzene	UG/M3	0.264	0.490	0.529	0.529	0.517
Carbon tetrachloride	UG/M3	0.393	0.405	0.413	0.410	0.403
Ethylbenzene	UG/M3	0.130 U	0.592	0.761	0.713	0.686
Methylene chloride	UG/M3	0.750	0.694 U	0.724	0.694 U	0.694 U
Tetrachloroethene	UG/M3	0.136 U	0.168	0.403	0.228	0.189
Toluene	UG/M3	0.836	3.65	2.94	3.24	3.61
Trichloroethene	UG/M3	0.107 U	1.56	3.94	2.48	1.64
Vinyl chloride	UG/M3	0.0511 U	0.0516	0.0679	0.0657	0.0511 U
m&p-Xylene	UG/M3	1.73 U	2.25	2.93	2.87	2.38
o-Xylene	UG/M3	0.867 U	1.40	1.95	2.30	1.47

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/6/19
CHECKED BY: PRF 6/7/19

Detection Limits shown are PQL

ATTACHMENT A

VALIDATED FORM I'S

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.166	0.529		1	WG1278443
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0655	0.413		1	WG1278443
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	0.0886	0.355		1	WG1278443
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1278443
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	0.230	0.913		1	WG1278443
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	0.0441	0.175	B	1	WG1278443
Ethylbenzene	100-41-4	106	0.0300	0.130	0.175	0.761		1	WG1278443
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.208	0.724		1	WG1275670
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0593	0.403		1	WG1278443
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	0.102	0.552		1	WG1278443
Toluene	108-88-3	92.10	0.200	0.753	0.781	2.94		1	WG1275670
Trichloroethylene	79-01-6	131	0.0200	0.107	0.735	3.94		1	WG1278443
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	0.0266	0.0679		1	WG1278443
m&p-Xylene	1330-20-7	106	0.400	1.73	0.677	2.93		1	WG1275670
o-Xylene	95-47-6	106	0.200	0.867	0.449	1.95		1	WG1275670
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1278443
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.8*				WG1275670

DWK 6/5/19

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.166	0.529		1	WG1278443
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0650	0.410		1	WG1278443
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	0.0648	0.260		1	WG1278443
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1278443
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	0.175	0.695		1	WG1278443
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	0.0443	0.176	B	1	WG1278443
Ethylbenzene	100-41-4	106	0.0300	0.130	0.164	0.713		1	WG1278443
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1275670
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0335	0.228		1	WG1278443
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	0.0677	0.368		1	WG1278443
Toluene	108-88-3	92.10	0.200	0.753	0.860	3.24		1	WG1275670
Trichloroethylene	79-01-6	131	0.0200	0.107	0.463	2.48		1	WG1278443
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	0.0257	0.0657		1	WG1278443
m&p-Xylene	1330-20-7	106	0.400	1.73	0.663	2.87		1	WG1275670
o-Xylene	95-47-6	106	0.200	0.867	0.530	2.30		1	WG1275670
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*108*				WG1278443
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1275670

Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

dmk 5/5/19

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.162	0.517		1	WG1278443
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0639	0.403		1	WG1278443
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	0.0437	0.175		1	WG1278443
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1278443
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	0.118	0.469		1	WG1278443
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	0.0482	0.191	J	1	WG1278443
Ethylbenzene	100-41-4	106	0.0300	0.130	0.158	0.686		1	WG1278443
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1275670
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0278	0.189		1	WG1278443
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	0.0444	0.242		1	WG1278443
Toluene	108-88-3	92.10	0.200	0.753	0.958	3.61		1	WG1275670
Trichloroethylene	79-01-6	131	0.0200	0.107	0.306	1.64		1	WG1278443
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1278443
m&p-Xylene	1330-20-7	106	0.400	1.73	0.549	2.38		1	WG1275670
o-Xylene	95-47-6	106	0.200	0.867	0.340	1.47		1	WG1275670
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1278443
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.8*				WG1275670

Ca
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

dwk 6/5/19

TR8-IA-6

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.154	0.490		1	WG1278443
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0642	0.405		1	WG1278443
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	0.0459	0.184		1	WG1278443
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1278443
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	0.121	0.478		1	WG1278443
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	0.0528	0.209	B	1	WG1278443
Ethylbenzene	100-41-4	106	0.0300	0.130	0.137	0.592		1	WG1278443
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1275670
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0248	0.168		1	WG1278443
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	0.0464	0.252		1	WG1278443
Toluene	108-88-3	92.10	0.200	0.753	0.969	3.65		1	WG1275670
Trichloroethylene	79-01-6	131	0.0200	0.107	0.291	1.56		1	WG1278443
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	0.0202	0.0516		1	WG1278443
m&p-Xylene	1330-20-7	106	0.400	1.73	0.520	2.25		1	WG1275670
o-Xylene	95-47-6	106	0.200	0.867	0.322	1.40		1	WG1275670
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG1278443
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.5*				WG1275670

dwk 6/5/19

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.0826	0.264		1	WG1278443
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0624	0.393		1	WG1278443
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG1278443
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1278443
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1278443
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1278443
Ethylbenzene	100-41-4	106	0.0300	0.130	ND	ND		1	WG1278443
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.216	0.750		1	WG1275670
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG1278443
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG1278443
Toluene	108-88-3	92.10	0.200	0.753	0.222	0.836		1	WG1275670
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1278443
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1278443
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1275670
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1275670
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1278443
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*93.9*				WG1275670

ATTACHMENT B

SUPPORT DOCUMENTATION

AECOM_UTC 1600 Perimeter Park Drive Suite 400 Morrisville, NC 27560	**Billing Information:** Accounts Payable P.O. Box 5604 Glen Allen, VA 23058-5604	Pres Chk	Analysis / Container / Preservative
Report to: **Peter Hollatz**	Email To: **peter.hollatz@aecom.com**		
Project Description: **UTC Carrier - Syracuse, NY**	City/State Collected: Syracuse NY		
Phone: **919-461-1194** Fax:	Client Project # **60594804**	Lab Project # **UTCAECOM-60594804**	
Collected by (print): Ron Russo JR	Site/Facility ID # TR8 Second Floor	P.O. #	
Collected by (signature):	***Rush?*** (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Standard TAT	Quote #	Date Results Needed
Immediately Packed on Ice N X Y___			No of Cntrs

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone 615-758-5858
Phone 800 767 5859
Fax 615 758 5859

L# AA01 L109 04966

Table # AA01

Acctnum: **UTCAECOM**

Template: **T149435**

Prelogin: **P705311**

TSR: **526 - Chris McCord**

PB: TB 4.30-19

Shipped Via: **FedEx 2nd Day**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No of Cntrs	TO-15/TO-15SIM Summa		Initial Pressure	Final Pressure						Remarks	Sample # (lab only)
TR8-IA-4	G	Air		5-1-19	8:18-14:58	1	X		29.5	4						8046	-01
TR8-IA-5	G	Air		5-1-19	8:22-14:53	1	X		29	4						7309	-02
TR8-IA-6	G	Air		5-1-19	8:35-14:48	1	X		29	4						7960	-03
OA-050119	G	Air		5-1-19	8:31-15:18	1	X		29	4						8488	-04
FD-IA-050119	G	Air		5-1-19	-	1	X		29.5	6	TR8-IA-6					6210	-05
		Air				0	X										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking # 479488838117 5111186

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N

Relinquished by: (Signature)	Date: 5/1/19	Time: 15:30	Received by (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by: (Signature)	Date:	Time:	Received by (Signature)	Temp: amb °C Bottles Received: 5	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date	Time	Received for lab by: (Signature)	Date: 5/2/19 Time: 0845	Hold: Condition: NCF / OK

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG1278443	trans-1,2-Dichloroethene	L1094468-01, 02, 03, 05

Appendix E

SSD System Pilot Memo

AECOM

Final Design Basis Memorandum

To	Mr. John Wolski (UTC)	Pages 7 (text)
CC	Jon Alberg (AECOM)	
Subject	Final Design Basis Memorandum for Sub-Slab Depressurization System Stormwater Treatment Plant and TR-20 (Limited Area), Carrier Corporation Thompson Road Campus, Syracuse, New York	
From	Peter Hollatz (AECOM)	
Date	June 28, 2019	

Background

AECOM Technical Services, Inc. (AECOM) is submitting this final design basis memorandum (FDBM) to document the results of the Sub-Slab Depressurization (SSD) pilot tests at the Stormwater Treatment Plant (SWTP) and building TR-20 (limited area) within the Carrier Corporation (Carrier) Thompson Road Campus (Site), Syracuse, New York. The objective of this FDBM is to present the findings of the pilot tests and provide the recommended conceptual layout of the SSD systems. This FDBM was developed from a compilation of historical pilot testing data reviews (EnSafe Inc. [EnSafe] letter and report that was sent to New York State Department of Conservation [NYSDEC] on May 23, 2013), evaluation of data collected from the SSD systems installed in buildings TR-4, TR-6, TR-18, and TR-18S in 2017/2018, AECOM Site walks in May 2018, and the SSD pilot test activities carried out from October 16 through October 30, 2018.

This work was completed as an Interim Corrective Measure (ICM), performed in accordance with the Corrective Action Order on Consent (CO) dated January 4, 2006.

The focus of the SSD pilot testing was a limited area in building TR-20 around sub-slab vapor point SSV-3, which has the approximate dimensions of 240 feet (ft) by 120 ft, or approximately 28,800 square feet (SF) in size, and the SWTP building, which is approximately 10,811 SF in size (see **Figure 1** for the location of the buildings on the Site). Chlorinated compounds, primarily trichloroethene (TCE), were detected in sub-slab soil gas in these areas during the recent (2017/2018) vapor intrusion (VI) investigation.

The intent of an SSD system is to establish negative pressure beneath a building concrete slab to create an engineered control to mitigate the potential migration of soil gas vapor into the interior of the building. Typically, an SSD system consists of extraction points (i.e., strategically placed piping penetrations through the concrete slab), radially-spaced vapor monitoring points (VMPs) located around the extraction points, and vapor conveyance piping mounted aboveground from the extraction points to a centrally-located vapor extraction blower/fan or a network of extraction blowers/fans. Determination of the optimum number and placement of extraction points is facilitated by the data obtained from the SSD system pilot test.

The purpose of the SSD pilot test is to gather performance data to assist with the design of a system. The overall approach of the pilot test is to extract air from the subsurface at an extraction point, measure the resulting airflow rates and applied vacuums at the extraction point, measure the vacuum at radially-spaced VMPs, and monitor extracted air for concentrations of volatile organic compounds (VOCs) during the testing. A photoionization detector (PID) is used to screen for VOCs. Specific design data obtained during pilot testing include the following:

- Air flow extraction rate and applied vacuum at the extraction point;
- VOC concentrations in the extracted air at the extraction point; and
- Subsurface pressure/vacuum measurements at the VMPs and estimates of associated zone of influence.

In addition to the field measurements discussed above, the following sub-slab soil gas and exhaust emission samples were collected:

1. In TR-20, sub-slab soil gas samples were collected at the four extraction points and two VMPs prior to the testing in order to delineate the elevated soil gas VOC concentrations (in particular trichloroethene [TCE]) at sub-slab soil gas location SSV-3 during the 2017/2018 VI investigation. Two of the six locations were resampled in an effort to confirm the sub-slab results; however, it is noted that the samples were collected after testing had begun.

2. Seven samples at SWTP and five samples at TR-20 were collected from the extraction points exhaust for laboratory analysis (Environmental Protection Agency (EPA) Method TO-15).

Extraction Points and VMPs Construction

The pilot testing was completed by extracting air from directly below the concrete slab at several extraction points in both areas (one extraction point at a time). The resulting airflow rates and vacuums/pressures, monitored vacuums at radial monitoring points, and monitored extracted air for concentrations of VOCs during the testing were recorded. The extracted air was exhausted outside of the existing building at least 10 feet from any building air intakes, windows, or doors.

The extraction points and VMPs were constructed as described below:

1) Extraction Points (seven in the SWTP and four in TR-20)
   a) An 8-inch diameter hole was cored through the concrete slab. Concrete slab thickness was approximately 6 inches in TR-20 and approximately 10 to 26 inches in SWTP.
   b) A 2-foot long, 4-inch diameter screen (0.010 slot) was set below the base of the concrete slab.
   c) A temporary 4-inch riser pipe was extended through the cored hole and the annular space between the concrete and riser was sealed.

2) Vacuum Monitoring Points (15 in the SWTP and two in TR-20)
   a) The VMPs were Vapor Pins® installed by drilling 1.5-inch diameter hole to approximately 1.75-inches into the concrete slab to provide a recess for the VMP. A 5/8-inch hole was cored through the center of the larger diameter hole extending through the remaining thickness of the concrete slab.

See **Figure 2** and **Figure 3** for an overview of the test locations.

The material underneath the slab in TR-20 consisted of tightly compacted gravel, sands, and some silt. The material underneath the slab in SWTP consisted of sands with some gravel and/or clay at depth.

Pilot Test Procedures and Results

TR-20 (limited area around SSV-3)

Prior to the testing, baseline sub-slab soil gas samples were collected from the four extraction points and the two VMPs. The samples were collected in a manner consistent with the Vapor Intrusion Investigation Work Plan (VI Work Plan - AECOM October 2017). Two of the locations were resampled in an effort to confirm results; however; it is noted that the samples were collected after testing had begun. The analytical results bound TCE to the east and west of SSV-3 (north was already delineated), but an elevated concentrations of TCE was reported at the extraction point EP-4, directly south of SSV-3. The laboratory results are provided in **Attachment A** and summarized on **Figure 2**. An additional three indoor air/sub-slab soil gas samples were collected farther south of EP-4 as part of the 2019 VI investigation sampling event, which delineated the southern extent. The laboratory results are provided in the 2019 VI investigation report.

The first phase of the pilot test was an extraction point capacity test to determine the relationship between applied vacuum and soil vapor flow rate from the extraction point. In general, the test applied various vacuums to the extraction point in a series of time steps and the air flow rate was measured for each step. Once the vacuum at the extraction point had stabilized, air flow rates were recorded, and the vacuum was increased until the system blower was operating at maximum capacity. The results of the tests are illustrated on **Figure 4**. Three of the four extraction points responded similarly with moderate applied vacuums of

approximately 40 to 70 inches of water column (in. wc) resulting in a range of approximately 10 to 20 standard cubic feet per minute (scfm) of extracted air flow. The forth extraction point (EP-4), located farthest south, had lower applied vacuums and higher extraction rates (approximately 35 scfm) which suggests more permeable materials in that vicinity.

The second phase of the pilot test consisted of constant-rate tests. These longer duration tests (approximately 2 to 5 hours each) primarily evaluated the zone of influence of the extraction point and the associated contaminant mass removal rate. Constant-rate tests were performed at constant vacuum set points obtained with the test blower as determined by the extraction point capacity tests. The resulting subsurface vacuums were measured in the VMP network to evaluate the zone of influence around the extraction point after vacuum measurements met "steady-state" conditions at each of the various vacuums.

Based on the vacuums applied to the extraction point during each of the constant-rate tests, and the measured vacuums at the VMP network, an estimated vacuum radius of influence (ROI) was calculated by plotting the measured vacuums versus distance from the extraction point.

During the tests, the vacuum was applied at one extraction point per test. The other extraction points were used to monitoring vacuum underneath the concrete slab (i.e., VMPs). In general vacuum response was measured at VMPs up to a distance of approximately 100 ft from the extraction points with an applied wellhead vacuum of approximately 30 in. wc to 60 in. wc with the exception of EP-2 which had lower radial response of approximately 75 ft. Consistent with the capacity tests, the extraction rates were approximately 10 to 20 scfm at three of the four points with higher flow rate of approximately 35 scfm at EP-4.

The estimated radial vacuum influence from the extraction points EP-1, EP-2, EP-3, and EP-4 are illustrated in **Figure 5**, **Figure 6**, **Figure 7**, and **Figure 8**, respectively, as a plot of vacuum versus distance from the extraction point.

The data collection sheets for the capacity test and constant rate tests are provided in **Attachment B**.

SWTP

During the installation of the extraction points, the concrete slab subbase material was observed to consist of sands with some gravel. As a result of the highly permeable soils, the extraction point capacity testing at the first test point (EP-1) resulted in low wellhead vacuum (less than 10 in. wc) and high extraction flowrate (approximately 170 scfm) with very limited change in the wellhead vacuums. Given the limited change in wellhead vacuum, the testing transitioned directly to the constant-rate tests. In addition to the highly permeable soils underneath the concrete slab, the building was constructed with grade beams beneath the concrete slab in the north-south direction. Extraction points and VMPs where strategically installed to ensure testing/measurements were collected from all the areas underneath the slab separated by the grade beams.

Within the building footprint, there are three lower levels referred to as the West Pit, East Pit, and Stormwater Extraction Sump. Both the East Pit and Stormwater Extraction Sump extend below the groundwater table.

Based on the vacuums applied to the extraction point during each of the constant-rate tests, and the measured vacuums at the VMP network, the placement and quantity of extraction points was determine in order to influence all the different areas underneath the slab separated by the grade beams. The estimated vacuum ROI was not calculated due to the interference caused by the grade beams and the three lower levels (i.e., West Pit, East Pit, and Stormwater Extraction Sump). The areas are identified as Area 1 through Area 16 on **Figure 3**.

During the tests, the applied vacuum was at one extraction point per test. The vacuum response measured at nearby area VMPs showed that extraction points captured the following areas:

EP-1: Area 1 and 2

EP-2: Area 3, 4, 5, and 6

EP-4: Area 13 and 14

EP-5: Area 6, 7, 8, 9, and 10

EP-6: Area 15

EP-7: Area 11, 12, and 13

Area 16 (East Pit) and 17 (Stormwater Extraction Sump) both extended below the groundwater table.

The data collection sheet constant rate tests are provided in **Attachment B**.

Pilot Test Emissions

Title 6, New York Codes, Rules, and Regulations, Chapter III Air Resources, Subpart 201-3.3 Trivial Activities (6CRR-NY §201-3.3) lists soil vents that are operated under an agreement with, and under the supervision of, the department as a trivial source that is exempt from registration and permitting requirements.

During the pilot testing, field screening with the PID equipped with a 10.6 electron volt lamp indicated that VOC concentrations in the extraction points ranged from 0 to 8.2 parts per million volume (ppmv). Extracted vapor samples were collected at all the extraction points. Samples were collected in 1 liter Summa cans and analyzed for VOCs using United States Environmental Protection Agency (USEPA) Method TO-15 by Eurofins Air Toxics, Inc. The laboratory reports are provided in **Attachment C**. The total VOC emission rate during the testing was less than 0.0001 pounds per hour (lbs/hr) (see **Table 1**) for TR-20 and less than 0.0008 lbs/hr (see **Table 2**) for SWTP.

Waste Management

Soils generated during installation of the extraction points and VMPs were containerized and stored in the designated area on the property pending waste characterization for off-Site disposal. The waste has been removed from the Site and disposed.

Conclusions

The pilot testing was successful in providing sufficient data to determine the final system design minimum criteria which are as follows:

TR-20 (limited area around SSV-3)

1. Extraction point minimum vacuum of 30 in. wc with a minimum flowrate of 10 scfm.

2. VOC concentrations in the extracted air less than 0.0001-lbs/hr.

3. Assumed minimum vacuum radius of influence of 75 ft.

SWTP

1. Extraction point minimum vacuum of 5 in. wc with an minimum flowrate of 150 scfm.

2. VOC concentrations in the extracted air less than 0.0008-lbs/hr.

3. Due to the ROI interference caused by the grade beams and the three lower levels, at a minimum extraction points EP-1, EP-2, EP-4, EP-5, EP-6, and EP-7 will be required.

Recommendations for Final System Design

TR-20 (limited area around SSV-3)

Extraction points EP-2 and EP-4 would be connected to individual in-line extraction fans with 4-inch diameter schedule 40 polyvinyl chloride (SCH 40 PVC) air conveyance piping. The piping would be routed vertically up an existing building column through the building roof. The exhaust pipes would be extended at least 2 ft above the nearby roof line and not within 10 ft of any building intakes, windows or doors. An air control valve along with a vacuum measurement port and/or gage would be installed at each extraction point.

Potential-to-emit calculations (see **Table 1**) indicate that uncontrolled emissions of the maximum designed vacuums and flow rates will be well below the registration and permitting requirements thresholds which will not require a permit to operate.

SWTP

Extraction points EP-1, EP-2, EP-4, EP-5, EP-6, and EP-7 would be connected to centrally-located extraction fans (inside a system enclosure) with minimum 4-inch diameter SCH 40 PVC air conveyance piping. The exhaust pipes would be extended at least 2 ft above the nearby roof line and not within 10 ft of any building intakes, windows or doors. An air control valve along with a vacuum measurement port and/or gage would be installed at each extraction point.

Potential-to-emit calculations (see **Table 2**) indicate that uncontrolled emissions of the maximum designed vacuums and flow rates will be well below the registration and permitting requirements thresholds which will not require a permit to operate.

Tables

Table 1 – Summary of Emission Rate – TR-20
Table 2 – Summary of Emission Rate - SWTP

Figures

Figure 1 – Location Map
Figure 2 – TR-20 – SSD System Pilot Test Locations
Figure 3 – SWTP – SSD System Pilot Test Locations
Figure 4 – TR-20 Capacity Test – Vacuum and Flowrate at Extraction Point
Figure 5 – TR-20 EP-1 Constant-Rate Test – Vacuum vs Distance from the Extraction Point
Figure 6 – TR-20 EP-2 Constant-Rate Test – Vacuum vs Distance from the Extraction Point
Figure 7 – TR-20 EP-3 Constant-Rate Test – Vacuum vs Distance from the Extraction Point
Figure 8 – TR-20 EP-4 Constant-Rate Test – Vacuum vs Distance from the Extraction Point

Attachments

Attachment A – Sub-Slab Soil Gas Analytical Reports
Attachment B – Data Collection Sheets
Attachment C – Exhaust Emission Analytical Reports

Tables

Table 1 - Summary of Emission Rate

Extraction Point Identification: EP-1, EP-2, EP-3, and EP-4

Job Number: 60581049
Well Diameter (inches (in)): 4
Site: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

DATE		10/18/18	10/17/18	10/18/18	10/17/18	-
Test Identification		EP-1	EP-2	EP-3	EP-4	Potential-to-Emit (Full-Scale)*
Duration of Test (hours) (approximate)		3	5	3	2	1
Extraction Blower		-	-	-	-	-
Soil Vapor Flow Rate (cubic feet per minute (cfm))						
	Exhuast	16	11	18	34	34
Volatile Organic Compounds (VOCs) (parts per million vapor (ppm$_v$))						
Acetone (Cas # 67-64-1)	**Acetone (ppmv) MW 58.08**	0.000	0.013	0.024	0.025	0.025
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
1,1-Dichloroehane (Cas # 675-34-3)	**1,1-DCA (ppmv) MW 98.96**	0.000	0.005	0.000	0.002	0.005
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
2-Butanone (Methyl Ethyl Ketone) (Cas # 78-93-3)	**2-Butanone (ppmv) MW 72.107**	0.000	0.023	0.000	0.000	0.023
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Tetrahydrofuran (Cas # 109-99-9)	**THF (ppmv) MW 72.107**	0.000	0.031	0.000	0.000	0.031
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Styrene (Cas # 100-42-5)	**Styrene (ppmv) MW 104.15**	0.000	0.012	0.000	0.000	0.012
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Cyclohexane (Cas # 110-82-7)	**Cyclohexane (ppmv) MW 84.162**	0.000	0.008	0.026	0.005	0.026
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Benzene (Cas # 71-43-2)	**Benzene (ppmv) MW 78.11**	0.000	0.002	0.000	0.002	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000

DATE		10/18/18	10/17/18	10/18/18	10/17/18	-
Test Identification		EP-1	EP-2	EP-3	EP-4	Potential-to-Emit (Full-Scale)*
Duration of Test (hours) (approximate)		3	5	3	2	1
Extraction Blower		-	-	-	-	-
Soil Vapor Flow Rate (cubic feet per minute (cfm))						
	Exhuast	16	11	18	34	34
Volatile Organic Compounds (VOCs) (parts per million vapor (ppm$_v$))						
4-Ethyltoluene (Cas # 622-96-8)	4-Ethyltoluene (ppmv) MW 120.195	0.000	0.002	0.000	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
1,2,4-Trimethylbenzene (Cas # 95-63-6)	1,2,4-Trimethylbenzene (ppmv) MW 120.19	0.000	0.002	0.000	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Trichloroethene (Cas # 79-01-6)	TCE (ppmv) MW 131.39	0.012	0.390	0.006	0.130	0.390
	Mass Removal Rate (lbs/hr)	0.0000	0.0001	0.0000	0.0001	0.0003
1,1,1-Trichloroethane (Cas # 71-55-6)	1,1,1-TCA (ppmv) MW 133.40	0.003	0.090	0.038	0.031	0.090
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0001
Ethanol (Cas # 64-17-5)	Ethanol (ppmv) MW 46.07	0.000	0.009	0.000	0.000	0.009
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
cis-1,2-Dichloroethene (Cas #156-59-2)	cis-1,2-DCE (ppmv) MW 96.95	0.000	0.003	0.000	0.000	0.003
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Freon-11 (Cas # 75-69-4)	Freon-11 (ppmv) MW 137.36	0.000	0.002	0.000	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
Toluene (Cas # 108-88-3)	Toluene (ppmv) MW 92.14	0.000	0.009	0.004	0.006	0.009
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
m,p-Xylenes (Cas # 179601-23-1)	m,p-Xylenes (ppmv) MW 106.16	0.000	0.007	0.002	0.003	0.007
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000
	Total VOC Mass Removal Rate (lbs/hr)*	0.0000	0.0001	0.0000	0.0001	0.0012
	Total VOC Mass Removal Rate (lbs/year)*	-	-	-	-	10

Notes:

1) Mass removal based following calculation:
Mass removal per hour = Flow Rate (scfm) x MW (lb/lb-mole) (molecular weight) x VOC (ppmv) x 1.53x10^-7 (cu ft/lb-mole)

2) The New York Codes, Rules and Regulations (NYCRR) define exempt activities in 6 NYCRR §201-3.2 and trivial activities in 6 NYCRR §201-3.3. Soil vents that are operated under an agreement with and under the supervision the department are trivial activities making them exempt from the registration and permitting provisions of Subpart 201-4 (registrations) and 201-5 (minor –state) and 201-6 (major – Title V).

SSDS sub-slab depressurization system
lbs/hr pounds per hour
lbs/day pounds per day

* Projected potential-to-emit calculations assume three extraction points. Assume maximum concentration and flowrate measured for each compound during testing.

Table 2 - Summary of Emission Rate

Extraction Point Identification: EP-1, EP-2, EP-3, EP-4, EP-5, EP-6, and EP-7

Job Number: 60581049
Well Diameter (inches (in)): 4
Site: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: SWTP

DATE		10/19/18	10/19/18	10/23/18	10/24/18	10/22/18	10/25/18	10/30/18	-
Test Identification		EP-1	EP-2	EP-3	EP-4	EP-5	EP-6	EP-7	Potential-to-Emit (Full-Scale)*
Duration of Test (hours) (approximate)		2	2	2	2	2	2	2	1
Extraction Blower		-	-	-	-	-	-	-	-
Soil Vapor Flow Rate (cubic feet per minute (cfm))									
	Exhuast	169	160	162	181	174	175	179	181
Volatile Organic Compounds (VOCs) (parts per million vapor (ppm$_v$))									
Acetone (Cas # 67-64-1)	**Acetone (ppmv) MW 58.08**	0.032	0.000	0.015	0.000	0.013	0.000	0.000	0.032
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
1,1-Dichloroehane (Cas # 675-34-3)	**1,1-DCA (ppmv) MW 98.96**	0.000	0.005	0.000	0.006	0.002	0.001	0.004	0.006
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2-Butanone (Methyl Ethyl Ketone) (Cas # 78-93-3)	**2-Butanone (ppmv) MW 72.107**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tetrahydrofuran (Cas # 109-99-9)	**THF (ppmv) MW 72.107**	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.001
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Styrene (Cas # 100-42-5)	**Styrene (ppmv) MW 104.15**	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cyclohexane (Cas # 110-82-7)	**Cyclohexane (ppmv) MW 84.162**	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.007
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Benzene (Cas # 71-43-2)	**Benzene (ppmv) MW 78.11**	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 2 - Summary of Emission Rate

Extraction Point Identification: EP-1, EP-2, EP-3, EP-4, EP-5, EP-6, and EP-7

Job Number: 60581049
Well Diameter (inches (in)): 4
Site: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: SWTP

DATE		10/19/18	10/19/18	10/23/18	10/24/18	10/22/18	10/25/18	10/30/18	-
Test Identification		EP-1	EP-2	EP-3	EP-4	EP-5	EP-6	EP-7	Potential-to-Emit (Full-Scale)*
Duration of Test (hours) (approximate)		2	2	2	2	2	2	2	1
Extraction Blower		-	-	-	-	-	-	-	-
Soil Vapor Flow Rate (cubic feet per minute (cfm))									
	Exhuast	169	160	162	181	174	175	179	181
Volatile Organic Compounds (VOCs) (parts per million vapor (ppm$_v$))									
4-Ethyltoluene (Cas # 622-96-8)	**4-Ethyltoluene (ppmv) MW 120.195**	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.005
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1,2,4-Trimethylbenzene (Cas # 95-63-6)	**1,2,4-Trimethylbenzene (ppmv) MW 120.19**	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.005
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Trichloroethene (Cas # 79-01-6)	**TCE (ppmv) MW 131.39**	0.200	0.069	0.044	0.056	0.045	0.140	0.100	0.200
	Mass Removal Rate (lbs/hr)	0.0007	0.0002	0.0001	0.0002	0.0002	0.0005	0.0004	0.0007
1,1,1-Trichloroethane (Cas # 71-55-6)	**1,1,1-TCA (ppmv) MW 133.40**	0.000	0.000	0.000	0.003	0.000	0.000	0.003	0.003
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ethanol (Cas # 64-17-5)	**Ethanol (ppmv) MW 46.07**	0.000	0.000	0.048	0.000	0.270	0.000	0.000	0.270
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0001	0.0000	0.0003	0.0000	0.0000	0.0003
cis-1,2-Dichloroethene (Cas #156-59-2)	**cis-1,2-DCE (ppmv) MW 96.95**	0.023	0.010	0.011	0.009	0.026	0.007	0.024	0.026
	Mass Removal Rate (lbs/hr)	0.0001	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0.0001
Freon-11 (Cas # 75-69-4)	**Freon-11 (ppmv) MW 137.36**	0.002	0.000	0.000	0.000	0.002	0.002	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Toluene (Cas # 108-88-3)	**Toluene (ppmv) MW 92.14**	0.000	0.000	0.003	0.000	0.026	0.000	0.000	0.026
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0001
m,p-Xylenes (Cas # 179601-23-1)	**m,p-Xylenes (ppmv) MW 106.16**	0.000	0.000	0.002	0.000	0.017	0.000	0.000	0.017
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
Vinyl Chloride (Cas # 75-01-4)	**Vinyl Chloride (ppmv) MW 62.498**	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002
	Mass Removal Rate (lbs/hr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total VOC Mass Removal Rate (lbs/hr)*	0.0008	0.0003	0.0003	0.0003	0.0007	0.0005	0.0004	0.0085
	Total VOC Mass Removal Rate (lbs/year)*	-	-	-	-	-	-	-	74

Notes:

1) Mass removal based following calculation:
Mass removal per hour = Flow Rate (scfm) x MW (lb/lb-mole) (molecular weight) x VOC (ppmv) x 1.53x10^-7 (cu ft/lb-mole)

2) The New York Codes, Rules and Regulations (NYCRR) define exempt activities in 6 NYCRR §201-3.2 and trivial activities in 6 NYCRR §201-3.3. Soil vents that are operated under an agreement with and under the supervision the department are trivial activities making them exempt from the registration and permitting provisions of Subpart 201-4 (registrations) and 201-5 (minor –state) and 201-6 (major – Title V).

SSDS sub-slab depressurization system
lbs/hr pounds per hour
lbs/day pounds per day

* Projected potential-to-emit calculations assume six extraction points. Assume maximum concentration and flowrate measured for each compound during testing.

Figures

N

SANDERS CREEK

CARRIER PKWY

TR-3

SWTP

TR-2

A&R

FIRST ST

TR-18

TR-18S

TR-4

TR-5

TR-19

TR-20

KINNE ST

THOMPSON RD

TR-1

TR-6

TR-7

TR-7A

TR-6A

TR-21

TR-11

TR-10

TR-8

TR-21A

FORMER DEBRIS PILE AREA

TR-13

TR-23

TR-10A

TR-12

TR-14

VERIZON SERVICE RD

Legend

Building Status:

- Operating SSDS
- Occupied
- Unoccupied

NOTES: SSDS = Sub-Slab Depressurization System

300 0 300 Feet

LOCATION MAP
CARRIER SITE

AECOM

FIGURE 1

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\SSDS PILOT TEST\BUILDING LOCATIONS.mxd 3/7/2019

TR-20
446,515 SF
180 Occupants

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Extraction Point
- Vacuum Monitoring Point
- Monitoring Well
- Approximate Location of Historical SWMU
- Historical Soil Vapor Probe Location
- Lab
- Office
- Warehouse/ Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTE:
- Concentrations shown in micrograms per cubic meter (µg/m^3)

KINNE ST

SVS-1 SVS-2 Property Line MW-76 MW-77 MW-78 MW-82 DEPRESSED LOADING DOCK

130 0 130 Feet

TR20-EP-3	10/18
VOCs:	
1,1,1-Trichloroethane	260
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	19
Carbon tetrachloride	ND
Ethylbenzene	53
Methylene chloride	ND
Tetrachloroethene	36
Toluene	3300
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	250
o-Xylene	180

TR20-OA-1	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.54
Carbon tetrachloride	0.25
Ethylbenzene	ND
Methylene chloride	0.42
Tetrachloroethene	0.07
Toluene	0.3
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR20-OA-1	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.84
Carbon tetrachloride	0.35
Ethylbenzene	0.52
Methylene chloride	0.48
Tetrachloroethene	0.12
Toluene	1
Trichloroethene	0.17
Vinyl chloride	ND
m&p-Xylene	0.87
o-Xylene	0.35

TR20-IA-8	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.61
Carbon tetrachloride	0.19
Ethylbenzene	0.73
Methylene chloride	ND
Tetrachloroethene	0.07
Toluene	4.29
Trichloroethene	0.05
Vinyl chloride	ND
m&p-Xylene	2.86
o-Xylene	0.98

TR20-SSV-8	03/18
VOCs:	
1,1,1-Trichloroethane	5.67
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	2.23
Carbon tetrachloride	ND
Ethylbenzene	6.98
Methylene chloride	ND
Tetrachloroethene	2.37
Toluene	5.68
Trichloroethene	6.13
Vinyl chloride	ND
m&p-Xylene	23.97
o-Xylene	6.42

TR20-VMP-2	10/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	5.1
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	5.6
o-Xylene	ND

TR20-SSV-4	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	2.24
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	1.66
Carbon tetrachloride	ND	ND
Ethylbenzene	49	30.48
Methylene chloride	ND	ND
Tetrachloroethene	2.83	ND
Toluene	26.1	5.68
Trichloroethene	ND	7.79
Vinyl chloride	ND	ND
m&p-Xylene	249	159.54
o-Xylene	85.8	77.17

TR20-IA-4	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.16	1.88
Carbon tetrachloride	0.2	0.25
Ethylbenzene	0.88	1.04
Methylene chloride	0.35	0.38
Tetrachloroethene	0.05	0.07
Toluene	2.77	5.53
Trichloroethene	0.04	0.11
Vinyl chloride	ND	ND
m&p-Xylene	3.15	4.16
o-Xylene	1.26	1.69

TR20-IA-11	01/19
VOCs:	
1,1,1-Trichloroethane	0.047
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	0.031
1,2-Dichloroethene (trans)	ND
Benzene	1.2
Carbon tetrachloride	0.4
Ethylbenzene	1
Methylene chloride	ND
Tetrachloroethene	0.082
Toluene	23
Trichloroethene	0.045
Vinyl chloride	ND
m&p-Xylene	3.8
o-Xylene	1.4

TR20-SSV-11	01/19
VOCs:	
1,1,1-Trichloroethane	0.047
1,1-Dichloroethane	0.033
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.76
Carbon tetrachloride	0.21
Ethylbenzene	1.9
Methylene chloride	ND
Tetrachloroethene	0.1
Toluene	3.1
Trichloroethene	0.36
Vinyl chloride	0.36
m&p-Xylene	13
o-Xylene	6.5

TR20-SSV-2	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	ND
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR20-IA-2	12/17
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.7
Carbon tetrachloride	0.19
Ethylbenzene	0.42
Methylene chloride	0.3
Tetrachloroethene	0.07
Toluene	1.06
Trichloroethene	0.05
Vinyl chloride	ND
m&p-Xylene	1.14
o-Xylene	0.38

TR20-IA-7	03/18
VOCs:	
1,1,1-Trichloroethane	0.6
1,1-Dichloroethane	0.12
1,1-Dichloroethene	0.12
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	0.42
Benzene	1.7
Carbon tetrachloride	0.38
Ethylbenzene	0.7
Methylene chloride	0.88
Tetrachloroethene	7.32
Toluene	2.38
Trichloroethene	0.16
Vinyl chloride	0.05
m&p-Xylene	2.48
o-Xylene	1.06

TR20-SSV-7	03/18
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	ND
Methylene chloride	ND
Tetrachloroethene	3.93
Toluene	ND
Trichloroethene	8.81
Vinyl chloride	ND
m&p-Xylene	ND
o-Xylene	ND

TR20-IA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	0.87
1,1-Dichloroethane	ND	0.24
1,1-Dichloroethene	ND	0.2
1,2-Dichloroethene (cis)	ND	0.42
1,2-Dichloroethene (trans)	ND	0.73
Benzene	0.72	1.48
Carbon tetrachloride	0.19	0.63
Ethylbenzene	ND	0.81
Methylene chloride	0.46	0.87
Tetrachloroethene	0.04	2.2
Toluene	1.03	2.38
Trichloroethene	0.02	0.32
Vinyl chloride	ND	0.13
m&p-Xylene	0.83	2.48
o-Xylene	0.35	0.98

TR20-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	15.06	14.46
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	ND	ND
Methylene chloride	2.53	ND
Tetrachloroethene	ND	10.24
Toluene	4.89	2.37
Trichloroethene	ND	11.12
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	1.86

TR20-EP-2	10/18	10/18
VOCs:		
1,1,1-Trichloroethane	110	116
1,1-Dichloroethane	5.4	11.2
1,1-Dichloroethene	ND	1.35
1,2-Dichloroethene (cis)	ND	6.87
1,2-Dichloroethene (trans)	ND	ND
Benzene	3.7	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	34	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	3.98
Toluene	6.2	1.19
Trichloroethene	788	576
Vinyl chloride	ND	ND
m&p-Xylene	170	ND
o-Xylene	100	ND

TR20-EP-1	10/18
VOCs:	
1,1,1-Trichloroethane	43
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	5.1
Carbon tetrachloride	ND
Ethylbenzene	61
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	18
Trichloroethene	48
Vinyl chloride	ND
m&p-Xylene	300
o-Xylene	160

TR20-IA-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.34	2.13
Carbon tetrachloride	0.22	0.25
Ethylbenzene	1.02	1.06
Methylene chloride	0.37	0.65
Tetrachloroethene	0.08	0.07
Toluene	3.19	5.46
Trichloroethene	0.07	0.16
Vinyl chloride	ND	ND
m&p-Xylene	3.97	4.99
o-Xylene	1.6	1.67

TR20-SSV-3	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	387	235.7
1,1-Dichloroethane	ND	6.28
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	13.92
1,2-Dichloroethene (trans)	ND	2.18
Benzene	ND	2.84
Carbon tetrachloride	ND	ND
Ethylbenzene	62	6.16
Methylene chloride	ND	ND
Tetrachloroethene	ND	5.02
Toluene	43.6	5.91
Trichloroethene	5378	3869.45
Vinyl chloride	ND	ND
m&p-Xylene	338	31.87
o-Xylene	102	11.62

TR20-VMP-1	10/18
VOCs:	
1,1,1-Trichloroethane	21
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	8.6
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	5.4
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	35
o-Xylene	10

TR20-IA-9	01/19
VOCs:	
1,1,1-Trichloroethane	0.076
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.7
Carbon tetrachloride	0.59
Ethylbenzene	1.1
Methylene chloride	ND
Tetrachloroethene	0.084
Toluene	18
Trichloroethene	0.071
Vinyl chloride	ND
m&p-Xylene	4.1
o-Xylene	1.6

TR20-SSV-9	01/19
VOCs:	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	5.4
Carbon tetrachloride	ND
Ethylbenzene	1200
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	55
Trichloroethene	ND
Vinyl chloride	ND
m&p-Xylene	4800
o-Xylene	1000

TR20-EP-4	10/18	10/18
VOCs:		
1,1,1-Trichloroethane	2200	480
1,1-Dichloroethane	370	40.9
1,1-Dichloroethene	58	ND
1,2-Dichloroethene (cis)	ND	1.99
1,2-Dichloroethene (trans)	ND	ND
Benzene	20	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	100	ND
Methylene chloride	ND	ND
Tetrachloroethene	ND	4.34
Toluene	47	4.82
Trichloroethene	5100	1020
Vinyl chloride	ND	ND
m&p-Xylene	370	2.57
o-Xylene	130	2.01

TR20-SSV-6	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	14.9	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	131	7.07
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	21	2.93
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	633	36.89
o-Xylene	512	31.95

TR20-IA-10	01/19
VOCs:	
1,1,1-Trichloroethane	0.052
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	1.2
Carbon tetrachloride	0.42
Ethylbenzene	0.97
Methylene chloride	2.1
Tetrachloroethene	0.088
Toluene	23
Trichloroethene	0.048
Vinyl chloride	ND
m&p-Xylene	3.6
o-Xylene	1.4

TR20-SSV-10	01/19
VOCs:	
1,1,1-Trichloroethane	0.027
1,1-Dichloroethane	0.02
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	ND
1,2-Dichloroethene (trans)	ND
Benzene	0.64
Carbon tetrachloride	0.37
Ethylbenzene	0.17
Methylene chloride	1.5
Tetrachloroethene	0.072
Toluene	3
Trichloroethene	0.28
Vinyl chloride	0.24
m&p-Xylene	1
o-Xylene	0.25

TR20-IA-6	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.7	1.72
Carbon tetrachloride	0.32	0.25
Ethylbenzene	ND	1.17
Methylene chloride	0.45	2.22
Tetrachloroethene	0.04	0.41
Toluene	0.74	5.46
Trichloroethene	ND	0.11
Vinyl chloride	ND	ND
m&p-Xylene	ND	5.46
o-Xylene	ND	2.08

TR20-IA-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	1.76	2.27
Carbon tetrachloride	0.2	0.25
Ethylbenzene	1.37	1.65
Methylene chloride	0.5	ND
Tetrachloroethene	0.07	0.2
Toluene	4.4	7.83
Trichloroethene	0.2	0.11
Vinyl chloride	ND	ND
m&p-Xylene	5.12	7.59
o-Xylene	2.21	2.86

TR20-SSV-5	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	13.62
Carbon tetrachloride	ND	ND
Ethylbenzene	13.1	122.26
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	22.1	23.14
Trichloroethene	ND	ND
Vinyl chloride	ND	ND
m&p-Xylene	22	429.2
o-Xylene	ND	183.39

TR-20 - SSD SYSTEM PILOT TEST LOCATIONS
CARRIER SITE
BUILDING TR-20

AECOM

FIGURE 2

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N

SWTP-SSV-3	03/18
VOCs:	
1,1,1-Trichloroethane	2.94
1,1-Dichloroethane	24.38
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	197.07
1,2-Dichloroethene (trans)	6.15
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	69.80
Methylene chloride	ND
Tetrachloroethene	4.34
Toluene	5.23
Trichloroethene	3675.98
Vinyl chloride	ND
m&p-Xylene	300.44
o-Xylene	120.09

SWTP-SSV-2	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	7.05
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	23.4	87.63
1,2-Dichloroethene (trans)	ND	ND
Benzene	ND	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	47.7	136.13
Methylene chloride	ND	ND
Tetrachloroethene	ND	8.88
Toluene	ND	6.62
Trichloroethene	130	255.81
Vinyl chloride	ND	ND
m&p-Xylene	255	619.96
o-Xylene	96.2	258.39

SWTP-SSV-5	03/18
VOCs:	
1,1,1-Trichloroethane	25.97
1,1-Dichloroethane	32.51
1,1-Dichloroethene	1.78
1,2-Dichloroethene (cis)	106.66
1,2-Dichloroethene (trans)	2.34
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	446.54
Methylene chloride	ND
Tetrachloroethene	ND
Toluene	9.78
Trichloroethene	283.76
Vinyl chloride	ND
m&p-Xylene	2011.62
o-Xylene	854.07

SWTP-SSV-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	2.35
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	17.2	20.62
1,2-Dichloroethene (trans)	ND	ND
Benzene	7.37	ND
Carbon tetrachloride	ND	ND
Ethylbenzene	78.5	342.06
Methylene chloride	ND	ND
Tetrachloroethene	ND	ND
Toluene	ND	5.91
Trichloroethene	924	612.66
Vinyl chloride	ND	ND
m&p-Xylene	477	1781.84
o-Xylene	205	875.75

SWTP-SSV-4	03/18
VOCs:	
1,1,1-Trichloroethane	5.51
1,1-Dichloroethane	15.10
1,1-Dichloroethene	ND
1,2-Dichloroethene (cis)	53.53
1,2-Dichloroethene (trans)	2.78
Benzene	ND
Carbon tetrachloride	ND
Ethylbenzene	4296.36
Methylene chloride	ND
Tetrachloroethene	3.51
Toluene	52.68
Trichloroethene	1676.76
Vinyl chloride	ND
m&p-Xylene	6156.24
o-Xylene	6763.19

SWTP-OA-1	12/17	03/18
VOCs:		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (cis)	ND	ND
1,2-Dichloroethene (trans)	ND	ND
Benzene	0.48	0.77
Carbon tetrachloride	0.22	0.25
Ethylbenzene	ND	ND
Methylene chloride	0.4	0.83
Tetrachloroethene	0.44	0.20
Toluene	0.43	0.38
Trichloroethene	0.38	0.11
Vinyl chloride	ND	ND
m&p-Xylene	ND	ND
o-Xylene	ND	0.17

AREA 10
VMP-9
VMP-4
AREA 9
EP-5
AREA 8
AREA 11
VMP-15
VMP-17
AREA 7
AREA 12
EP-7
AREA 16
VMP-8
VMP-3
AREA 6
AREA 13
AREA 5
VMP-16
AREA 14
EP-4
MW-48
MW-18
EP-2
VMP-5
AREA 4
VMP-2
VMP-7
PLR056
VMP-11
VMP-12
MW-60
AREA 17
AREA 3
VMP-13
MW-51
PLR057
VMP-6
EP-1
AREA 2
EP-3
VMP-10
MW-52
EP-6
AREA 15
AREA 1
VMP-1
MW-53
PLR061
PLR060
MW-54
PLR058
MW-47
MW-54D
MW-61

SWTP
10,811 SF
1 Occupant

Legend

- Indoor Air Sample Location
- Sub-Slab Sample Location
- Outdoor Air Sample Location
- Monitoring Well
- Extraction Point
- Vacuum Monitoring Point
- Grade Beam
- Lab
- Office
- Warehouse/Storage
- Other
- Per NYSDOH Matrix Guidance: Mitigate
- Per NYSDOH Matrix Guidance: Monitor
- Per NYSDOH Matrix Guidance: Identify source(s) and resample or mitigate
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value
- Exceeds Environmental Protection Agency (EPA) Screening Level
- Per NYSDOH Matrix Guidance: Mitigate, and Exceeds NYSDOH Air Guideline Value, and Exceeds EPA Screening Level
- Results indeterminate due to sample dilution

NOTE:
- Concentrations shown in micrograms per cubic meter (µg/m^3)
- No Indoor air samples taken at this building

30 0 30 Feet

SWTP - SSD SYSTEM PILOT TEST LOCATIONS
CARRIER SITE
SWTP BUILDING

AECOM

FIGURE 3

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Figure 4 - TR-20 Capacity Test - Vacuum and Flowrate at Extraction Point

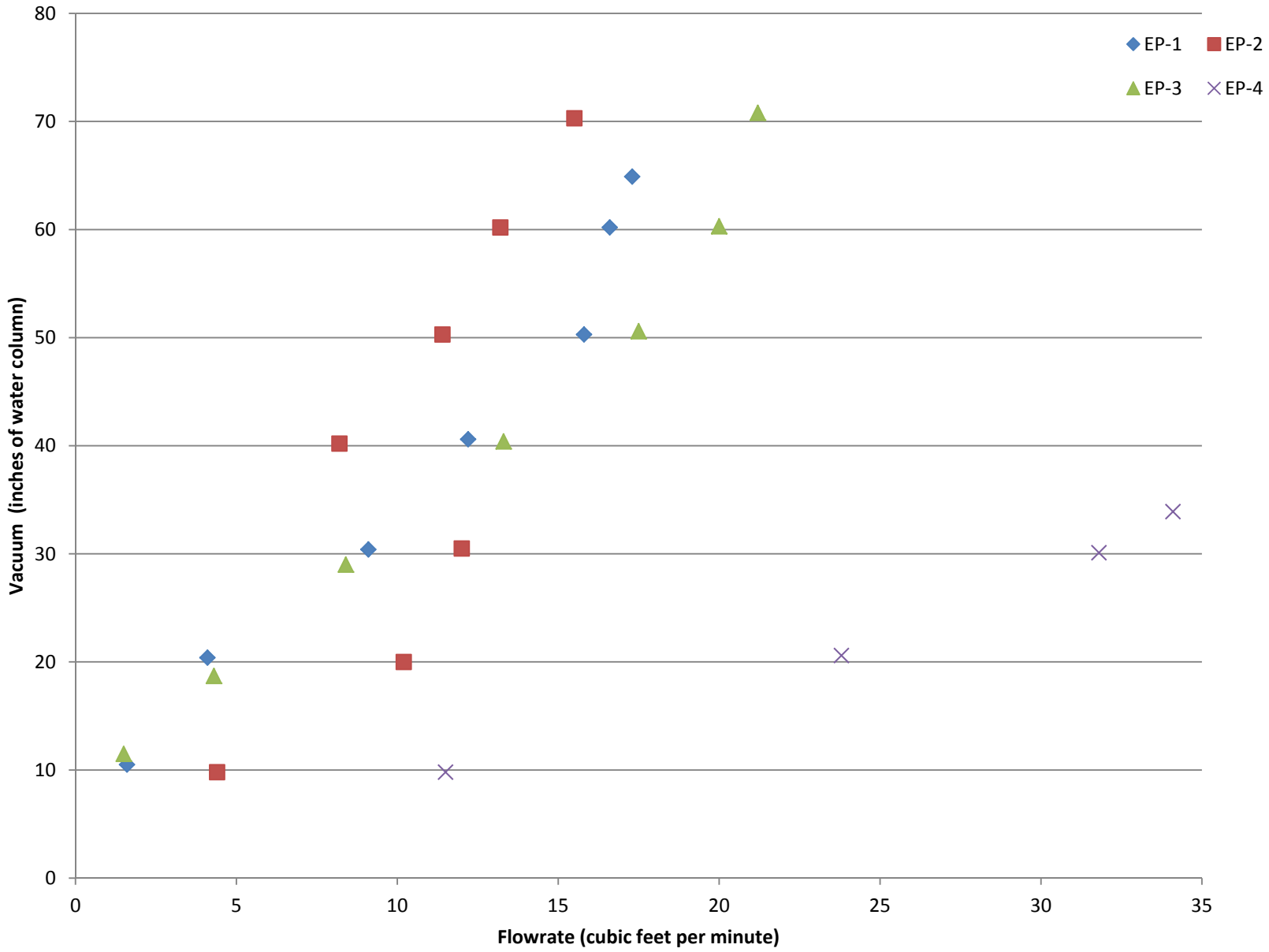


Figure 5: TR-20 EP-1 Constant-Rate Test - Vacuum vs Distance from the Extraction Point

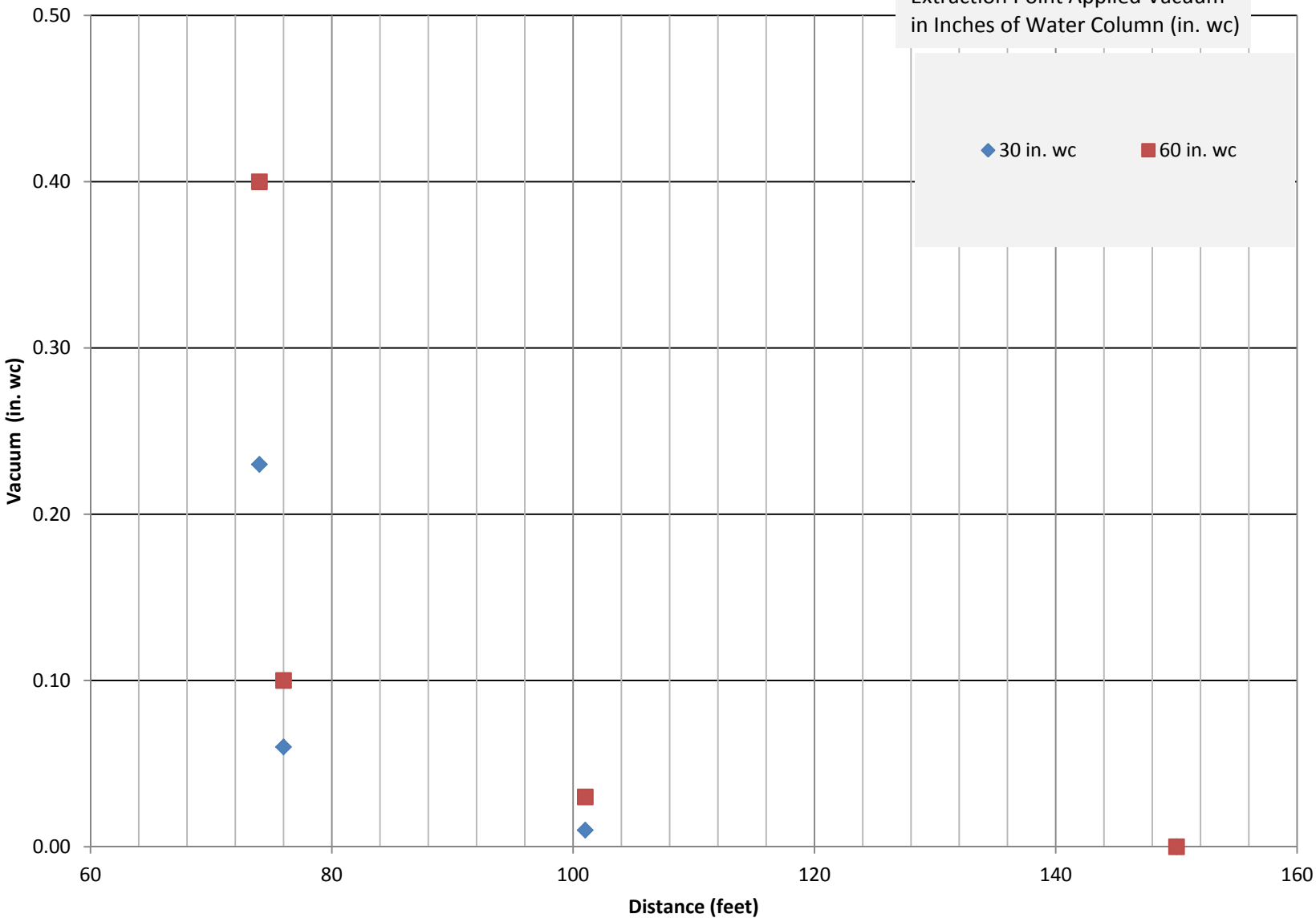


Figure 6: TR-20 EP-2 Constant-Rate Test - Vacuum vs Distance from the Extraction Point

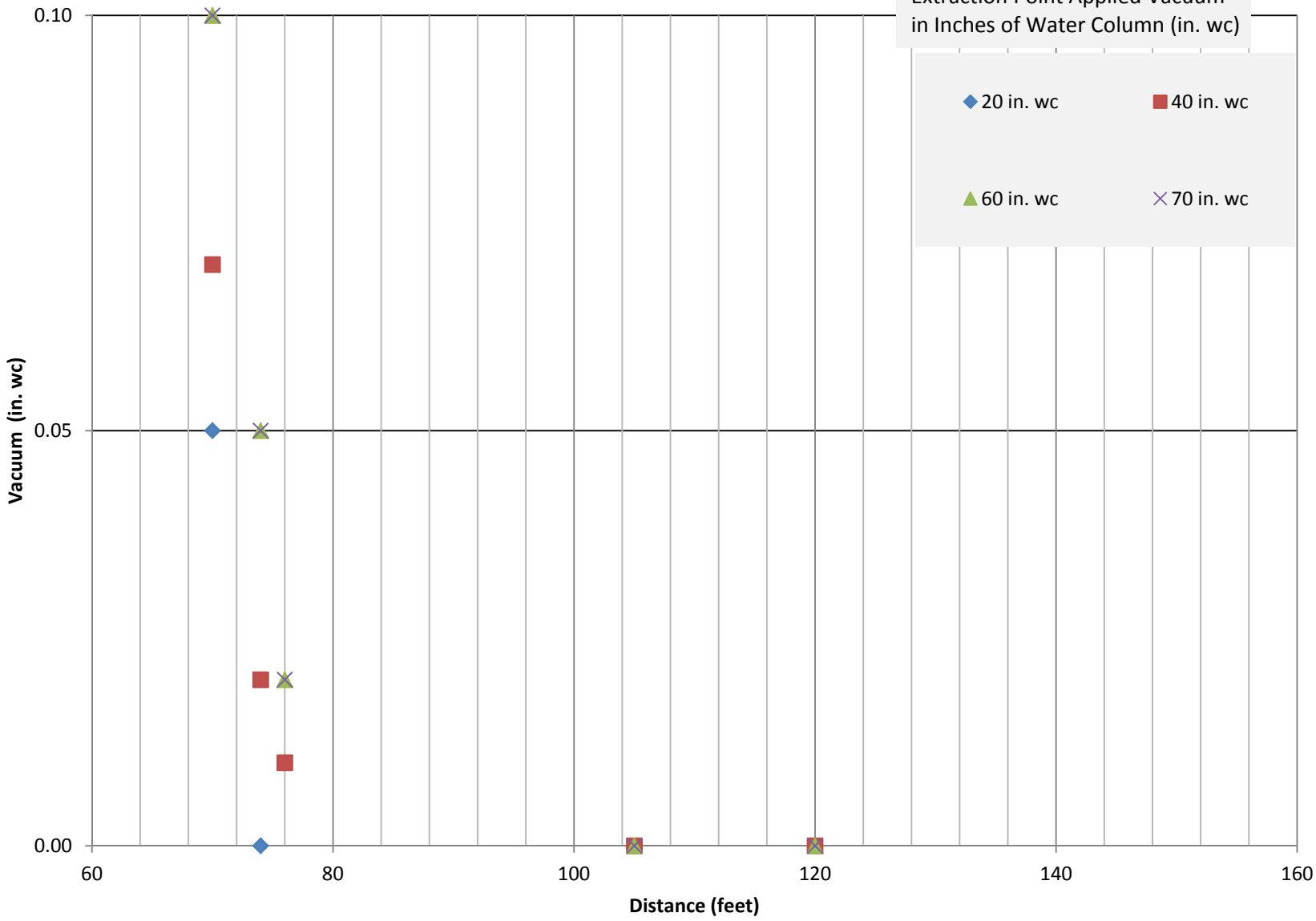


Figure 7: TR-20 EP-3 Constant-Rate Test - Vacuum vs Distance from the Extraction Point

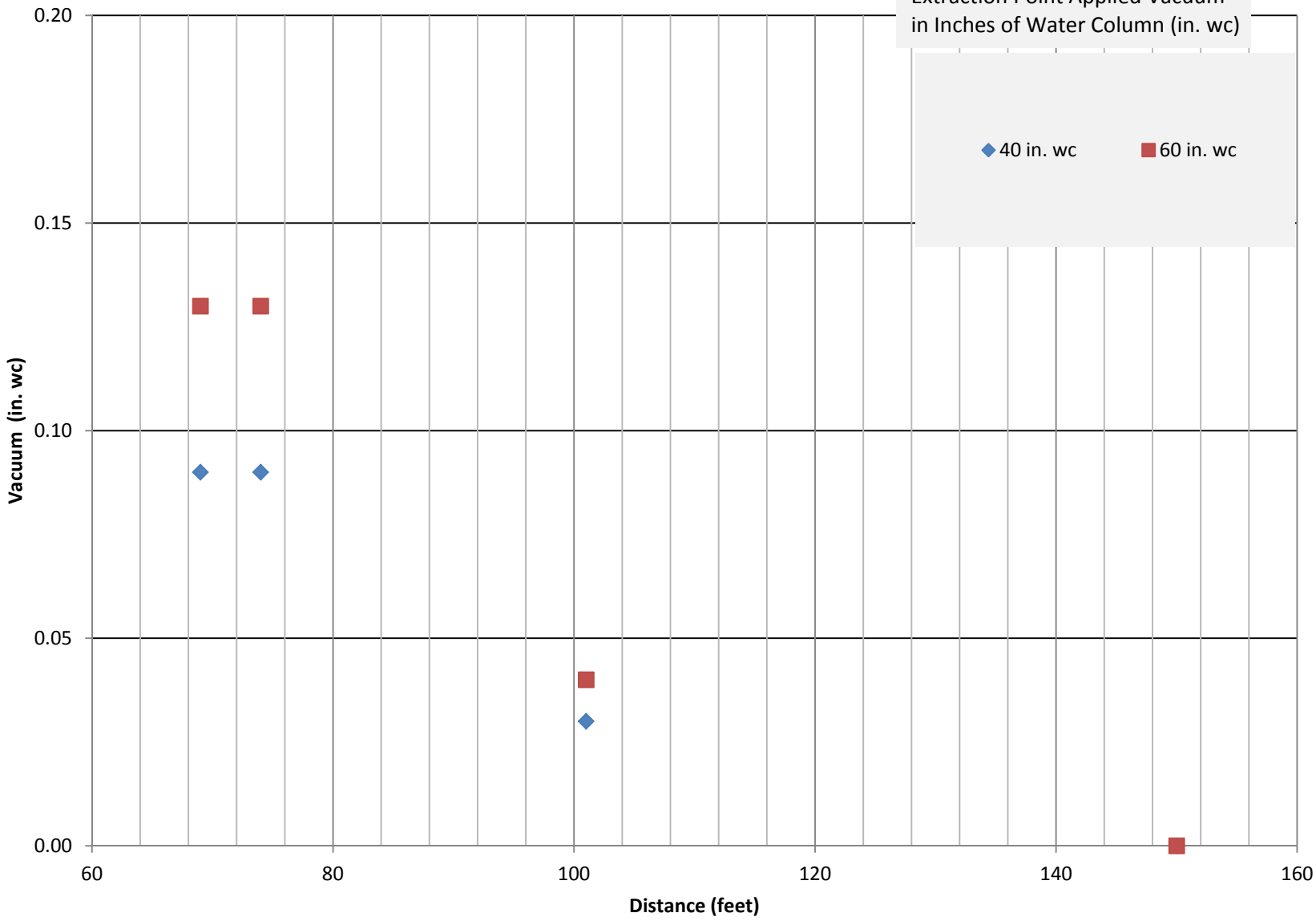
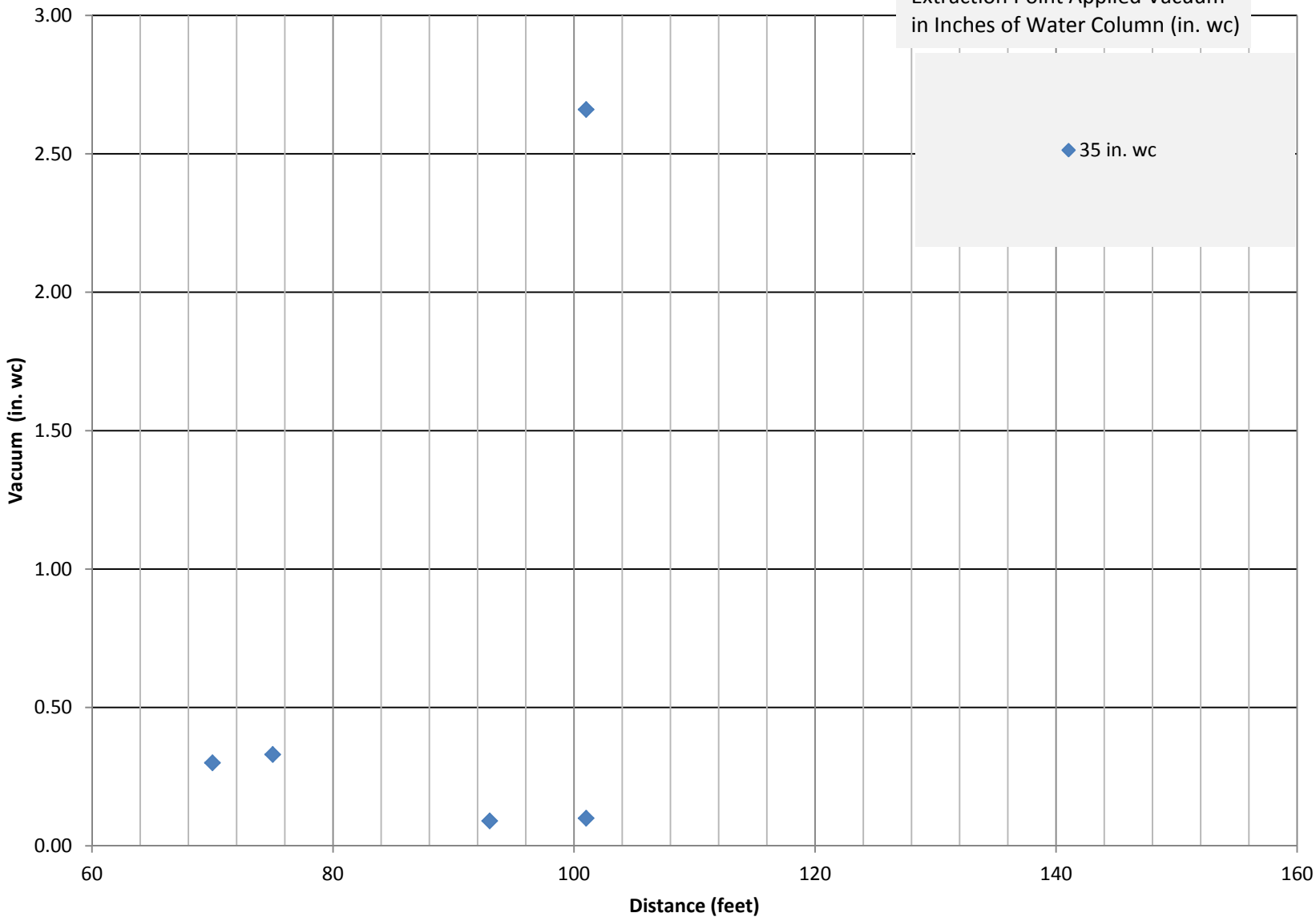


Figure 8: TR-20 EP-4 Constant-Rate Test - Vacuum vs Distance from the Extraction Point



Attachment A

Sub-Slab Soil Gas Analytical Reports

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10/22/2018
Mr. Peter Hollatz
AECOM Environment
5015 Campuswood Drive
Suite 104
East Syracuse NY 13057

Project Name: UTC-Carrier
Project #: 60581049.200
Workorder #: 1810306

Dear Mr. Peter Hollatz

The following report includes the data for the above referenced project for sample(s) received on 10/15/2018 at Air Toxics Ltd.

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

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

Regards,

Rachel Selenis

Project Manager

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WORK ORDER #: 1810306

Work Order Summary

CLIENT:	Mr. Peter Hollatz AECOM Environment 5015 Campuswood Drive Suite 104 East Syracuse, NY 13057	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	315.432.0506	**P.O. #**	60581049.200
FAX:		**PROJECT #**	60581049.200 UTC-Carrier
DATE RECEIVED:	10/15/2018	**CONTACT:**	Rachel Selenis
DATE COMPLETED:	10/22/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	TR20-EP-4	TO-15	6.0 "Hg	5 psi
02A	TR20-EP-2	TO-15	5.0 "Hg	5 psi
03A	TR20-EP-1	TO-15	6.0 "Hg	5 psi
04A	TR20-VMP-1	TO-15	5.0 "Hg	5 psi
05A	TR20-VMP-2	TO-15	5.5 "Hg	5 psi
06A	TR20-EP-3	TO-15	5.5 "Hg	5 psi
07A	FD-101218	TO-15	5.5 "Hg	5 psi
08A	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 10/20/18

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

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
AECOM Environment
Workorder# 1810306

Seven 6 Liter Summa Canister samples were received on October 15, 2018. The laboratory performed analysis via 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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported result for 4-Ethyltoluene in sample TR20-EP-4 may be biased high due to co-elution with a non target compound with similar characteristic ions. Both the primary and secondary ion for 4-Ethyltoluene exhibited potential interference.

Dilution was performed on samples TR20-EP-4, TR20-EP-3 and FD-101218 due to the presence of high level target species.

Definition of Data Qualifying Flags

Ten 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.
M - Reported value may be biased due to apparent matrix interferences.
CN - See Case Narrative.

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
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: TR20-EP-4

Lab ID#: 1810306-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	4.2	7.6	24	42
1,1-Dichloroethene	4.2	15	17	58
Acetone	42	110	100	250
Hexane	4.2	26	15	92
1,1-Dichloroethane	4.2	92	17	370
2-Butanone (Methyl Ethyl Ketone)	17	16 J	49	49 J
Chloroform	4.2	10	20	51
1,1,1-Trichloroethane	4.2	400	23	2200
Cyclohexane	4.2	76	14	260
Benzene	4.2	6.3	13	20
Heptane	4.2	18	17	76
Trichloroethene	4.2	940	22	5100
Toluene	4.2	12	16	47
Ethyl Benzene	4.2	23	18	100
m,p-Xylene	4.2	86	18	370
o-Xylene	4.2	30	18	130
Cumene	4.2	6.4	20	31
Propylbenzene	4.2	12	20	61
4-Ethyltoluene	4.2	60	20	300
1,3,5-Trimethylbenzene	4.2	32	20	160
1,2,4-Trimethylbenzene	4.2	68	20	340

Client Sample ID: TR20-EP-2

Lab ID#: 1810306-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.80	0.96	4.0	4.8
Freon 11	0.80	1.3	4.5	7.2
Acetone	8.0	48	19	110
2-Propanol	3.2	3.6	7.9	9.0
Carbon Disulfide	3.2	23	10	70
Hexane	0.80	1.0	2.8	3.6
1,1-Dichloroethane	0.80	1.3	3.2	5.4

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

Client Sample ID: TR20-EP-2

Lab ID#: 1810306-02A

2-Butanone (Methyl Ethyl Ketone)	3.2	4.2	9.5	12
Chloroform	0.80	2.4	3.9	12
1,1,1-Trichloroethane	0.80	20	4.4	110
Cyclohexane	0.80	3.0	2.8	10
Benzene	0.80	1.2	2.6	3.7
Trichloroethene	0.80	150	4.3	780
Toluene	0.80	1.6	3.0	6.2
Ethyl Benzene	0.80	7.8	3.5	34
m,p-Xylene	0.80	39	3.5	170
o-Xylene	0.80	23	3.5	100
Cumene	0.80	1.2	4.0	6.2
Propylbenzene	0.80	1.6	4.0	8.1
4-Ethyltoluene	0.80	3.4	4.0	17
1,3,5-Trimethylbenzene	0.80	3.5	4.0	17
1,2,4-Trimethylbenzene	0.80	6.6	4.0	33

Client Sample ID: TR20-EP-1

Lab ID#: 1810306-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.84	1.4	4.7	8.0
Ethanol	3.4	17	6.3	32
Acetone	8.4	67	20	160
2-Propanol	3.4	5.3	8.2	13
Carbon Disulfide	3.4	40	10	120
Hexane	0.84	3.1	3.0	11
2-Butanone (Methyl Ethyl Ketone)	3.4	5.5	9.9	16
Chloroform	0.84	6.8	4.1	33
1,1,1-Trichloroethane	0.84	7.9	4.6	43
Cyclohexane	0.84	37	2.9	130
Benzene	0.84	1.6	2.7	5.1
Heptane	0.84	1.8	3.4	7.3
Trichloroethene	0.84	8.9	4.5	48
Bromodichloromethane	0.84	1.2	5.6	8.3
4-Methyl-2-pentanone	0.84	1.2	3.4	5.0

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

Client Sample ID: TR20-EP-1

Lab ID#: 1810306-03A

Toluene	0.84	4.7	3.2	18
Ethyl Benzene	0.84	14	3.6	61
m,p-Xylene	0.84	69	3.6	300
o-Xylene	0.84	38	3.6	160
Cumene	0.84	1.3	4.1	6.6
Propylbenzene	0.84	1.2	4.1	6.0
4-Ethyltoluene	0.84	2.4	4.1	12
1,3,5-Trimethylbenzene	0.84	1.8	4.1	9.0
1,2,4-Trimethylbenzene	0.84	3.8	4.1	19

Client Sample ID: TR20-VMP-1

Lab ID#: 1810306-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.80	1.5	4.5	8.4
Ethanol	3.2	180	6.1	330
Acetone	8.0	38	19	89
2-Propanol	3.2	3.9	7.9	9.6
1,1,1-Trichloroethane	0.80	3.9	4.4	21
Toluene	0.80	1.4	3.0	5.4
Ethyl Benzene	0.80	2.0	3.5	8.6
m,p-Xylene	0.80	8.2	3.5	35
o-Xylene	0.80	2.4	3.5	10

Client Sample ID: TR20-VMP-2

Lab ID#: 1810306-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	3.3	58	6.2	110
Acetone	8.2	20	19	47
2-Propanol	3.3	8.6	8.1	21
Toluene	0.82	1.3	3.1	5.1
m,p-Xylene	0.82	1.3	3.6	5.6

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

Client Sample ID: TR20-EP-3

Lab ID#: 1810306-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	3.3	3.8	18	21
Ethanol	13	14	25	27
Acetone	33	76	78	180
Carbon Disulfide	13	33	41	100
Hexane	3.3	8.0	12	28
Chloroform	3.3	6.3	16	31
1,1,1-Trichloroethane	3.3	46	18	250
Cyclohexane	3.3	32	11	110
Benzene	3.3	6.1	10	19
Heptane	3.3	4.4	13	18
4-Methyl-2-pentanone	3.3	3.7	13	15
Toluene	3.3	870	12	3300
Ethyl Benzene	3.3	12	14	53
m,p-Xylene	3.3	58	14	250
o-Xylene	3.3	41	14	180
4-Ethyltoluene	3.3	4.2	16	20
1,2,4-Trimethylbenzene	3.3	7.1	16	35

Client Sample ID: FD-101218

Lab ID#: 1810306-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	3.3	4.7	18	26
Ethanol	13	14	25	27
Acetone	33	75	78	180
Carbon Disulfide	13	34	41	100
Hexane	3.3	7.9	12	28
Chloroform	3.3	6.1	16	30
1,1,1-Trichloroethane	3.3	48	18	260
Cyclohexane	3.3	33	11	110
Benzene	3.3	4.5	10	14
Heptane	3.3	4.6	13	19
4-Methyl-2-pentanone	3.3	3.4	13	14

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

Client Sample ID: FD-101218

Lab ID#: 1810306-07A

Toluene	3.3	750	12	2800
Tetrachloroethene	3.3	5.4	22	36
Ethyl Benzene	3.3	8.6	14	37
m,p-Xylene	3.3	24	14	100
o-Xylene	3.3	12	14	50

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Client Sample ID: TR20-EP-4

Lab ID#: 1810306-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101823**	**Date of Collection:**	**10/12/18 8:02:00 AM**
Dil. Factor:	**8.38**	**Date of Analysis:**	**10/18/18 09:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.2	Not Detected	21	Not Detected
Freon 114	4.2	Not Detected	29	Not Detected
Chloromethane	42	Not Detected	86	Not Detected
Vinyl Chloride	4.2	Not Detected	11	Not Detected
1,3-Butadiene	4.2	Not Detected	9.3	Not Detected
Bromomethane	42	Not Detected	160	Not Detected
Chloroethane	17	Not Detected	44	Not Detected
Freon 11	4.2	7.6	24	42
Ethanol	17	Not Detected	32	Not Detected
Freon 113	4.2	Not Detected	32	Not Detected
1,1-Dichloroethene	4.2	15	17	58
Acetone	42	110	100	250
2-Propanol	17	Not Detected	41	Not Detected
Carbon Disulfide	17	Not Detected	52	Not Detected
3-Chloropropene	17	Not Detected	52	Not Detected
Methylene Chloride	42	Not Detected	140	Not Detected
Methyl tert-butyl ether	17	Not Detected	60	Not Detected
trans-1,2-Dichloroethene	4.2	Not Detected	17	Not Detected
Hexane	4.2	26	15	92
1,1-Dichloroethane	4.2	92	17	370
2-Butanone (Methyl Ethyl Ketone)	17	16 J	49	49 J
cis-1,2-Dichloroethene	4.2	Not Detected	17	Not Detected
Tetrahydrofuran	4.2	Not Detected	12	Not Detected
Chloroform	4.2	10	20	51
1,1,1-Trichloroethane	4.2	400	23	2200
Cyclohexane	4.2	76	14	260
Carbon Tetrachloride	4.2	Not Detected	26	Not Detected
2,2,4-Trimethylpentane	4.2	Not Detected	20	Not Detected
Benzene	4.2	6.3	13	20
1,2-Dichloroethane	4.2	Not Detected	17	Not Detected
Heptane	4.2	18	17	76
Trichloroethene	4.2	940	22	5100
1,2-Dichloropropane	4.2	Not Detected	19	Not Detected
1,4-Dioxane	17	Not Detected	60	Not Detected
Bromodichloromethane	4.2	Not Detected	28	Not Detected
cis-1,3-Dichloropropene	4.2	Not Detected	19	Not Detected
4-Methyl-2-pentanone	4.2	Not Detected	17	Not Detected
Toluene	4.2	12	16	47
trans-1,3-Dichloropropene	4.2	Not Detected	19	Not Detected
1,1,2-Trichloroethane	4.2	Not Detected	23	Not Detected
Tetrachloroethene	4.2	Not Detected	28	Not Detected
2-Hexanone	17	Not Detected	69	Not Detected

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Client Sample ID: TR20-EP-4

Lab ID#: 1810306-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101823**	**Date of Collection:**	**10/12/18 8:02:00 AM**
Dil. Factor:	**8.38**	**Date of Analysis:**	**10/18/18 09:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.2	Not Detected	36	Not Detected
1,2-Dibromoethane (EDB)	4.2	Not Detected	32	Not Detected
Chlorobenzene	4.2	Not Detected	19	Not Detected
Ethyl Benzene	4.2	23	18	100
m,p-Xylene	4.2	86	18	370
o-Xylene	4.2	30	18	130
Styrene	4.2	Not Detected	18	Not Detected
Bromoform	4.2	Not Detected	43	Not Detected
Cumene	4.2	6.4	20	31
1,1,2,2-Tetrachloroethane	4.2	Not Detected	29	Not Detected
Propylbenzene	4.2	12	20	61
4-Ethyltoluene	4.2	60	20	300
1,3,5-Trimethylbenzene	4.2	32	20	160
1,2,4-Trimethylbenzene	4.2	68	20	340
1,3-Dichlorobenzene	4.2	Not Detected	25	Not Detected
1,4-Dichlorobenzene	4.2	Not Detected	25	Not Detected
alpha-Chlorotoluene	4.2	Not Detected	22	Not Detected
1,2-Dichlorobenzene	4.2	Not Detected	25	Not Detected
1,2,4-Trichlorobenzene	17	Not Detected	120	Not Detected
Hexachlorobutadiene	17	Not Detected	180	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: TR20-EP-2

Lab ID#: 1810306-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101817**	**Date of Collection:**	**10/12/18 8:26:00 AM**
Dil. Factor:	**1.61**	**Date of Analysis:**	**10/18/18 06:36 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.80	0.96	4.0	4.8
Freon 114	0.80	Not Detected	5.6	Not Detected
Chloromethane	8.0	Not Detected	17	Not Detected
Vinyl Chloride	0.80	Not Detected	2.0	Not Detected
1,3-Butadiene	0.80	Not Detected	1.8	Not Detected
Bromomethane	8.0	Not Detected	31	Not Detected
Chloroethane	3.2	Not Detected	8.5	Not Detected
Freon 11	0.80	1.3	4.5	7.2
Ethanol	3.2	Not Detected	6.1	Not Detected
Freon 113	0.80	Not Detected	6.2	Not Detected
1,1-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Acetone	8.0	48	19	110
2-Propanol	3.2	3.6	7.9	9.0
Carbon Disulfide	3.2	23	10	70
3-Chloropropene	3.2	Not Detected	10	Not Detected
Methylene Chloride	8.0	Not Detected	28	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Hexane	0.80	1.0	2.8	3.6
1,1-Dichloroethane	0.80	1.3	3.2	5.4
2-Butanone (Methyl Ethyl Ketone)	3.2	4.2	9.5	12
cis-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.80	2.4	3.9	12
1,1,1-Trichloroethane	0.80	20	4.4	110
Cyclohexane	0.80	3.0	2.8	10
Carbon Tetrachloride	0.80	Not Detected	5.1	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
Benzene	0.80	1.2	2.6	3.7
1,2-Dichloroethane	0.80	Not Detected	3.2	Not Detected
Heptane	0.80	Not Detected	3.3	Not Detected
Trichloroethene	0.80	150	4.3	780
1,2-Dichloropropane	0.80	Not Detected	3.7	Not Detected
1,4-Dioxane	3.2	Not Detected	12	Not Detected
Bromodichloromethane	0.80	Not Detected	5.4	Not Detected
cis-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
4-Methyl-2-pentanone	0.80	Not Detected	3.3	Not Detected
Toluene	0.80	1.6	3.0	6.2
trans-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
1,1,2-Trichloroethane	0.80	Not Detected	4.4	Not Detected
Tetrachloroethene	0.80	Not Detected	5.5	Not Detected
2-Hexanone	3.2	Not Detected	13	Not Detected

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Client Sample ID: TR20-EP-2

Lab ID#: 1810306-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101817**	**Date of Collection: 10/12/18 8:26:00 AM**	
Dil. Factor:	**1.61**	**Date of Analysis: 10/18/18 06:36 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.80	Not Detected	6.8	Not Detected
1,2-Dibromoethane (EDB)	0.80	Not Detected	6.2	Not Detected
Chlorobenzene	0.80	Not Detected	3.7	Not Detected
Ethyl Benzene	0.80	7.8	3.5	34
m,p-Xylene	0.80	39	3.5	170
o-Xylene	0.80	23	3.5	100
Styrene	0.80	Not Detected	3.4	Not Detected
Bromoform	0.80	Not Detected	8.3	Not Detected
Cumene	0.80	1.2	4.0	6.2
1,1,2,2-Tetrachloroethane	0.80	Not Detected	5.5	Not Detected
Propylbenzene	0.80	1.6	4.0	8.1
4-Ethyltoluene	0.80	3.4	4.0	17
1,3,5-Trimethylbenzene	0.80	3.5	4.0	17
1,2,4-Trimethylbenzene	0.80	6.6	4.0	33
1,3-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,4-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
alpha-Chlorotoluene	0.80	Not Detected	4.2	Not Detected
1,2-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,2,4-Trichlorobenzene	3.2	Not Detected	24	Not Detected
Hexachlorobutadiene	3.2	Not Detected	34	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: TR20-EP-1

Lab ID#: 1810306-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101818**	**Date of Collection:**	**10/12/18 8:42:00 AM**
Dil. Factor:	**1.68**	**Date of Analysis:**	**10/18/18 07:02 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	Not Detected	4.2	Not Detected
Freon 114	0.84	Not Detected	5.9	Not Detected
Chloromethane	8.4	Not Detected	17	Not Detected
Vinyl Chloride	0.84	Not Detected	2.1	Not Detected
1,3-Butadiene	0.84	Not Detected	1.8	Not Detected
Bromomethane	8.4	Not Detected	33	Not Detected
Chloroethane	3.4	Not Detected	8.9	Not Detected
Freon 11	0.84	1.4	4.7	8.0
Ethanol	3.4	17	6.3	32
Freon 113	0.84	Not Detected	6.4	Not Detected
1,1-Dichloroethene	0.84	Not Detected	3.3	Not Detected
Acetone	8.4	67	20	160
2-Propanol	3.4	5.3	8.2	13
Carbon Disulfide	3.4	40	10	120
3-Chloropropene	3.4	Not Detected	10	Not Detected
Methylene Chloride	8.4	Not Detected	29	Not Detected
Methyl tert-butyl ether	3.4	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	0.84	Not Detected	3.3	Not Detected
Hexane	0.84	3.1	3.0	11
1,1-Dichloroethane	0.84	Not Detected	3.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.4	5.5	9.9	16
cis-1,2-Dichloroethene	0.84	Not Detected	3.3	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.84	6.8	4.1	33
1,1,1-Trichloroethane	0.84	7.9	4.6	43
Cyclohexane	0.84	37	2.9	130
Carbon Tetrachloride	0.84	Not Detected	5.3	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.84	1.6	2.7	5.1
1,2-Dichloroethane	0.84	Not Detected	3.4	Not Detected
Heptane	0.84	1.8	3.4	7.3
Trichloroethene	0.84	8.9	4.5	48
1,2-Dichloropropane	0.84	Not Detected	3.9	Not Detected
1,4-Dioxane	3.4	Not Detected	12	Not Detected
Bromodichloromethane	0.84	1.2	5.6	8.3
cis-1,3-Dichloropropene	0.84	Not Detected	3.8	Not Detected
4-Methyl-2-pentanone	0.84	1.2	3.4	5.0
Toluene	0.84	4.7	3.2	18
trans-1,3-Dichloropropene	0.84	Not Detected	3.8	Not Detected
1,1,2-Trichloroethane	0.84	Not Detected	4.6	Not Detected
Tetrachloroethene	0.84	Not Detected	5.7	Not Detected
2-Hexanone	3.4	Not Detected	14	Not Detected

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Client Sample ID: TR20-EP-1

Lab ID#: 1810306-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101818**	**Date of Collection:**	**10/12/18 8:42:00 AM**
Dil. Factor:	**1.68**	**Date of Analysis:**	**10/18/18 07:02 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.84	Not Detected	7.2	Not Detected
1,2-Dibromoethane (EDB)	0.84	Not Detected	6.4	Not Detected
Chlorobenzene	0.84	Not Detected	3.9	Not Detected
Ethyl Benzene	0.84	14	3.6	61
m,p-Xylene	0.84	69	3.6	300
o-Xylene	0.84	38	3.6	160
Styrene	0.84	Not Detected	3.6	Not Detected
Bromoform	0.84	Not Detected	8.7	Not Detected
Cumene	0.84	1.3	4.1	6.6
1,1,2,2-Tetrachloroethane	0.84	Not Detected	5.8	Not Detected
Propylbenzene	0.84	1.2	4.1	6.0
4-Ethyltoluene	0.84	2.4	4.1	12
1,3,5-Trimethylbenzene	0.84	1.8	4.1	9.0
1,2,4-Trimethylbenzene	0.84	3.8	4.1	19
1,3-Dichlorobenzene	0.84	Not Detected	5.0	Not Detected
1,4-Dichlorobenzene	0.84	Not Detected	5.0	Not Detected
alpha-Chlorotoluene	0.84	Not Detected	4.3	Not Detected
1,2-Dichlorobenzene	0.84	Not Detected	5.0	Not Detected
1,2,4-Trichlorobenzene	3.4	Not Detected	25	Not Detected
Hexachlorobutadiene	3.4	Not Detected	36	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: TR20-VMP-1

Lab ID#: 1810306-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101819**	**Date of Collection:**	**10/12/18 8:57:00 AM**
Dil. Factor:	**1.61**	**Date of Analysis:**	**10/18/18 07:29 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.80	Not Detected	4.0	Not Detected
Freon 114	0.80	Not Detected	5.6	Not Detected
Chloromethane	8.0	Not Detected	17	Not Detected
Vinyl Chloride	0.80	Not Detected	2.0	Not Detected
1,3-Butadiene	0.80	Not Detected	1.8	Not Detected
Bromomethane	8.0	Not Detected	31	Not Detected
Chloroethane	3.2	Not Detected	8.5	Not Detected
Freon 11	0.80	1.5	4.5	8.4
Ethanol	3.2	180	6.1	330
Freon 113	0.80	Not Detected	6.2	Not Detected
1,1-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Acetone	8.0	38	19	89
2-Propanol	3.2	3.9	7.9	9.6
Carbon Disulfide	3.2	Not Detected	10	Not Detected
3-Chloropropene	3.2	Not Detected	10	Not Detected
Methylene Chloride	8.0	Not Detected	28	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Hexane	0.80	Not Detected	2.8	Not Detected
1,1-Dichloroethane	0.80	Not Detected	3.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.2	Not Detected	9.5	Not Detected
cis-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.80	Not Detected	3.9	Not Detected
1,1,1-Trichloroethane	0.80	3.9	4.4	21
Cyclohexane	0.80	Not Detected	2.8	Not Detected
Carbon Tetrachloride	0.80	Not Detected	5.1	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
Benzene	0.80	Not Detected	2.6	Not Detected
1,2-Dichloroethane	0.80	Not Detected	3.2	Not Detected
Heptane	0.80	Not Detected	3.3	Not Detected
Trichloroethene	0.80	Not Detected	4.3	Not Detected
1,2-Dichloropropane	0.80	Not Detected	3.7	Not Detected
1,4-Dioxane	3.2	Not Detected	12	Not Detected
Bromodichloromethane	0.80	Not Detected	5.4	Not Detected
cis-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
4-Methyl-2-pentanone	0.80	Not Detected	3.3	Not Detected
Toluene	0.80	1.4	3.0	5.4
trans-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
1,1,2-Trichloroethane	0.80	Not Detected	4.4	Not Detected
Tetrachloroethene	0.80	Not Detected	5.5	Not Detected
2-Hexanone	3.2	Not Detected	13	Not Detected

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Client Sample ID: TR20-VMP-1

Lab ID#: 1810306-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101819**	**Date of Collection:**	**10/12/18 8:57:00 AM**
Dil. Factor:	**1.61**	**Date of Analysis:**	**10/18/18 07:29 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.80	Not Detected	6.8	Not Detected
1,2-Dibromoethane (EDB)	0.80	Not Detected	6.2	Not Detected
Chlorobenzene	0.80	Not Detected	3.7	Not Detected
Ethyl Benzene	0.80	2.0	3.5	8.6
m,p-Xylene	0.80	8.2	3.5	35
o-Xylene	0.80	2.4	3.5	10
Styrene	0.80	Not Detected	3.4	Not Detected
Bromoform	0.80	Not Detected	8.3	Not Detected
Cumene	0.80	Not Detected	4.0	Not Detected
1,1,2,2-Tetrachloroethane	0.80	Not Detected	5.5	Not Detected
Propylbenzene	0.80	Not Detected	4.0	Not Detected
4-Ethyltoluene	0.80	Not Detected	4.0	Not Detected
1,3,5-Trimethylbenzene	0.80	Not Detected	4.0	Not Detected
1,2,4-Trimethylbenzene	0.80	Not Detected	4.0	Not Detected
1,3-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,4-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
alpha-Chlorotoluene	0.80	Not Detected	4.2	Not Detected
1,2-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,2,4-Trichlorobenzene	3.2	Not Detected	24	Not Detected
Hexachlorobutadiene	3.2	Not Detected	34	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: TR20-VMP-2

Lab ID#: 1810306-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101820**	**Date of Collection:**	**10/12/18 9:15:00 AM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**10/18/18 07:55 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.82	Not Detected	4.0	Not Detected
Freon 114	0.82	Not Detected	5.7	Not Detected
Chloromethane	8.2	Not Detected	17	Not Detected
Vinyl Chloride	0.82	Not Detected	2.1	Not Detected
1,3-Butadiene	0.82	Not Detected	1.8	Not Detected
Bromomethane	8.2	Not Detected	32	Not Detected
Chloroethane	3.3	Not Detected	8.6	Not Detected
Freon 11	0.82	Not Detected	4.6	Not Detected
Ethanol	3.3	58	6.2	110
Freon 113	0.82	Not Detected	6.3	Not Detected
1,1-Dichloroethene	0.82	Not Detected	3.2	Not Detected
Acetone	8.2	20	19	47
2-Propanol	3.3	8.6	8.1	21
Carbon Disulfide	3.3	Not Detected	10	Not Detected
3-Chloropropene	3.3	Not Detected	10	Not Detected
Methylene Chloride	8.2	Not Detected	28	Not Detected
Methyl tert-butyl ether	3.3	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	0.82	Not Detected	3.2	Not Detected
Hexane	0.82	Not Detected	2.9	Not Detected
1,1-Dichloroethane	0.82	Not Detected	3.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.3	Not Detected	9.7	Not Detected
cis-1,2-Dichloroethene	0.82	Not Detected	3.2	Not Detected
Tetrahydrofuran	0.82	Not Detected	2.4	Not Detected
Chloroform	0.82	Not Detected	4.0	Not Detected
1,1,1-Trichloroethane	0.82	Not Detected	4.5	Not Detected
Cyclohexane	0.82	Not Detected	2.8	Not Detected
Carbon Tetrachloride	0.82	Not Detected	5.2	Not Detected
2,2,4-Trimethylpentane	0.82	Not Detected	3.8	Not Detected
Benzene	0.82	Not Detected	2.6	Not Detected
1,2-Dichloroethane	0.82	Not Detected	3.3	Not Detected
Heptane	0.82	Not Detected	3.4	Not Detected
Trichloroethene	0.82	Not Detected	4.4	Not Detected
1,2-Dichloropropane	0.82	Not Detected	3.8	Not Detected
1,4-Dioxane	3.3	Not Detected	12	Not Detected
Bromodichloromethane	0.82	Not Detected	5.5	Not Detected
cis-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected
4-Methyl-2-pentanone	0.82	Not Detected	3.4	Not Detected
Toluene	0.82	1.3	3.1	5.1
trans-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected
1,1,2-Trichloroethane	0.82	Not Detected	4.5	Not Detected
Tetrachloroethene	0.82	Not Detected	5.6	Not Detected
2-Hexanone	3.3	Not Detected	13	Not Detected

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Client Sample ID: TR20-VMP-2

Lab ID#: 1810306-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101820**	**Date of Collection: 10/12/18 9:15:00 AM**	
Dil. Factor:	**1.64**	**Date of Analysis: 10/18/18 07:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.82	Not Detected	7.0	Not Detected
1,2-Dibromoethane (EDB)	0.82	Not Detected	6.3	Not Detected
Chlorobenzene	0.82	Not Detected	3.8	Not Detected
Ethyl Benzene	0.82	Not Detected	3.6	Not Detected
m,p-Xylene	0.82	1.3	3.6	5.6
o-Xylene	0.82	Not Detected	3.6	Not Detected
Styrene	0.82	Not Detected	3.5	Not Detected
Bromoform	0.82	Not Detected	8.5	Not Detected
Cumene	0.82	Not Detected	4.0	Not Detected
1,1,2,2-Tetrachloroethane	0.82	Not Detected	5.6	Not Detected
Propylbenzene	0.82	Not Detected	4.0	Not Detected
4-Ethyltoluene	0.82	Not Detected	4.0	Not Detected
1,3,5-Trimethylbenzene	0.82	Not Detected	4.0	Not Detected
1,2,4-Trimethylbenzene	0.82	Not Detected	4.0	Not Detected
1,3-Dichlorobenzene	0.82	Not Detected	4.9	Not Detected
1,4-Dichlorobenzene	0.82	Not Detected	4.9	Not Detected
alpha-Chlorotoluene	0.82	Not Detected	4.2	Not Detected
1,2-Dichlorobenzene	0.82	Not Detected	4.9	Not Detected
1,2,4-Trichlorobenzene	3.3	Not Detected	24	Not Detected
Hexachlorobutadiene	3.3	Not Detected	35	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	118	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: TR20-EP-3

Lab ID#: 1810306-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101821**	**Date of Collection:**	**10/12/18 9:30:00 AM**
Dil. Factor:	**6.56**	**Date of Analysis:**	**10/18/18 08:20 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.3	Not Detected	16	Not Detected
Freon 114	3.3	Not Detected	23	Not Detected
Chloromethane	33	Not Detected	68	Not Detected
Vinyl Chloride	3.3	Not Detected	8.4	Not Detected
1,3-Butadiene	3.3	Not Detected	7.2	Not Detected
Bromomethane	33	Not Detected	130	Not Detected
Chloroethane	13	Not Detected	35	Not Detected
Freon 11	3.3	3.8	18	21
Ethanol	13	14	25	27
Freon 113	3.3	Not Detected	25	Not Detected
1,1-Dichloroethene	3.3	Not Detected	13	Not Detected
Acetone	33	76	78	180
2-Propanol	13	Not Detected	32	Not Detected
Carbon Disulfide	13	33	41	100
3-Chloropropene	13	Not Detected	41	Not Detected
Methylene Chloride	33	Not Detected	110	Not Detected
Methyl tert-butyl ether	13	Not Detected	47	Not Detected
trans-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Hexane	3.3	8.0	12	28
1,1-Dichloroethane	3.3	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	39	Not Detected
cis-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Tetrahydrofuran	3.3	Not Detected	9.7	Not Detected
Chloroform	3.3	6.3	16	31
1,1,1-Trichloroethane	3.3	46	18	250
Cyclohexane	3.3	32	11	110
Carbon Tetrachloride	3.3	Not Detected	21	Not Detected
2,2,4-Trimethylpentane	3.3	Not Detected	15	Not Detected
Benzene	3.3	6.1	10	19
1,2-Dichloroethane	3.3	Not Detected	13	Not Detected
Heptane	3.3	4.4	13	18
Trichloroethene	3.3	Not Detected	18	Not Detected
1,2-Dichloropropane	3.3	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	47	Not Detected
Bromodichloromethane	3.3	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.3	3.7	13	15
Toluene	3.3	870	12	3300
trans-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.3	Not Detected	18	Not Detected
Tetrachloroethene	3.3	Not Detected	22	Not Detected
2-Hexanone	13	Not Detected	54	Not Detected

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Client Sample ID: TR20-EP-3

Lab ID#: 1810306-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101821**	**Date of Collection: 10/12/18 9:30:00 AM**	
Dil. Factor:	**6.56**	**Date of Analysis: 10/18/18 08:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.3	Not Detected	28	Not Detected
1,2-Dibromoethane (EDB)	3.3	Not Detected	25	Not Detected
Chlorobenzene	3.3	Not Detected	15	Not Detected
Ethyl Benzene	3.3	12	14	53
m,p-Xylene	3.3	58	14	250
o-Xylene	3.3	41	14	180
Styrene	3.3	Not Detected	14	Not Detected
Bromoform	3.3	Not Detected	34	Not Detected
Cumene	3.3	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.3	Not Detected	22	Not Detected
Propylbenzene	3.3	Not Detected	16	Not Detected
4-Ethyltoluene	3.3	4.2	16	20
1,3,5-Trimethylbenzene	3.3	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.3	7.1	16	35
1,3-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.3	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.3	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	97	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: FD-101218

Lab ID#: 1810306-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101822**	**Date of Collection: 10/12/18**	
Dil. Factor:	**6.56**	**Date of Analysis: 10/18/18 08:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.3	Not Detected	16	Not Detected
Freon 114	3.3	Not Detected	23	Not Detected
Chloromethane	33	Not Detected	68	Not Detected
Vinyl Chloride	3.3	Not Detected	8.4	Not Detected
1,3-Butadiene	3.3	Not Detected	7.2	Not Detected
Bromomethane	33	Not Detected	130	Not Detected
Chloroethane	13	Not Detected	35	Not Detected
Freon 11	3.3	4.7	18	26
Ethanol	13	14	25	27
Freon 113	3.3	Not Detected	25	Not Detected
1,1-Dichloroethene	3.3	Not Detected	13	Not Detected
Acetone	33	75	78	180
2-Propanol	13	Not Detected	32	Not Detected
Carbon Disulfide	13	34	41	100
3-Chloropropene	13	Not Detected	41	Not Detected
Methylene Chloride	33	Not Detected	110	Not Detected
Methyl tert-butyl ether	13	Not Detected	47	Not Detected
trans-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Hexane	3.3	7.9	12	28
1,1-Dichloroethane	3.3	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	39	Not Detected
cis-1,2-Dichloroethene	3.3	Not Detected	13	Not Detected
Tetrahydrofuran	3.3	Not Detected	9.7	Not Detected
Chloroform	3.3	6.1	16	30
1,1,1-Trichloroethane	3.3	48	18	260
Cyclohexane	3.3	33	11	110
Carbon Tetrachloride	3.3	Not Detected	21	Not Detected
2,2,4-Trimethylpentane	3.3	Not Detected	15	Not Detected
Benzene	3.3	4.5	10	14
1,2-Dichloroethane	3.3	Not Detected	13	Not Detected
Heptane	3.3	4.6	13	19
Trichloroethene	3.3	Not Detected	18	Not Detected
1,2-Dichloropropane	3.3	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	47	Not Detected
Bromodichloromethane	3.3	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.3	3.4	13	14
Toluene	3.3	750	12	2800
trans-1,3-Dichloropropene	3.3	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.3	Not Detected	18	Not Detected
Tetrachloroethene	3.3	5.4	22	36
2-Hexanone	13	Not Detected	54	Not Detected

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Client Sample ID: FD-101218

Lab ID#: 1810306-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101822**	**Date of Collection: 10/12/18**	
Dil. Factor:	**6.56**	**Date of Analysis: 10/18/18 08:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.3	Not Detected	28	Not Detected
1,2-Dibromoethane (EDB)	3.3	Not Detected	25	Not Detected
Chlorobenzene	3.3	Not Detected	15	Not Detected
Ethyl Benzene	3.3	8.6	14	37
m,p-Xylene	3.3	24	14	100
o-Xylene	3.3	12	14	50
Styrene	3.3	Not Detected	14	Not Detected
Bromoform	3.3	Not Detected	34	Not Detected
Cumene	3.3	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.3	Not Detected	22	Not Detected
Propylbenzene	3.3	Not Detected	16	Not Detected
4-Ethyltoluene	3.3	Not Detected	16	Not Detected
1,3,5-Trimethylbenzene	3.3	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.3	Not Detected	16	Not Detected
1,3-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.3	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.3	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.3	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	97	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	115	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1810306-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 10:29 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1810306-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 10:29 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: CCV

Lab ID#: 1810306-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101802**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 09:10 AM**

Compound	%Recovery
Freon 12	110
Freon 114	97
Chloromethane	104
Vinyl Chloride	100
1,3-Butadiene	96
Bromomethane	99
Chloroethane	102
Freon 11	108
Ethanol	86
Freon 113	102
1,1-Dichloroethene	106
Acetone	88
2-Propanol	96
Carbon Disulfide	94
3-Chloropropene	91
Methylene Chloride	106
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	103
Hexane	95
1,1-Dichloroethane	103
2-Butanone (Methyl Ethyl Ketone)	94
cis-1,2-Dichloroethene	109
Tetrahydrofuran	92
Chloroform	102
1,1,1-Trichloroethane	106
Cyclohexane	100
Carbon Tetrachloride	110
2,2,4-Trimethylpentane	101
Benzene	95
1,2-Dichloroethane	109
Heptane	100
Trichloroethene	97
1,2-Dichloropropane	93
1,4-Dioxane	100
Bromodichloromethane	107
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	98
Toluene	95
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	100
Tetrachloroethene	99
2-Hexanone	97

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Client Sample ID: CCV

Lab ID#: 1810306-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 09:10 AM**	

Compound	%Recovery
Dibromochloromethane	106
1,2-Dibromoethane (EDB)	100
Chlorobenzene	94
Ethyl Benzene	105
m,p-Xylene	102
o-Xylene	101
Styrene	113
Bromoform	102
Cumene	110
1,1,2,2-Tetrachloroethane	101
Propylbenzene	104
4-Ethyltoluene	108
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	95
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	105
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	91
Hexachlorobutadiene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	110	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1810306-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 09:35 AM**	

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	94	70-130
Chloromethane	107	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	91	70-130
Bromomethane	97	70-130
Chloroethane	103	70-130
Freon 11	104	70-130
Ethanol	90	70-130
Freon 113	91	70-130
1,1-Dichloroethene	97	70-130
Acetone	88	70-130
2-Propanol	95	70-130
Carbon Disulfide	94	70-130
3-Chloropropene	92	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	95	70-130
trans-1,2-Dichloroethene	106	70-130
Hexane	93	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	91	70-130
Tetrahydrofuran	93	70-130
Chloroform	97	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	96	70-130
1,2-Dichloroethane	105	70-130
Heptane	104	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	100	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	106	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	103	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	102	70-130
2-Hexanone	99	70-130

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Client Sample ID: LCS

Lab ID#: 1810306-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 09:35 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	101	70-130
o-Xylene	104	70-130
Styrene	111	70-130
Bromoform	107	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	103	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	109	70-130
alpha-Chlorotoluene	115	70-130
1,2-Dichlorobenzene	101	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1810306-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 10:01 AM**	

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	94	70-130
Chloromethane	102	70-130
Vinyl Chloride	100	70-130
1,3-Butadiene	93	70-130
Bromomethane	98	70-130
Chloroethane	102	70-130
Freon 11	104	70-130
Ethanol	87	70-130
Freon 113	95	70-130
1,1-Dichloroethene	96	70-130
Acetone	86	70-130
2-Propanol	96	70-130
Carbon Disulfide	92	70-130
3-Chloropropene	95	70-130
Methylene Chloride	97	70-130
Methyl tert-butyl ether	97	70-130
trans-1,2-Dichloroethene	100	70-130
Hexane	96	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	94	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	94	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	97	70-130
Benzene	95	70-130
1,2-Dichloroethane	102	70-130
Heptane	102	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	101	70-130
Bromodichloromethane	105	70-130
cis-1,3-Dichloropropene	101	70-130
4-Methyl-2-pentanone	101	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	102	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	98	70-130
2-Hexanone	99	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1810306-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/18/18 10:01 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	107	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	102	70-130
o-Xylene	103	70-130
Styrene	112	70-130
Bromoform	104	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	116	70-130
1,3,5-Trimethylbenzene	107	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	103	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	108	70-130

AIR SAMPLE
CHAIN OF CUSTODY RECORD

URS CORPORATION
77 GOODELL STREET
BUFFALO, NY 14203
PHONE: 716-856-5636

URS CONTACT: Ann Marie Kropovitch

PROJECT NUMBER: 60581049.200

SITE NAME: UTC - Carrier

SAMPLERS (PRINT/SIGNATURE): Rob Murphy / Rob Murphy
Tom Urban / Tom Urban Ron Russo / Ron Russo

DELIVERY SERVICE: Fed Ex AIRBILL NO.: 4470 2788 0748 4470 2788 0759

LAB: Eurofins

SHIPPING CONTAINER: 2 boxes of ____

PAGE: 1 of 1

	LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
01A	TR-20	10/12/18	0902	TR20-EP-4	AS	6	6L1452	23574	-29.5	-6		X				N_1
02A	TR-20	10/12/18	0826	TR20-EP-2	AS	6	2253	23648	-30	-5		X				N_1
03A	TR-20	10/12/18	0842	TR20-EP-1	AS	6	6L0599	23210	-30	-6		X				N_1
04A	TR-20	10/12/18	0857	TR20-VMP-1	AS	6	6L1490	23438	-30	-5		X				N_1
05A	TR-20	10/12/18	0915	TR20-VMP-2	AS	6	14111	23460	-29	-5		X				N_1
06A	TR-20	10/12/18	0930	TR20-EP-3	AS	6	6L0069	23204	-30	-5		X				N_1
07A	FD-1	10/12/18	—	FD-101218	AS	6	34202	23380	-30	-5.5		X				FD_1

MATRIX CODES: AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS

SAMPLE TYPE CODES: N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
[signature]	10/12/18	1845	[signature] FAIR	10/13/18	1095
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS: Fed Ex

Custody Seal Intact?

Y N (None) Temp NA

1810306

Distribution: Original accompanies shipment, copy to project file

URSF-075K/1 OF 1/ColCR/GCM

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 07, 2018

AECOM_UTC

Sample Delivery Group:	L1040077
Samples Received:	11/01/2018
Project Number:	60581049-200
Description:	UTC Carrier - Syracuse, NY

Report To:

Peter Hollatz
500 Enterprise Dr.
Suite 1A
Rocky Hill, CT 06067

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

TR20-EP-4 L1040077-01 5

TR20-EP-2 L1040077-02 7

Qc: Quality Control Summary 9

Volatile Organic Compounds (MS) by Method TO-15 9

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

TR20-EP-4 L1040077-01 Air

Collected by	Collected date/time	Received date/time
Tom Urban	10/31/18 08:01	11/01/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1189700	1	11/01/18 18:58	11/01/18 18:58	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1190353	20	11/02/18 20:11	11/02/18 20:11	MBF

TR20-EP-2 L1040077-02 Air

Collected by	Collected date/time	Received date/time
Tom Urban	10/31/18 08:08	11/01/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1189700	1	11/01/18 19:43	11/01/18 19:43	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1190353	20	11/02/18 20:53	11/02/18 20:53	MBF

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris McCord
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1189700
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1189700
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1189700
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1189700
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1189700
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1189700
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1189700
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1189700
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.304	0.947		1	WG1189700
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1189700
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1189700
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1189700
Chloroform	67-66-3	119	0.200	0.973	1.80	8.74		1	WG1189700
Chloromethane	74-87-3	50.50	0.200	0.413	0.320	0.661		1	WG1189700
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1189700
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1189700
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1189700
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1189700
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1189700
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1189700
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1189700
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1189700
1,1-Dichloroethane	75-34-3	98	0.200	0.802	10.2	40.9		1	WG1189700
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1189700
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	0.503	1.99		1	WG1189700
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1189700
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1189700
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1189700
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1189700
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1189700
Ethanol	64-17-5	46.10	0.630	1.19	1.49	2.82		1	WG1189700
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1189700
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.260	1.28		1	WG1189700
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	2.87	16.1		1	WG1189700
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.355	1.75		1	WG1189700
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1189700
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1189700
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1189700
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1189700
n-Hexane	110-54-3	86.20	0.200	0.705	0.247	0.872		1	WG1189700
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.203	0.996		1	WG1189700
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1189700
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1189700
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1189700
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1189700
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1189700
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1189700
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1189700
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1189700
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1189700
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1189700
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1189700
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.640	4.34		1	WG1189700
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1189700
Toluene	108-88-3	92.10	0.200	0.753	1.28	4.82		1	WG1189700
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1189700

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	4.00	21.8	88.3	480		20	WG1190353
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1189700
Trichloroethylene	79-01-6	131	4.00	21.4	191	1020		20	WG1190353
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.295	1.45		1	WG1189700
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1189700
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1189700
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1189700
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1189700
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1189700
m&p-Xylene	1330-20-7	106	0.400	1.73	0.592	2.57		1	WG1189700
o-Xylene	95-47-6	106	0.200	0.867	0.465	2.01		1	WG1189700
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.4*				WG1189700
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.6*				WG1190353

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1189700
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1189700
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1189700
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1189700
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1189700
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1189700
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1189700
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1189700
Carbon disulfide	75-15-0	76.10	0.200	0.622	48.0	149		1	WG1189700
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1189700
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1189700
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1189700
Chloroform	67-66-3	119	0.200	0.973	0.977	4.75		1	WG1189700
Chloromethane	74-87-3	50.50	0.200	0.413	2.25	4.65		1	WG1189700
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1189700
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1189700
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1189700
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1189700
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1189700
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1189700
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1189700
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1189700
1,1-Dichloroethane	75-34-3	98	0.200	0.802	2.79	11.2		1	WG1189700
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	0.340	1.35		1	WG1189700
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	1.73	6.87		1	WG1189700
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1189700
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1189700
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1189700
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1189700
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1189700
Ethanol	64-17-5	46.10	0.630	1.19	1.01	1.90		1	WG1189700
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1189700
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1189700
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.824	4.63		1	WG1189700
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.439	2.17		1	WG1189700
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1189700
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1189700
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1189700
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1189700
n-Hexane	110-54-3	86.20	0.200	0.705	0.208	0.734		1	WG1189700
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1189700
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1189700
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1189700
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1189700
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1189700
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1189700
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1189700
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1189700
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1189700
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1189700
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1189700
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1189700
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.587	3.98		1	WG1189700
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.259	0.765		1	WG1189700
Toluene	108-88-3	92.10	0.200	0.753	0.317	1.19		1	WG1189700
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1189700

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	21.3	116		1	WG1189700
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1189700
Trichloroethylene	79-01-6	131	4.00	21.4	107	576		20	WG1190353
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.309	1.52		1	WG1189700
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1189700
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1189700
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1189700
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1189700
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1189700
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1189700
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1189700
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.5*				WG1189700
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.1*				WG1190353

Method Blank (MB)

(MB) R3356208-3 11/01/18 09:57

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	0.144	J	0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3356208-3 11/01/18 09:57

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*99.2*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356208-1 11/01/18 08:34 • (LCSD) R3356208-2 11/01/18 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.58	3.53	95.5	94.1	55.0-148			1.41	25
Propene	3.75	3.66	3.95	97.7	105	64.0-144			7.56	25
Dichlorodifluoromethane	3.75	3.83	3.82	102	102	64.0-139			0.230	25
1,2-Dichlorotetrafluoroethane	3.75	4.03	4.30	108	115	70.0-130			6.45	25
Chloromethane	3.75	3.78	3.98	101	106	70.0-130			5.02	25
Vinyl chloride	3.75	3.59	4.02	95.7	107	70.0-130			11.4	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356208-1 11/01/18 08:34 • (LCSD) R3356208-2 11/01/18 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,3-Butadiene	3.75	3.41	3.84	90.9	103	70.0-130			12.0	25
Bromomethane	3.75	3.76	4.05	100	108	70.0-130			7.32	25
Chloroethane	3.75	3.71	3.89	98.9	104	70.0-130			4.79	25
Trichlorofluoromethane	3.75	3.78	3.93	101	105	70.0-130			4.08	25
1,1,2-Trichlorotrifluoroethane	3.75	3.86	4.00	103	107	70.0-130			3.60	25
1,1-Dichloroethene	3.75	3.82	3.98	102	106	70.0-130			4.14	25
1,1-Dichloroethane	3.75	3.87	3.99	103	106	70.0-130			2.99	25
Acetone	3.75	3.32	3.45	88.6	92.1	70.0-130			3.86	25
2-Propanol	3.75	3.88	3.94	104	105	70.0-139			1.58	25
Carbon disulfide	3.75	3.87	4.09	103	109	70.0-130			5.57	25
Methylene Chloride	3.75	3.63	3.78	96.8	101	70.0-130			3.98	25
MTBE	3.75	3.83	3.95	102	105	70.0-130			3.25	25
trans-1,2-Dichloroethene	3.75	3.86	3.97	103	106	70.0-130			2.99	25
n-Hexane	3.75	3.87	3.96	103	106	70.0-130			2.42	25
Vinyl acetate	3.75	3.89	4.02	104	107	70.0-130			3.34	25
Methyl Ethyl Ketone	3.75	3.94	3.99	105	106	70.0-130			1.14	25
cis-1,2-Dichloroethene	3.75	3.91	4.02	104	107	70.0-130			2.86	25
Chloroform	3.75	3.86	3.97	103	106	70.0-130			2.81	25
Cyclohexane	3.75	3.87	3.98	103	106	70.0-130			2.62	25
1,1,1-Trichloroethane	3.75	3.82	3.93	102	105	70.0-130			2.77	25
Carbon tetrachloride	3.75	3.89	4.02	104	107	70.0-130			3.15	25
Benzene	3.75	3.84	3.91	102	104	70.0-130			1.92	25
1,2-Dichloroethane	3.75	3.88	3.94	103	105	70.0-130			1.52	25
Heptane	3.75	3.87	3.96	103	106	70.0-130			2.09	25
1,2-Dichloropropane	3.75	3.77	3.90	101	104	70.0-130			3.40	25
1,4-Dioxane	3.75	4.03	3.98	108	106	70.0-140			1.30	25
Bromodichloromethane	3.75	3.88	3.92	103	104	70.0-130			0.979	25
cis-1,3-Dichloropropene	3.75	3.87	3.91	103	104	70.0-130			0.883	25
4-Methyl-2-pentanone (MIBK)	3.75	3.93	3.89	105	104	70.0-139			1.14	25
Toluene	3.75	3.88	3.88	103	103	70.0-130			0.0664	25
trans-1,3-Dichloropropene	3.75	4.08	3.95	109	105	70.0-130			3.09	25
1,1,2-Trichloroethane	3.75	4.19	3.90	112	104	70.0-130			7.22	25
Tetrachloroethylene	3.75	4.19	3.89	112	104	70.0-130			7.53	25
Methyl Butyl Ketone	3.75	4.48	4.04	119	108	70.0-149			10.2	25
Dibromochloromethane	3.75	4.18	3.84	112	103	70.0-130			8.46	25
1,2-Dibromoethane	3.75	4.19	3.90	112	104	70.0-130			7.07	25
Chlorobenzene	3.75	3.96	3.80	106	101	70.0-130			4.33	25
Ethylbenzene	3.75	3.84	3.96	102	106	70.0-130			3.13	25
m&p-Xylene	7.50	7.70	7.93	103	106	70.0-130			2.88	25
o-Xylene	3.75	3.79	3.92	101	105	70.0-130			3.39	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356208-1 11/01/18 08:34 • (LCSD) R3356208-2 11/01/18 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Styrene	3.75	3.88	3.98	103	106	70.0-130			2.69	25
Bromoform	3.75	3.94	4.06	105	108	70.0-130			2.93	25
1,1,2,2-Tetrachloroethane	3.75	3.85	3.94	103	105	70.0-130			2.17	25
4-Ethyltoluene	3.75	3.86	3.95	103	105	70.0-130			2.40	25
1,3,5-Trimethylbenzene	3.75	3.92	3.94	105	105	70.0-130			0.586	25
1,2,4-Trimethylbenzene	3.75	3.90	3.95	104	105	70.0-130			1.38	25
1,3-Dichlorobenzene	3.75	3.86	3.92	103	104	70.0-130			1.32	25
1,4-Dichlorobenzene	3.75	3.96	3.95	105	105	70.0-130			0.241	25
Benzyl Chloride	3.75	4.09	4.12	109	110	70.0-152			0.653	25
1,2-Dichlorobenzene	3.75	3.81	3.88	102	103	70.0-130			1.71	25
1,2,4-Trichlorobenzene	3.75	4.38	4.41	117	118	70.0-160			0.680	25
Hexachloro-1,3-butadiene	3.75	4.04	4.11	108	110	70.0-151			1.62	25
Naphthalene	3.75	4.37	4.39	116	117	70.0-159			0.644	25
Allyl Chloride	3.75	4.11	4.00	110	107	70.0-130			2.83	25
2-Chlorotoluene	3.75	3.84	4.00	103	107	70.0-130			3.90	25
Methyl Methacrylate	3.75	3.94	3.89	105	104	70.0-130			1.14	25
Tetrahydrofuran	3.75	3.85	3.88	103	103	70.0-137			0.902	25
2,2,4-Trimethylpentane	3.75	3.87	4.03	103	107	70.0-130			3.89	25
Vinyl Bromide	3.75	3.85	4.04	103	108	70.0-130			4.80	25
Isopropylbenzene	3.75	3.85	3.95	103	105	70.0-130			2.40	25
(S) 1,4-Bromofluorobenzene				*99.4*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3356387-3 11/02/18 09:31

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1,1-Trichloroethane	U		0.0665	0.200
Trichloroethylene	U		0.0545	0.200
(S) 1,4-Bromofluorobenzene	*96.5*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356387-1 11/02/18 07:59 • (LCSD) R3356387-2 11/02/18 08:45

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1,1-Trichloroethane	3.75	4.12	4.20	110	112	70.0-130			1.92	25
Trichloroethylene	3.75	4.14	4.19	110	112	70.0-130			1.25	25
(S) 1,4-Bromofluorobenzene				*99.2*	*99.5*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

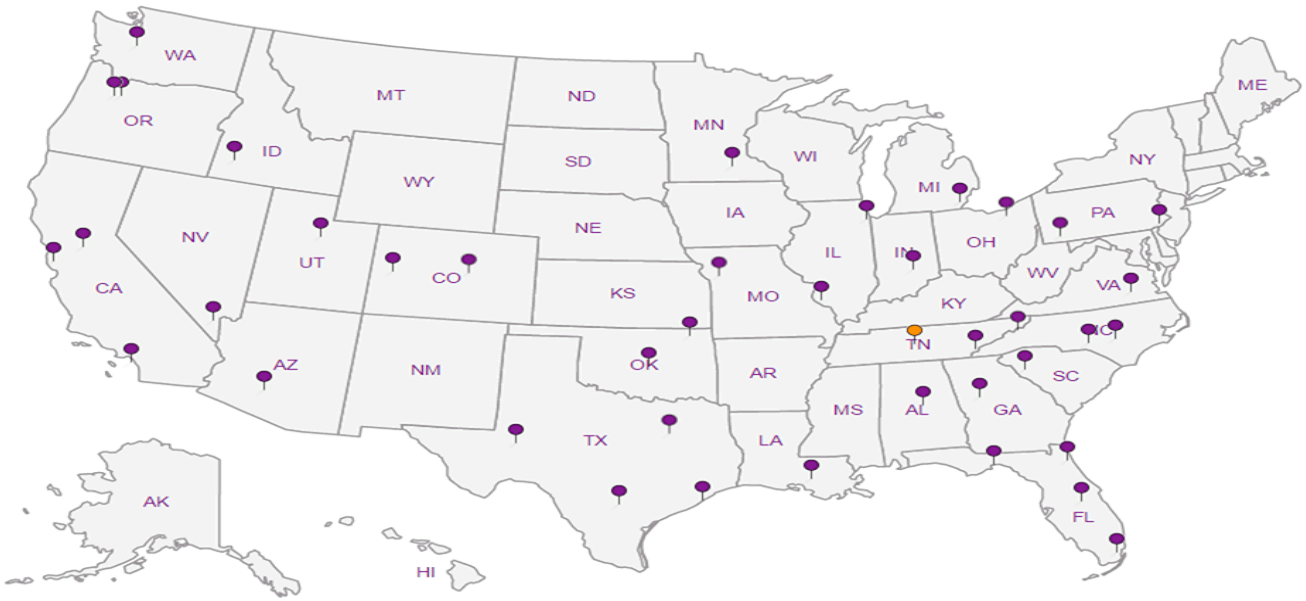
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



AIR SAMPLE
CHAIN OF CUSTODY RECORD

URS CORPORATION
77 GOODELL STREET
BUFFALO, NY 14203
PHONE: 716-856-5636

URS CONTACT: Ann Marie Kropovitch

PROJECT NUMBER: 60581049-200

SITE NAME: UTC-Carrier

SAMPLERS (PRINT/SIGNATURE): Tom Urban/Tom Urban

DELIVERY SERVICE: FedEx AIRBILL NO.: 4510 1663 9968

LAB: Pace Analytical

SHIPPING CONTAINER: 1 of 1

PAGE: 1 of 1

LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS: TO-15			REMARKS	SAMPLE TYPE CODE
						SAMPLE INFORMATION									
TR-20	10/31/14	0801	TR20-EP-4	AS	6	009195	6993	-29	-5		X			L1070077-01	N1
TR-20	10/31/14	0808	TR20-EP-2	AS	6	009146	5937	-28	-3.5		X			-02	N1

MATRIX CODES	AA - AMBIENT AIR; AI - INDOOR AIR; AQ - FIELD QC; AS - SUB-SLAB AIR; GS - SOIL GAS
SAMPLE TYPE CODES	N# - NORMAL ENVIRONMENTAL SAMPLE; FD# - FIELD DUPLICATE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
Tom Urban	10/31/14	1800			
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
				11/1/14	0845

SPECIAL INSTRUCTIONS
Acct # UTCAECOM
Template T142405

Distribution: Original accompanies shipment, copy to project file

M216

URSF-075K/1 OF 1/CofCR/GCM

ak

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: UTCAECOM	SDG#	1040077
Cooler Received/Opened On: 11/ 1 /18	Temperature:	Amb
Received By: Eric Struck		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Attachment B

Data Collection Sheets

SSDS Capacity Test

Date: 10/17/2018
Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Time	EP - 1	
	Vacuum (in. wc)	Flowrate (SCFM)
Static	---	---
1721	10.50	1.6
1724	20.40	4.1
1729	30.40	9.1
1731	40.60	12.2
1733	50.30	15.8
1736	60.20	16.6
1740	64.90	17.3

SSDS Capacity Test

Date: 10/16/2018
Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Time	EP - 2	
	Vacuum (in. wc)	Flowrate (SCFM)
Static	---	---
1415	9.80	4.4
1422	20.00	10.2
1425	30.50	12
1446	40.20	8.2
1449	50.30	11.4
1452	60.20	13.2
1454	70.30	15.5
1456	79.70	17.3

SSDS Capacity Test

Date: 10/18/2018
Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Time	EP - 3	
	Vacuum (in. wc)	Flowrate (SCFM)
Static	---	---
1449	11.50	1.5
1500	18.70	4.3
1504	29.00	8.4
1515	40.40	13.3
1518	50.60	17.5
1521	60.30	20
1523	70.80	21.2

SSDS Capacity Test

Date: 10/17/2018
Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Time	EP - 4	
	Vacuum (in. wc)	Flowrate (SCFM)
Static	---	---
1335	9.80	11.5
1340	20.60	23.8
1358	30.10	31.8
1404	33.90	34.1

Notes:
Flow measurements collected using a hot wire anenometer in a 4 inch diameter schedule 40 polyvinyl chloride pipe.
SSDS - sub-slab depressurization system
in. wc - inches of water column
scfm - standard cubic feet per minute

SSDS Constant-Rate Performance Test

Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Extraction Point ID: EP-1, EP-2, EP-3, and EP-4
Point Diameter (in): 4 inch
Depth to Bottom (ft): 2 feet

Time	From Extraction Point - EP-1				Distance from Extraction Point (ft)	76	150	101	74	170
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		EP-2	EP-3	EP-4	VMP-1	VMP-2
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/17/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00
720	30.10	13	0.0	72	730	0.06	0.00	0.01	0.23	0.00
750	30.00	13	0.2	71	750	0.06	0.00	0.01	0.24	0.00
820	28.80	12	0.5	72	820	0.06	0.00	0.01	0.23	0.00
10/18/2018										
835	59.70	18	1.0	73	845	0.09	0.00	0.04	0.40	0.00
900	59.70	18	1.2	73	900	0.10	0.00	0.02	0.40	0.00
920	59.80	18	1.4	72	920	0.10	0.00	0.03	0.40	0.00
940	59.60	18	1.4	72	940	0.10	0.00	0.03	0.40	0.00
	Average Flowrate	16	Collect emission exhaust sample at 0935.							

Time	From Extraction Point - EP-2				Distance from Extraction Point (ft)	76	74	70	105	120
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		EP-1	EP-3	EP-4	VMP-1	VMP-2
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/16/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00
1540	19.70	4	-	-	1540	0.00	-	0.00	0.00	0.00
1600	20.40	4	-	-	1600	0.00	-	0.00	0.00	0.00
1620	20.50	4	0.7	-	1620	0.00	0.00	0.00	0.00	0.00
1640	79.40	17	4.1	-	1640	0.00	0.00	0.00	0.00	0.00
1715	71.40	16	2.6	-	1725	0.00	0.10	0.00	0.00	0.00
10/17/2018										
800	20.10	4	1.1	71	810	0.00	-	0.04	0.00	0.00
820	19.50	3	1.2	72	820	0.01	-	0.04	0.00	0.00
900	20.80	4	0.9	73	900	0.01	-	0.05	0.00	0.00
935	39.60	9	3.5	79	945	0.01	-	0.07	0.00	0.00
1015	39.50	10	2.7	72	1015	0.01	0.02	0.07	0.00	0.00
1035	39.60	11	2.4	73	1035	0.01	0.02	0.07	0.00	0.00
1045	60.00	12	1.6	74	1100	0.01	0.04	0.09	0.00	0.00
1100	59.80	15	2.2	73	1120	0.01	0.04	0.09	0.00	0.00
1120	60.80	16	1.1	76	1140	0.01	0.05	0.09	0.00	0.00
1140	60.80	16	1.2	72	1200	0.02	0.05	0.10	0.00	0.00
1150	70.90	17	1.4	73	1230	0.02	0.05	0.10	0.00	0.00
1200	71.10	17	1.3	72	1300	0.02	0.05	0.10	0.00	0.00
1230	71.20	17	1.3	71	-	-	-	-	-	-
1300	71.20	17	1.0	71	-	-	-	-	-	-
	Average Flowrate	11	Collect emission exhaust sample at 1255.							
10/18/2018	Test with HS5000 Radon Style Fan									
1050	44.10	14	8.2	69	1050	0.01	0.03	0.13	0.00	0.00
1140	42.00	15	3.2	68	1140	0.01	0.03	0.13	0.00	0.00
	Average Flowrate	14	Collect emission exhaust sample at 1140.							

SSDS Constant-Rate Performance Test

Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: TR-20 (limited area)

Extraction Point ID: EP-1, EP-2, EP-3, and EP-4
Point Diameter (in): 4 inch
Depth to Bottom (ft): 2 feet

Time	From Extraction Point - EP-3				Distance from Extraction Point (ft)	150	74	101	172	69
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		EP-1	EP-2	EP-4	VMP-1	VMP-2
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/18/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00
1550	40.20	16	0.1	75	1600	0.00	0.09	0.03	0.00	0.08
1620	39.90	14	0.1	76	1620	0.00	0.09	0.02	0.00	0.09
1650	39.80	15	0.2	76	1650	0.00	0.09	0.03	0.00	0.09
1700	60.30	21	0.3	74	1710	0.00	0.12	0.04	0.00	0.13
1730	60.20	20	0.2	75	1730	0.00	0.13	0.04	0.00	0.13
1800	60.20	20	0.2	75	1800	0.00	0.13	0.04	0.00	0.13
	Average Flowrate	18	Collect emission exhaust sample at 1745.							
10/18/2018	Test with HS5000 Radon Style Fan									
1810	38.00	16	0.2	75	1810	0.00	0.09	0.02	0.00	0.10
1820	36.90	14	0.3	75	1820	0.00	0.09	0.03	0.00	0.10

Time	From Extraction Point - EP-4				Distance from Extraction Point (ft)	101	70	101	75	93
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		EP-1	EP-2	EP-3	VMP-1	VMP-2
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/17/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00
1404	33.90	34	0.0	-	1415	0.08	2.33	0.24	0.08	0.25
1540	36.90	35	0.1	74	1540	0.08	2.66	0.30	0.10	0.33
	Average Flowrate	34	Collect emission exhaust sample at 1600.							
10/18/2018	Test with HS5000 Radon Style Fan									
1200	10.80	11	0.5	72	1810	0.02	0.85	0.08	0.05	0.09
1220	10.80	11	0.4	72	1820	0.02	0.85	0.08	0.05	0.09

Notes:
Flow measurements collected using a hot wire anenometer in a 4 inch diameter schedule 40 polyvinyl chloride pipe.
PID - photoionization detector
SSDS - sub-slab depressurization system
in. wc - inches of water column
ft/min - feet per minute
scfm - standard cubic feet per minute
VOC - volatile organic compound]
ppmv - parts per million vapor
VMPs - vacuum monitoring ports
F - degrees fehrenheit

SSDS Constant-Rate Performance Test

Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: SWTP

Extraction Point ID: EP-1, EP-2, EP-3, EP-4, EP-5, EP-6, and EP-7
Point Diameter (in): 4 inch
Depth to Bottom (ft): 2 feet

Time	From Extraction Point - EP-1				Distance from Extraction Point (ft)	15	36	-	-	46	42	60	-	-	50	30	31	59	-	-
	Vacuum (in wc)	Flow Rate (SCFM)	VOC (ppm_v - PID measured)	Temp (F)		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
					Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/19/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1230	5.30	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1250	5.30	171	3.2	-	1250	0.06	0.00	-	-	-	0.23	0.00	-	-	-	-	-	-	-	-
1324	5.20	168	1.9	-	1329	0.07	0.01	-	-	-	0.23	0.01	-	-	-	-	-	-	-	-
	Average Flowrate	169	Collect emission exhaust sample at 1320.																	
10/23/2018	5.20	173	-	-	1430	0.05	0.00	-	-	0.00	0.21	0.00	-	-	0.00	0.00	0.00	0.00	-	-

Time	From Extraction Point - EP-2				Distance from Extraction Point (ft)	36	17	34	86	14	55	45	56	-	-	25	23	51	-	-
	Vacuum (in wc)	Flow Rate (SCFM)	VOC (ppm_v - PID measured)	Temp (F)		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
					Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/19/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1350	6.50	159	1.6	-	1350	0.00	0.26	0.11	0.00	0.45	0.00	0.08	-	-	-	-	-	-	-	-
1445	6.30	161	2.0	-	1445	0.00	0.25	0.11	0.00	0.45	0.00	0.08	-	-	-	-	-	-	-	-
	Average Flowrate	160	Collect emission exhaust sample at 1510.																	
10/23/2018	6.30	170	-	-	1515	0.00	0.22	0.07	0.00	0.41	0.00	0.06	0.00	-	-	0.06	0.07	0.03	-	-

Time	From Extraction Point - EP-3				Distance from Extraction Point (ft)	53	62	-	-	47	3	34	-	-	7	62	35	29	-	-
	Vacuum (in wc)	Flow Rate (SCFM)	VOC (ppm_v - PID measured)	Temp (F)		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
					Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/23/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300	18.60	162	20.7	-	1154	0.01	0.00	-	-	0.00	0.21	0.00	-	-	0.01	0.00	0.00	0.00	-	-
1410	17.80	-	-	-																
	Average Flowrate	162	Collect emission exhaust sample at 1500.																	

Time	From Extraction Point - EP-4				Distance from Extraction Point (ft)	-	-	-	-	-	-	19	30	81	-	-	-	25	54	-
	Vacuum (in wc)	Flow Rate (SCFM)	VOC (ppm_v - PID measured)	Temp (F)		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
					Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/24/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120	2.30	182	0.0	-	1120	-	-	-	-	-	-	0.00	0.06	0.00	-	-	-	0.00	0.00	-
1220	2.40	181	0.0	-	1220	-	-	-	-	-	-	0.00	0.06	0.00	-	-	-	0.00	0.00	-
	Average Flowrate	181	Collect emission exhaust sample at 1250.																	

SSDS Constant-Rate Performance Test

Job #: 60581049
Site ID: UTC Carrier
Site Address: 6304 Carrier Pkwy
City, State: East Syracuse, NY 13057
Building: SWTP

Extraction Point ID: EP-1, EP-2, EP-3, EP-4, EP-5, EP-6, and EP-7
Point Diameter (in): 4 inch
Depth to Bottom (ft): 2 feet

Time	From Extraction Point - EP-5				Distance from Extraction Point (ft)	-	96	50	26	80	-	90	40	25	-	-	-	-	31	-
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/22/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1154	5.26	176	0.0	-	1154	-	0.00	0.18	0.28	0.00	-	0.00	0.00	-	-	-	-	-	-	-
1254	5.30	172	8.2	-	1254	-	0.00	0.16	0.26	0.00	-	0.00	0.00	-	-	-	-	-	-	-
	Average Flowrate	174	Collect emission exhaust sample at 1330.																	
10/24/2018																				
850	5.50	174	0.0	-	850	-	0.00	0.18	0.29	0.00	-	0.00	0.00	0.22	-	-	-	-	0.01	-
10/24/2018	Test with HS5000 Radon Style Fan																			
945	0.80	56	-	-	945	-	-	0.02	0.03	-	-	-	0.00	0.02	-	-	-	-	0.00	-

Time	From Extraction Point - EP-6				Distance from Extraction Point (ft)	25	46	-	-	48	27	-	-	-	34	43	-	50	-	-
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/25/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330	7.50	177	0.0	-	1330	0.00	0.00	-	-	0.00	0.00	-	-	-	0.15	0.03	-	0.00	-	-
1430	7.30	174	0.0	-	1430	0.00	0.00	-	-	0.00	0.00	-	-	-	0.14	0.03	-	0.00	-	-
	Average Flowrate	175	Collect emission exhaust sample at 1425.																	

Time	From Extraction Point - EP-7				Distance from Extraction Point (ft)	-	-	-	-	-	-	-	13	-	-	-	-	-	14	24
	Vacuum	Flow Rate	VOC (ppm_v - PID measured)	Temp		VMP-1	VMP-2	VMP-3	VMP-4	VMP-5	VMP-6	VMP-7	VMP-8	VMP-9	VMP-10*	VMP-11	VMP-12	VMP-13	VMP-15	VMP-17
	(in wc)	(SCFM)		(F)	Time	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)	(in wc)
10/30/2018	---	---	---	---	Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
950	5.20	180	-	-	950	-	-	-	-	-	-	-	0.10	-	-	-	-	-	0.02	0.16
1057	5.30	178	-	-	1057	-	-	-	-	-	-	-	0.14	-	-	-	-	-	0.02	0.37
	Average Flowrate	179	Collect emission exhaust sample at 1250.																	

Notes:
* - VMP-10 located in West Pit and VMP-16 located in East Pit.
Water table in contact with East Pit slab. Unable to complete extraction point or VMP testing.
EP-7 was original VMP-14.
Flow measurements collected using a hot wire anenometer in a 4 inch diameter schedule 40 polyvinyl chloride pipe.
PID - photoionization detector
SSDS - sub-slab depressurization system
in. wc - inches of water column
ft/min - feet per minute
scfm - standard cubic feet per minute
VOC - volatile organic compound]
ppmv - parts per million vapor
VMPs - vacuum monitoring ports
F - degrees fehrenheit

Attachment C

Analytical Reports

eurofins | Air Toxics

11/9/2018
Mr. Peter Hollatz
AECOM Environment
5015 Campuswood Drive
Suite 104
East Syracuse NY 13057

Project Name: UTC Carrier:SWTP Pilot Test
Project #: 60581049-200
Workorder #: 1811054

Dear Mr. Peter Hollatz

The following report includes the data for the above referenced project for sample(s) received on 11/2/2018 at Air Toxics Ltd.

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

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

Regards,



Rachel Selenis

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1811054

Work Order Summary

CLIENT:	Mr. Peter Hollatz AECOM Environment 5015 Campuswood Drive Suite 104 East Syracuse, NY 13057	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	315.432.0506	**P.O. #**	60581049-200
FAX:		**PROJECT #**	60581049-200 UTC Carrier:SWTP Pilot Test
DATE RECEIVED:	11/02/2018	**CONTACT:**	Rachel Selenis
DATE COMPLETED:	11/09/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	EXH-EP1-101918	TO-15	6.0 "Hg	15 psi
02A	EXH-EP2-101918	TO-15	19.0 "Hg	15 psi
03A	EXH-EP3-102318	TO-15	4.0 "Hg	15 psi
04A	EXH-EP5-102218	TO-15	4.0 "Hg	15 psi
05A	EXH-EP4-102418	TO-15	2.5 "Hg	15 psi
06A	EXH-EP6-102518	TO-15	3.0 "Hg	15 psi
07A	EXH-EP7-103018	TO-15	2.5 "Hg	15 psi
08A	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/09/18

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP - E8 , LA NELAP - 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP CA009332018-10, VA NELAP - 9505, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005-011, Effective date: 10/18/2018, Expiration date: 10/17/2019.
Eurofins Air Toxics LLC. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
EPA Method TO-15
AECOM Environment
Workorder# 1811054

Seven 1 Liter Summa Canister samples were received on November 02, 2018. The laboratory performed analysis via 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.

Receiving Notes

The Chain of Custody (COC) information for sample EXH-EP7-103018 did not match the information on the canister with regard to canister barcode. The sample labeled 1L3021 on the COC is labeled as 1L2411 on the canister. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Sample EXH-EP2-101918 was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Ten 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.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: EXH-EP1-101918

Lab ID#: 1811054-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.3	2.4	3.2	6.2
Freon 11	1.3	1.5	7.1	8.4
Acetone	13	32	30	75
2-Propanol	5.0	6.3	12	15
cis-1,2-Dichloroethene	1.3	23	5.0	90
Trichloroethene	1.3	200	6.8	1000

Client Sample ID: EXH-EP2-101918

Lab ID#: 1811054-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	2.8	5.2	11	21
cis-1,2-Dichloroethene	2.8	10	11	40
Trichloroethene	2.8	69	15	370

Client Sample ID: EXH-EP3-102318

Lab ID#: 1811054-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.7	48	8.8	91
Acetone	12	15	28	36
cis-1,2-Dichloroethene	1.2	11	4.6	42
Tetrahydrofuran	1.2	1.4	3.4	4.1
Trichloroethene	1.2	44	6.3	240
Toluene	1.2	3.3	4.4	12
m,p-Xylene	1.2	2.2	5.0	9.8

Client Sample ID: EXH-EP5-102218

Lab ID#: 1811054-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	1.5	6.5	8.4

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

Client Sample ID: EXH-EP5-102218

Lab ID#: 1811054-04A

Ethanol	4.7	270	8.8	500
Acetone	12	13	28	31
Hexane	1.2	1.8	4.1	6.5
1,1-Dichloroethane	1.2	2.4	4.7	9.7
cis-1,2-Dichloroethene	1.2	26	4.6	100
Benzene	1.2	1.2	3.7	3.9
Heptane	1.2	4.9	4.8	20
Trichloroethene	1.2	45	6.3	240
Toluene	1.2	26	4.4	96
Ethyl Benzene	1.2	4.4	5.0	19
m,p-Xylene	1.2	17	5.0	74
o-Xylene	1.2	6.4	5.0	28
Styrene	1.2	2.1	5.0	9.1
4-Ethyltoluene	1.2	4.5	5.7	22
1,3,5-Trimethylbenzene	1.2	1.3	5.7	6.5
1,2,4-Trimethylbenzene	1.2	4.8	5.7	24
1,3-Dichlorobenzene	1.2	1.7	7.0	10

Client Sample ID: EXH-EP4-102418

Lab ID#: 1811054-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	1.1	6.3	4.4	25
cis-1,2-Dichloroethene	1.1	8.8	4.4	35
1,1,1-Trichloroethane	1.1	2.8	6.0	16
Cyclohexane	1.1	7.4	3.8	25
Trichloroethene	1.1	56	5.9	300

Client Sample ID: EXH-EP6-102518

Lab ID#: 1811054-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.1	1.6	6.3	9.0
Hexane	1.1	1.9	3.9	6.6

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

Client Sample ID: EXH-EP6-102518

Lab ID#: 1811054-06A

1,1-Dichloroethane	1.1	1.4	4.5	5.8
cis-1,2-Dichloroethene	1.1	7.0	4.4	28
Trichloroethene	1.1	140	6.0	760

Client Sample ID: EXH-EP7-103018

Lab ID#: 1811054-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	1.1	4.4	4.4	18
cis-1,2-Dichloroethene	1.1	24	4.4	94
1,1,1-Trichloroethane	1.1	2.5	6.0	14
Trichloroethene	1.1	100	5.9	550

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Client Sample ID: EXH-EP1-101918

Lab ID#: 1811054-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110520**	**Date of Collection:**	**10/19/18 1:20:00 PM**
Dil. Factor:	**2.52**	**Date of Analysis:**	**11/6/18 01:00 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	Not Detected	6.2	Not Detected
Freon 114	1.3	Not Detected	8.8	Not Detected
Chloromethane	13	Not Detected	26	Not Detected
Vinyl Chloride	1.3	2.4	3.2	6.2
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	49	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	1.3	1.5	7.1	8.4
Ethanol	5.0	Not Detected	9.5	Not Detected
Freon 113	1.3	Not Detected	9.6	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Acetone	13	32	30	75
2-Propanol	5.0	6.3	12	15
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	5.0	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Hexane	1.3	Not Detected	4.4	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	Not Detected	15	Not Detected
cis-1,2-Dichloroethene	1.3	23	5.0	90
Tetrahydrofuran	1.3	Not Detected	3.7	Not Detected
Chloroform	1.3	Not Detected	6.2	Not Detected
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Cyclohexane	1.3	Not Detected	4.3	Not Detected
Carbon Tetrachloride	1.3	Not Detected	7.9	Not Detected
2,2,4-Trimethylpentane	1.3	Not Detected	5.9	Not Detected
Benzene	1.3	Not Detected	4.0	Not Detected
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Heptane	1.3	Not Detected	5.2	Not Detected
Trichloroethene	1.3	200	6.8	1000
1,2-Dichloropropane	1.3	Not Detected	5.8	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.4	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.7	Not Detected
4-Methyl-2-pentanone	1.3	Not Detected	5.2	Not Detected
Toluene	1.3	Not Detected	4.7	Not Detected
trans-1,3-Dichloropropene	1.3	Not Detected	5.7	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	Not Detected	8.5	Not Detected
2-Hexanone	5.0	Not Detected	21	Not Detected

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Client Sample ID: EXH-EP1-101918

Lab ID#: 1811054-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110520**	**Date of Collection:**	**10/19/18 1:20:00 PM**
Dil. Factor:	**2.52**	**Date of Analysis:**	**11/6/18 01:00 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.7	Not Detected
Chlorobenzene	1.3	Not Detected	5.8	Not Detected
Ethyl Benzene	1.3	Not Detected	5.5	Not Detected
m,p-Xylene	1.3	Not Detected	5.5	Not Detected
o-Xylene	1.3	Not Detected	5.5	Not Detected
Styrene	1.3	Not Detected	5.4	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	Not Detected	6.2	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.6	Not Detected
Propylbenzene	1.3	Not Detected	6.2	Not Detected
4-Ethyltoluene	1.3	Not Detected	6.2	Not Detected
1,3,5-Trimethylbenzene	1.3	Not Detected	6.2	Not Detected
1,2,4-Trimethylbenzene	1.3	Not Detected	6.2	Not Detected
1,3-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
1,4-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
alpha-Chlorotoluene	1.3	Not Detected	6.5	Not Detected
1,2-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
1,2,4-Trichlorobenzene	5.0	Not Detected	37	Not Detected
Hexachlorobutadiene	5.0	Not Detected	54	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: EXH-EP2-101918

Lab ID#: 1811054-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110521**	**Date of Collection:**	**10/19/18 3:10:00 PM**
Dil. Factor:	**5.51**	**Date of Analysis:**	**11/6/18 01:26 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.8	Not Detected	14	Not Detected
Freon 114	2.8	Not Detected	19	Not Detected
Chloromethane	28	Not Detected	57	Not Detected
Vinyl Chloride	2.8	Not Detected	7.0	Not Detected
1,3-Butadiene	2.8	Not Detected	6.1	Not Detected
Bromomethane	28	Not Detected	110	Not Detected
Chloroethane	11	Not Detected	29	Not Detected
Freon 11	2.8	Not Detected	15	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	2.8	Not Detected	21	Not Detected
1,1-Dichloroethene	2.8	Not Detected	11	Not Detected
Acetone	28	Not Detected	65	Not Detected
2-Propanol	11	Not Detected	27	Not Detected
Carbon Disulfide	11	Not Detected	34	Not Detected
3-Chloropropene	11	Not Detected	34	Not Detected
Methylene Chloride	28	Not Detected	96	Not Detected
Methyl tert-butyl ether	11	Not Detected	40	Not Detected
trans-1,2-Dichloroethene	2.8	Not Detected	11	Not Detected
Hexane	2.8	Not Detected	9.7	Not Detected
1,1-Dichloroethane	2.8	5.2	11	21
2-Butanone (Methyl Ethyl Ketone)	11	Not Detected	32	Not Detected
cis-1,2-Dichloroethene	2.8	10	11	40
Tetrahydrofuran	2.8	Not Detected	8.1	Not Detected
Chloroform	2.8	Not Detected	13	Not Detected
1,1,1-Trichloroethane	2.8	Not Detected	15	Not Detected
Cyclohexane	2.8	Not Detected	9.5	Not Detected
Carbon Tetrachloride	2.8	Not Detected	17	Not Detected
2,2,4-Trimethylpentane	2.8	Not Detected	13	Not Detected
Benzene	2.8	Not Detected	8.8	Not Detected
1,2-Dichloroethane	2.8	Not Detected	11	Not Detected
Heptane	2.8	Not Detected	11	Not Detected
Trichloroethene	2.8	69	15	370
1,2-Dichloropropane	2.8	Not Detected	13	Not Detected
1,4-Dioxane	11	Not Detected	40	Not Detected
Bromodichloromethane	2.8	Not Detected	18	Not Detected
cis-1,3-Dichloropropene	2.8	Not Detected	12	Not Detected
4-Methyl-2-pentanone	2.8	Not Detected	11	Not Detected
Toluene	2.8	Not Detected	10	Not Detected
trans-1,3-Dichloropropene	2.8	Not Detected	12	Not Detected
1,1,2-Trichloroethane	2.8	Not Detected	15	Not Detected
Tetrachloroethene	2.8	Not Detected	19	Not Detected
2-Hexanone	11	Not Detected	45	Not Detected

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Client Sample ID: EXH-EP2-101918

Lab ID#: 1811054-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110521**	**Date of Collection:**	**10/19/18 3:10:00 PM**
Dil. Factor:	**5.51**	**Date of Analysis:**	**11/6/18 01:26 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.8	Not Detected	23	Not Detected
1,2-Dibromoethane (EDB)	2.8	Not Detected	21	Not Detected
Chlorobenzene	2.8	Not Detected	13	Not Detected
Ethyl Benzene	2.8	Not Detected	12	Not Detected
m,p-Xylene	2.8	Not Detected	12	Not Detected
o-Xylene	2.8	Not Detected	12	Not Detected
Styrene	2.8	Not Detected	12	Not Detected
Bromoform	2.8	Not Detected	28	Not Detected
Cumene	2.8	Not Detected	14	Not Detected
1,1,2,2-Tetrachloroethane	2.8	Not Detected	19	Not Detected
Propylbenzene	2.8	Not Detected	14	Not Detected
4-Ethyltoluene	2.8	Not Detected	14	Not Detected
1,3,5-Trimethylbenzene	2.8	Not Detected	14	Not Detected
1,2,4-Trimethylbenzene	2.8	Not Detected	14	Not Detected
1,3-Dichlorobenzene	2.8	Not Detected	16	Not Detected
1,4-Dichlorobenzene	2.8	Not Detected	16	Not Detected
alpha-Chlorotoluene	2.8	Not Detected	14	Not Detected
1,2-Dichlorobenzene	2.8	Not Detected	16	Not Detected
1,2,4-Trichlorobenzene	11	Not Detected	82	Not Detected
Hexachlorobutadiene	11	Not Detected	120	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: EXH-EP3-102318

Lab ID#: 1811054-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110522**	**Date of Collection:**	**10/23/18 3:00:00 PM**
Dil. Factor:	**2.33**	**Date of Analysis:**	**11/6/18 01:53 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.8	Not Detected
Freon 114	1.2	Not Detected	8.1	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	4.7	48	8.8	91
Freon 113	1.2	Not Detected	8.9	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	15	28	36
2-Propanol	4.7	Not Detected	11	Not Detected
Carbon Disulfide	4.7	Not Detected	14	Not Detected
3-Chloropropene	4.7	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	Not Detected	4.1	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	11	4.6	42
Tetrahydrofuran	1.2	1.4	3.4	4.1
Chloroform	1.2	Not Detected	5.7	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	Not Detected	3.7	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	44	6.3	240
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.8	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	3.3	4.4	12
trans-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected
2-Hexanone	4.7	Not Detected	19	Not Detected

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Client Sample ID: EXH-EP3-102318

Lab ID#: 1811054-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110522**	**Date of Collection:**	**10/23/18 3:00:00 PM**
Dil. Factor:	**2.33**	**Date of Analysis:**	**11/6/18 01:53 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.9	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.0	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	2.2	5.0	9.8
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.0	Not Detected
Propylbenzene	1.2	Not Detected	5.7	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.7	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.7	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.7	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	34	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: EXH-EP5-102218

Lab ID#: 1811054-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110523**	**Date of Collection:**	**10/22/18 1:30:00 PM**
Dil. Factor:	**2.33**	**Date of Analysis:**	**11/6/18 02:19 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.8	Not Detected
Freon 114	1.2	Not Detected	8.1	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	1.5	6.5	8.4
Ethanol	4.7	270	8.8	500
Freon 113	1.2	Not Detected	8.9	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	13	28	31
2-Propanol	4.7	Not Detected	11	Not Detected
Carbon Disulfide	4.7	Not Detected	14	Not Detected
3-Chloropropene	4.7	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	1.8	4.1	6.5
1,1-Dichloroethane	1.2	2.4	4.7	9.7
2-Butanone (Methyl Ethyl Ketone)	4.7	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	26	4.6	100
Tetrahydrofuran	1.2	Not Detected	3.4	Not Detected
Chloroform	1.2	Not Detected	5.7	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	1.2	3.7	3.9
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	4.9	4.8	20
Trichloroethene	1.2	45	6.3	240
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.8	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	26	4.4	96
trans-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected
2-Hexanone	4.7	Not Detected	19	Not Detected

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Client Sample ID: EXH-EP5-102218

Lab ID#: 1811054-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110523**	**Date of Collection:**	**10/22/18 1:30:00 PM**
Dil. Factor:	**2.33**	**Date of Analysis:**	**11/6/18 02:19 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.9	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.0	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	4.4	5.0	19
m,p-Xylene	1.2	17	5.0	74
o-Xylene	1.2	6.4	5.0	28
Styrene	1.2	2.1	5.0	9.1
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.0	Not Detected
Propylbenzene	1.2	Not Detected	5.7	Not Detected
4-Ethyltoluene	1.2	4.5	5.7	22
1,3,5-Trimethylbenzene	1.2	1.3	5.7	6.5
1,2,4-Trimethylbenzene	1.2	4.8	5.7	24
1,3-Dichlorobenzene	1.2	1.7	7.0	10
1,4-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	34	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: EXH-EP4-102418

Lab ID#: 1811054-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110524**	**Date of Collection:**	**10/24/18 12:50:00 P**
Dil. Factor:	**2.20**	**Date of Analysis:**	**11/6/18 02:46 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.4	Not Detected
Freon 114	1.1	Not Detected	7.7	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	4.4	Not Detected	8.3	Not Detected
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected	26	Not Detected
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	Not Detected	3.9	Not Detected
1,1-Dichloroethane	1.1	6.3	4.4	25
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	8.8	4.4	35
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	2.8	6.0	16
Cyclohexane	1.1	7.4	3.8	25
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	56	5.9	300
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	1.1	Not Detected	4.1	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
2-Hexanone	4.4	Not Detected	18	Not Detected

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Client Sample ID: EXH-EP4-102418

Lab ID#: 1811054-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110524**	**Date of Collection: 10/24/18 12:50:00 P**	
Dil. Factor:	**2.20**	**Date of Analysis: 11/6/18 02:46 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	Not Detected	4.8	Not Detected
o-Xylene	1.1	Not Detected	4.8	Not Detected
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: EXH-EP6-102518

Lab ID#: 1811054-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110526**	**Date of Collection:**	**10/25/18 2:25:00 PM**
Dil. Factor:	**2.24**	**Date of Analysis:**	**11/6/18 03:39 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	1.6	6.3	9.0
Ethanol	4.5	Not Detected	8.4	Not Detected
Freon 113	1.1	Not Detected	8.6	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.5	Not Detected	11	Not Detected
Carbon Disulfide	4.5	Not Detected	14	Not Detected
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	4.5	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	1.9	3.9	6.6
1,1-Dichloroethane	1.1	1.4	4.5	5.8
2-Butanone (Methyl Ethyl Ketone)	4.5	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	7.0	4.4	28
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.5	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.2	Not Detected
Benzene	1.1	Not Detected	3.6	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	Not Detected	4.6	Not Detected
Trichloroethene	1.1	140	6.0	760
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	1.1	Not Detected	4.2	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected
2-Hexanone	4.5	Not Detected	18	Not Detected

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Client Sample ID: EXH-EP6-102518

Lab ID#: 1811054-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110526**	**Date of Collection:**	**10/25/18 2:25:00 PM**
Dil. Factor:	**2.24**	**Date of Analysis:**	**11/6/18 03:39 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.5	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.6	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	1.1	Not Detected	4.9	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.5	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.7	Not Detected
Propylbenzene	1.1	Not Detected	5.5	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.5	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	33	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	117	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: EXH-EP7-103018

Lab ID#: 1811054-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110525**	**Date of Collection:**	**10/30/18 12:50:00 P**
Dil. Factor:	**2.20**	**Date of Analysis:**	**11/6/18 03:12 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.4	Not Detected
Freon 114	1.1	Not Detected	7.7	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	4.4	Not Detected	8.3	Not Detected
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected	26	Not Detected
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	Not Detected	3.9	Not Detected
1,1-Dichloroethane	1.1	4.4	4.4	18
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	24	4.4	94
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	2.5	6.0	14
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	100	5.9	550
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	1.1	Not Detected	4.1	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
2-Hexanone	4.4	Not Detected	18	Not Detected

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Client Sample ID: EXH-EP7-103018

Lab ID#: 1811054-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110525**	**Date of Collection:**	**10/30/18 12:50:00 P**
Dil. Factor:	**2.20**	**Date of Analysis:**	**11/6/18 03:12 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	Not Detected	4.8	Not Detected
o-Xylene	1.1	Not Detected	4.8	Not Detected
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1811054-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 01:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1811054-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 01:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: CCV

Lab ID#: 1811054-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110502**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 12:02 PM**

Compound	%Recovery
Freon 12	102
Freon 114	101
Chloromethane	97
Vinyl Chloride	103
1,3-Butadiene	102
Bromomethane	103
Chloroethane	107
Freon 11	100
Ethanol	100
Freon 113	103
1,1-Dichloroethene	104
Acetone	106
2-Propanol	97
Carbon Disulfide	101
3-Chloropropene	106
Methylene Chloride	97
Methyl tert-butyl ether	101
trans-1,2-Dichloroethene	107
Hexane	102
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	103
cis-1,2-Dichloroethene	108
Tetrahydrofuran	104
Chloroform	106
1,1,1-Trichloroethane	99
Cyclohexane	105
Carbon Tetrachloride	101
2,2,4-Trimethylpentane	104
Benzene	104
1,2-Dichloroethane	106
Heptane	108
Trichloroethene	104
1,2-Dichloropropane	103
1,4-Dioxane	101
Bromodichloromethane	107
cis-1,3-Dichloropropene	109
4-Methyl-2-pentanone	98
Toluene	101
trans-1,3-Dichloropropene	112
1,1,2-Trichloroethane	106
Tetrachloroethene	107
2-Hexanone	97

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Client Sample ID: CCV

Lab ID#: 1811054-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 12:02 PM**	

Compound	%Recovery
Dibromochloromethane	111
1,2-Dibromoethane (EDB)	108
Chlorobenzene	104
Ethyl Benzene	105
m,p-Xylene	108
o-Xylene	111
Styrene	99
Bromoform	118
Cumene	106
1,1,2,2-Tetrachloroethane	105
Propylbenzene	104
4-Ethyltoluene	105
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	107
1,3-Dichlorobenzene	105
1,4-Dichlorobenzene	106
alpha-Chlorotoluene	112
1,2-Dichlorobenzene	105
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: LCS

Lab ID#: 1811054-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 12:41 PM**	

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	101	70-130
Chloromethane	96	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	98	70-130
Bromomethane	102	70-130
Chloroethane	105	70-130
Freon 11	100	70-130
Ethanol	94	70-130
Freon 113	100	70-130
1,1-Dichloroethene	104	70-130
Acetone	103	70-130
2-Propanol	98	70-130
Carbon Disulfide	102	70-130
3-Chloropropene	110	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	102	70-130
trans-1,2-Dichloroethene	116	70-130
Hexane	103	70-130
1,1-Dichloroethane	105	70-130
2-Butanone (Methyl Ethyl Ketone)	108	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	104	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	101	70-130
Cyclohexane	106	70-130
Carbon Tetrachloride	104	70-130
2,2,4-Trimethylpentane	104	70-130
Benzene	101	70-130
1,2-Dichloroethane	103	70-130
Heptane	108	70-130
Trichloroethene	105	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	107	70-130
cis-1,3-Dichloropropene	113	70-130
4-Methyl-2-pentanone	96	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	108	70-130
Tetrachloroethene	107	70-130
2-Hexanone	101	70-130

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Client Sample ID: LCS

Lab ID#: 1811054-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 12:41 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	112	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	108	70-130
o-Xylene	109	70-130
Styrene	103	70-130
Bromoform	120	70-130
Cumene	104	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	103	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	106	70-130
1,3-Dichlorobenzene	104	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	103	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 1811054-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 01:05 PM**	

Compound	%Recovery	Method Limits
Freon 12	103	70-130
Freon 114	103	70-130
Chloromethane	96	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	100	70-130
Bromomethane	105	70-130
Chloroethane	111	70-130
Freon 11	100	70-130
Ethanol	94	70-130
Freon 113	100	70-130
1,1-Dichloroethene	105	70-130
Acetone	105	70-130
2-Propanol	101	70-130
Carbon Disulfide	104	70-130
3-Chloropropene	108	70-130
Methylene Chloride	94	70-130
Methyl tert-butyl ether	103	70-130
trans-1,2-Dichloroethene	118	70-130
Hexane	103	70-130
1,1-Dichloroethane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	109	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	107	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	106	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	105	70-130
Benzene	103	70-130
1,2-Dichloroethane	105	70-130
Heptane	110	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	108	70-130
cis-1,3-Dichloropropene	116	70-130
4-Methyl-2-pentanone	101	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	108	70-130
Tetrachloroethene	107	70-130
2-Hexanone	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1811054-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a110504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/5/18 01:05 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	110	70-130
1,2-Dibromoethane (EDB)	107	70-130
Chlorobenzene	103	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	107	70-130
o-Xylene	111	70-130
Styrene	105	70-130
Bromoform	121	70-130
Cumene	105	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	104	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	112	70-130
1,2,4-Trimethylbenzene	108	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	118	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	108	70-130
Hexachlorobutadiene	109	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	104	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 Peter Hollatz

Collected by: (Print and Sign) Ron Russo Jr

Company AECOM Email PETER.HOLLATZ@AECOM.COM

Address 1600 Perimeter Park Dr. City Morrisville State NC Zip 27560

Phone 919-461-1194 Fax

Project Info:

P.O. #

Project # 60581049.200

Project Name UTC Carrier: SWTP Pilot Test

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	EXH-EP1-101918	IL3102	10/19/18	13:20	TO-15	29	6		
02A	EXH-EP2-101918	IL1526	10/19/18	15:10	TO-15	29	6		
03A	EXH-EP3-102318	IL2899	10/23/18	15:00	TO-15	29	5		
04A	EXH-EP5-102218	IL3863	10/22/18	13:30	TO-15	29	6		
05A	EXH-EP4-102418	IL3021	10/24/18	12:50	TO-15	30	4.5		
06A	EXH-EP6-102518	IL1755/S0089	10/25/18	14:25	TO-15	29	4		
07A	EXH-EP7-103018	IL3021	10/30/18	12:50	TO-15	30	4.5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Russo	10/31/18 15:00	[illegible] FAT	11/2/18 0940
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No None	310811054

Form 1293 rev.11

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11/1/2018
Mr. Peter Hollatz
AECOM Environment
5015 Campuswood Drive
Suite 104
East Syracuse NY 13057

Project Name: UTCCarrier -TR20
Project #: 60581049-200
Workorder #: 1810541

Dear Mr. Peter Hollatz

The following report includes the data for the above referenced project for sample(s) received on 10/24/2018 at Air Toxics Ltd.

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

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

Regards,



Rachel Selenis

Project Manager

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WORK ORDER #: 1810541

Work Order Summary

CLIENT:	Mr. Peter Hollatz AECOM Environment 5015 Campuswood Drive Suite 104 East Syracuse, NY 13057	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	315.432.0506	**P.O. #**	60581049-200
FAX:		**PROJECT #**	60581049-200 UTCCarrier -TR20
DATE RECEIVED:	10/24/2018	**CONTACT:**	Rachel Selenis
DATE COMPLETED:	11/01/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	EXH-EP2-101718	TO-15	5.5 "Hg	14.8 psi
02A	EXH-EP4-101718	TO-15	5.5 "Hg	14.7 psi
03A	EXH-EP1-101818	TO-15	4.3 "Hg	15 psi
04A	EXH-EP2-101818	TO-15	4.3 "Hg	15.1 psi
05A	EXH-EP3-101818	TO-15	2.8 "Hg	15 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/01/18

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

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
AECOM Environment
Workorder# 1810541

Five 1 Liter Summa Canister samples were received on October 24, 2018. The laboratory performed analysis via 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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The Summa canister for samples EXH-EP1-101818 and EXH-EP3-101818 were initially pressurized to 15 psi upon receipt at the laboratory. Subsequently, the samples were found to be at ambient pressure at the time of analysis. This resulted in re-pressurization to 15 psi as well as elevated reporting limits. Evaluation of the sample results shows no impact on the data. The client was notified and analysis proceeded.

Dilution was performed on sample EXH-EP2-101718 due to the presence of high level target species.

Definition of Data Qualifying Flags

Ten 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.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: EXH-EP2-101718

Lab ID#: 1810541-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.6	1.7	9.2	9.7
Ethanol	6.6	9.1	12	17
1,1-Dichloroethane	1.6	4.5	6.6	18
cis-1,2-Dichloroethene	1.6	3.1	6.5	12
1,1,1-Trichloroethane	1.6	90	8.9	490
Cyclohexane	1.6	5.6	5.6	19
Benzene	1.6	1.9	5.2	6.1
Trichloroethene	1.6	390	8.8	2100
Toluene	1.6	9.3	6.2	35
m,p-Xylene	1.6	7.0	7.1	30
o-Xylene	1.6	3.3	7.1	14
4-Ethyltoluene	1.6	2.0	8.1	9.6
1,2,4-Trimethylbenzene	1.6	2.0	8.1	9.6

Client Sample ID: EXH-EP4-101718

Lab ID#: 1810541-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	12	25	29	59
1,1-Dichloroethane	1.2	2.0	5.0	8.1
1,1,1-Trichloroethane	1.2	31	6.7	170
Cyclohexane	1.2	4.8	4.2	16
Benzene	1.2	1.8	3.9	5.8
Trichloroethene	1.2	130	6.6	680
Toluene	1.2	5.7	4.6	21
m,p-Xylene	1.2	2.8	5.3	12
o-Xylene	1.2	1.3	5.3	5.5

Client Sample ID: EXH-EP1-101818

Lab ID#: 1810541-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	2.7	3.3	15	18

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

Client Sample ID: EXH-EP1-101818

Lab ID#: 1810541-03A

Trichloroethene	2.7	12	15	62

Client Sample ID: EXH-EP2-101818

Lab ID#: 1810541-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	12	13	28	32
1,1-Dichloroethane	1.2	3.0	4.8	12
2-Butanone (Methyl Ethyl Ketone)	4.7	23	14	67
cis-1,2-Dichloroethene	1.2	1.8	4.7	7.2
Tetrahydrofuran	1.2	31	3.5	92
1,1,1-Trichloroethane	1.2	71	6.5	390
Cyclohexane	1.2	7.5	4.1	26
Trichloroethene	1.2	300	6.4	1600
Styrene	1.2	12	5.0	52

Client Sample ID: EXH-EP3-101818

Lab ID#: 1810541-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	22	24	52	58
1,1,1-Trichloroethane	2.2	38	12	200
Cyclohexane	2.2	26	7.6	88
Trichloroethene	2.2	6.4	12	34
Toluene	2.2	3.9	8.3	15
m,p-Xylene	2.2	2.4	9.5	10

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Client Sample ID: EXH-EP2-101718

Lab ID#: 1810541-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102622a**	**Date of Collection:**	**10/17/18 12:55:00 P**
Dil. Factor:	**3.28**	**Date of Analysis:**	**10/26/18 09:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.6	Not Detected	8.1	Not Detected
Freon 114	1.6	Not Detected	11	Not Detected
Chloromethane	16	Not Detected	34	Not Detected
Vinyl Chloride	1.6	Not Detected	4.2	Not Detected
1,3-Butadiene	1.6	Not Detected	3.6	Not Detected
Bromomethane	16	Not Detected	64	Not Detected
Chloroethane	6.6	Not Detected	17	Not Detected
Freon 11	1.6	1.7	9.2	9.7
Ethanol	6.6	9.1	12	17
Freon 113	1.6	Not Detected	12	Not Detected
1,1-Dichloroethene	1.6	Not Detected	6.5	Not Detected
Acetone	16	Not Detected	39	Not Detected
2-Propanol	6.6	Not Detected	16	Not Detected
Carbon Disulfide	6.6	Not Detected	20	Not Detected
3-Chloropropene	6.6	Not Detected	20	Not Detected
Methylene Chloride	16	Not Detected	57	Not Detected
Methyl tert-butyl ether	6.6	Not Detected	24	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.5	Not Detected
Hexane	1.6	Not Detected	5.8	Not Detected
1,1-Dichloroethane	1.6	4.5	6.6	18
2-Butanone (Methyl Ethyl Ketone)	6.6	Not Detected	19	Not Detected
cis-1,2-Dichloroethene	1.6	3.1	6.5	12
Tetrahydrofuran	1.6	Not Detected	4.8	Not Detected
Chloroform	1.6	Not Detected	8.0	Not Detected
1,1,1-Trichloroethane	1.6	90	8.9	490
Cyclohexane	1.6	5.6	5.6	19
Carbon Tetrachloride	1.6	Not Detected	10	Not Detected
2,2,4-Trimethylpentane	1.6	Not Detected	7.7	Not Detected
Benzene	1.6	1.9	5.2	6.1
1,2-Dichloroethane	1.6	Not Detected	6.6	Not Detected
Heptane	1.6	Not Detected	6.7	Not Detected
Trichloroethene	1.6	390	8.8	2100
1,2-Dichloropropane	1.6	Not Detected	7.6	Not Detected
1,4-Dioxane	6.6	Not Detected	24	Not Detected
Bromodichloromethane	1.6	Not Detected	11	Not Detected
cis-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
4-Methyl-2-pentanone	1.6	Not Detected	6.7	Not Detected
Toluene	1.6	9.3	6.2	35
trans-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
1,1,2-Trichloroethane	1.6	Not Detected	8.9	Not Detected
Tetrachloroethene	1.6	Not Detected	11	Not Detected
2-Hexanone	6.6	Not Detected	27	Not Detected

eurofins | Air Toxics

Client Sample ID: EXH-EP2-101718

Lab ID#: 1810541-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102622a**	**Date of Collection:**	**10/17/18 12:55:00 P**
Dil. Factor:	**3.28**	**Date of Analysis:**	**10/26/18 09:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.6	Not Detected	14	Not Detected
1,2-Dibromoethane (EDB)	1.6	Not Detected	13	Not Detected
Chlorobenzene	1.6	Not Detected	7.6	Not Detected
Ethyl Benzene	1.6	Not Detected	7.1	Not Detected
m,p-Xylene	1.6	7.0	7.1	30
o-Xylene	1.6	3.3	7.1	14
Styrene	1.6	Not Detected	7.0	Not Detected
Bromoform	1.6	Not Detected	17	Not Detected
Cumene	1.6	Not Detected	8.1	Not Detected
1,1,2,2-Tetrachloroethane	1.6	Not Detected	11	Not Detected
Propylbenzene	1.6	Not Detected	8.1	Not Detected
4-Ethyltoluene	1.6	2.0	8.1	9.6
1,3,5-Trimethylbenzene	1.6	Not Detected	8.1	Not Detected
1,2,4-Trimethylbenzene	1.6	2.0	8.1	9.6
1,3-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
1,4-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
alpha-Chlorotoluene	1.6	Not Detected	8.5	Not Detected
1,2-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
1,2,4-Trichlorobenzene	6.6	Not Detected	49	Not Detected
Hexachlorobutadiene	6.6	Not Detected	70	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: EXH-EP4-101718

Lab ID#: 1810541-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102624**	**Date of Collection:**	**10/17/18 4:00:00 PM**
Dil. Factor:	**2.45**	**Date of Analysis:**	**10/26/18 10:06 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Freon 114	1.2	Not Detected	8.6	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	4.9	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.9	Not Detected
Ethanol	4.9	Not Detected	9.2	Not Detected
Freon 113	1.2	Not Detected	9.4	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	25	29	59
2-Propanol	4.9	Not Detected	12	Not Detected
Carbon Disulfide	4.9	Not Detected	15	Not Detected
3-Chloropropene	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.3	Not Detected
1,1-Dichloroethane	1.2	2.0	5.0	8.1
2-Butanone (Methyl Ethyl Ketone)	4.9	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	31	6.7	170
Cyclohexane	1.2	4.8	4.2	16
Carbon Tetrachloride	1.2	Not Detected	7.7	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.7	Not Detected
Benzene	1.2	1.8	3.9	5.8
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.0	Not Detected
Trichloroethene	1.2	130	6.6	680
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.2	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	5.7	4.6	21
trans-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Tetrachloroethene	1.2	Not Detected	8.3	Not Detected
2-Hexanone	4.9	Not Detected	20	Not Detected

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Client Sample ID: EXH-EP4-101718

Lab ID#: 1810541-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102624**	**Date of Collection: 10/17/18 4:00:00 PM**	
Dil. Factor:	**2.45**	**Date of Analysis: 10/26/18 10:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.4	Not Detected
Chlorobenzene	1.2	Not Detected	5.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.3	Not Detected
m,p-Xylene	1.2	2.8	5.3	12
o-Xylene	1.2	1.3	5.3	5.5
Styrene	1.2	Not Detected	5.2	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.0	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.4	Not Detected
Propylbenzene	1.2	Not Detected	6.0	Not Detected
4-Ethyltoluene	1.2	Not Detected	6.0	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	6.0	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	6.0	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.3	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	4.9	Not Detected	36	Not Detected
Hexachlorobutadiene	4.9	Not Detected	52	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: EXH-EP1-101818

Lab ID#: 1810541-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102907**	**Date of Collection:**	**10/18/18 9:35:00 AM**
Dil. Factor:	**5.45**	**Date of Analysis:**	**10/29/18 04:25 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.7	Not Detected	13	Not Detected
Freon 114	2.7	Not Detected	19	Not Detected
Chloromethane	27	Not Detected	56	Not Detected
Vinyl Chloride	2.7	Not Detected	7.0	Not Detected
1,3-Butadiene	2.7	Not Detected	6.0	Not Detected
Bromomethane	27	Not Detected	100	Not Detected
Chloroethane	11	Not Detected	29	Not Detected
Freon 11	2.7	Not Detected	15	Not Detected
Ethanol	11	Not Detected	20	Not Detected
Freon 113	2.7	Not Detected	21	Not Detected
1,1-Dichloroethene	2.7	Not Detected	11	Not Detected
Acetone	27	Not Detected	65	Not Detected
2-Propanol	11	Not Detected	27	Not Detected
Carbon Disulfide	11	Not Detected	34	Not Detected
3-Chloropropene	11	Not Detected	34	Not Detected
Methylene Chloride	27	Not Detected	95	Not Detected
Methyl tert-butyl ether	11	Not Detected	39	Not Detected
trans-1,2-Dichloroethene	2.7	Not Detected	11	Not Detected
Hexane	2.7	Not Detected	9.6	Not Detected
1,1-Dichloroethane	2.7	Not Detected	11	Not Detected
2-Butanone (Methyl Ethyl Ketone)	11	Not Detected	32	Not Detected
cis-1,2-Dichloroethene	2.7	Not Detected	11	Not Detected
Tetrahydrofuran	2.7	Not Detected	8.0	Not Detected
Chloroform	2.7	Not Detected	13	Not Detected
1,1,1-Trichloroethane	2.7	3.3	15	18
Cyclohexane	2.7	Not Detected	9.4	Not Detected
Carbon Tetrachloride	2.7	Not Detected	17	Not Detected
2,2,4-Trimethylpentane	2.7	Not Detected	13	Not Detected
Benzene	2.7	Not Detected	8.7	Not Detected
1,2-Dichloroethane	2.7	Not Detected	11	Not Detected
Heptane	2.7	Not Detected	11	Not Detected
Trichloroethene	2.7	12	15	62
1,2-Dichloropropane	2.7	Not Detected	12	Not Detected
1,4-Dioxane	11	Not Detected	39	Not Detected
Bromodichloromethane	2.7	Not Detected	18	Not Detected
cis-1,3-Dichloropropene	2.7	Not Detected	12	Not Detected
4-Methyl-2-pentanone	2.7	Not Detected	11	Not Detected
Toluene	2.7	Not Detected	10	Not Detected
trans-1,3-Dichloropropene	2.7	Not Detected	12	Not Detected
1,1,2-Trichloroethane	2.7	Not Detected	15	Not Detected
Tetrachloroethene	2.7	Not Detected	18	Not Detected
2-Hexanone	11	Not Detected	45	Not Detected

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Client Sample ID: EXH-EP1-101818

Lab ID#: 1810541-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102907**	**Date of Collection:**	**10/18/18 9:35:00 AM**
Dil. Factor:	**5.45**	**Date of Analysis:**	**10/29/18 04:25 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.7	Not Detected	23	Not Detected
1,2-Dibromoethane (EDB)	2.7	Not Detected	21	Not Detected
Chlorobenzene	2.7	Not Detected	12	Not Detected
Ethyl Benzene	2.7	Not Detected	12	Not Detected
m,p-Xylene	2.7	Not Detected	12	Not Detected
o-Xylene	2.7	Not Detected	12	Not Detected
Styrene	2.7	Not Detected	12	Not Detected
Bromoform	2.7	Not Detected	28	Not Detected
Cumene	2.7	Not Detected	13	Not Detected
1,1,2,2-Tetrachloroethane	2.7	Not Detected	19	Not Detected
Propylbenzene	2.7	Not Detected	13	Not Detected
4-Ethyltoluene	2.7	Not Detected	13	Not Detected
1,3,5-Trimethylbenzene	2.7	Not Detected	13	Not Detected
1,2,4-Trimethylbenzene	2.7	Not Detected	13	Not Detected
1,3-Dichlorobenzene	2.7	Not Detected	16	Not Detected
1,4-Dichlorobenzene	2.7	Not Detected	16	Not Detected
alpha-Chlorotoluene	2.7	Not Detected	14	Not Detected
1,2-Dichlorobenzene	2.7	Not Detected	16	Not Detected
1,2,4-Trichlorobenzene	11	Not Detected	81	Not Detected
Hexachlorobutadiene	11	Not Detected	120	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	111	70-130

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Client Sample ID: EXH-EP2-101818

Lab ID#: 1810541-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102627**	**Date of Collection:**	**10/18/18 11:40:00 A**
Dil. Factor:	**2.37**	**Date of Analysis:**	**10/27/18 12:14 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.6	Not Detected
Ethanol	4.7	Not Detected	8.9	Not Detected
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	13	28	32
2-Propanol	4.7	Not Detected	12	Not Detected
Carbon Disulfide	4.7	Not Detected	15	Not Detected
3-Chloropropene	4.7	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	3.0	4.8	12
2-Butanone (Methyl Ethyl Ketone)	4.7	23	14	67
cis-1,2-Dichloroethene	1.2	1.8	4.7	7.2
Tetrahydrofuran	1.2	31	3.5	92
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	71	6.5	390
Cyclohexane	1.2	7.5	4.1	26
Carbon Tetrachloride	1.2	Not Detected	7.4	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.5	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	300	6.4	1600
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.9	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
2-Hexanone	4.7	Not Detected	19	Not Detected

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Client Sample ID: EXH-EP2-101818

Lab ID#: 1810541-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102627**	**Date of Collection:**	**10/18/18 11:40:00 A**
Dil. Factor:	**2.37**	**Date of Analysis:**	**10/27/18 12:14 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Styrene	1.2	12	5.0	52
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.1	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.1	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	35	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	116	70-130

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Client Sample ID: EXH-EP3-101818

Lab ID#: 1810541-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102628**	**Date of Collection:**	**10/18/18 5:45:00 PM**
Dil. Factor:	**4.39**	**Date of Analysis:**	**10/27/18 12:40 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.2	Not Detected	11	Not Detected
Freon 114	2.2	Not Detected	15	Not Detected
Chloromethane	22	Not Detected	45	Not Detected
Vinyl Chloride	2.2	Not Detected	5.6	Not Detected
1,3-Butadiene	2.2	Not Detected	4.8	Not Detected
Bromomethane	22	Not Detected	85	Not Detected
Chloroethane	8.8	Not Detected	23	Not Detected
Freon 11	2.2	Not Detected	12	Not Detected
Ethanol	8.8	Not Detected	16	Not Detected
Freon 113	2.2	Not Detected	17	Not Detected
1,1-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Acetone	22	24	52	58
2-Propanol	8.8	Not Detected	22	Not Detected
Carbon Disulfide	8.8	Not Detected	27	Not Detected
3-Chloropropene	8.8	Not Detected	27	Not Detected
Methylene Chloride	22	Not Detected	76	Not Detected
Methyl tert-butyl ether	8.8	Not Detected	32	Not Detected
trans-1,2-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Hexane	2.2	Not Detected	7.7	Not Detected
1,1-Dichloroethane	2.2	Not Detected	8.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	8.8	Not Detected	26	Not Detected
cis-1,2-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Tetrahydrofuran	2.2	Not Detected	6.5	Not Detected
Chloroform	2.2	Not Detected	11	Not Detected
1,1,1-Trichloroethane	2.2	38	12	200
Cyclohexane	2.2	26	7.6	88
Carbon Tetrachloride	2.2	Not Detected	14	Not Detected
2,2,4-Trimethylpentane	2.2	Not Detected	10	Not Detected
Benzene	2.2	Not Detected	7.0	Not Detected
1,2-Dichloroethane	2.2	Not Detected	8.9	Not Detected
Heptane	2.2	Not Detected	9.0	Not Detected
Trichloroethene	2.2	6.4	12	34
1,2-Dichloropropane	2.2	Not Detected	10	Not Detected
1,4-Dioxane	8.8	Not Detected	32	Not Detected
Bromodichloromethane	2.2	Not Detected	15	Not Detected
cis-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
4-Methyl-2-pentanone	2.2	Not Detected	9.0	Not Detected
Toluene	2.2	3.9	8.3	15
trans-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
1,1,2-Trichloroethane	2.2	Not Detected	12	Not Detected
Tetrachloroethene	2.2	Not Detected	15	Not Detected
2-Hexanone	8.8	Not Detected	36	Not Detected

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Client Sample ID: EXH-EP3-101818

Lab ID#: 1810541-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102628**	**Date of Collection: 10/18/18 5:45:00 PM**	
Dil. Factor:	**4.39**	**Date of Analysis: 10/27/18 12:40 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.2	Not Detected	19	Not Detected
1,2-Dibromoethane (EDB)	2.2	Not Detected	17	Not Detected
Chlorobenzene	2.2	Not Detected	10	Not Detected
Ethyl Benzene	2.2	Not Detected	9.5	Not Detected
m,p-Xylene	2.2	2.4	9.5	10
o-Xylene	2.2	Not Detected	9.5	Not Detected
Styrene	2.2	Not Detected	9.3	Not Detected
Bromoform	2.2	Not Detected	23	Not Detected
Cumene	2.2	Not Detected	11	Not Detected
1,1,2,2-Tetrachloroethane	2.2	Not Detected	15	Not Detected
Propylbenzene	2.2	Not Detected	11	Not Detected
4-Ethyltoluene	2.2	Not Detected	11	Not Detected
1,3,5-Trimethylbenzene	2.2	Not Detected	11	Not Detected
1,2,4-Trimethylbenzene	2.2	Not Detected	11	Not Detected
1,3-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,4-Dichlorobenzene	2.2	Not Detected	13	Not Detected
alpha-Chlorotoluene	2.2	Not Detected	11	Not Detected
1,2-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,2,4-Trichlorobenzene	8.8	Not Detected	65	Not Detected
Hexachlorobutadiene	8.8	Not Detected	94	Not Detected

Container Type: 1 Liter Summa Canister

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

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Client Sample ID: Lab Blank

Lab ID#: 1810541-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102606**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 11:28 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1810541-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102606**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 11:28 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1810541-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1810541-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	110	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: CCV

Lab ID#: 1810541-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102602**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 08:55 AM**

Compound	%Recovery
Freon 12	101
Freon 114	102
Chloromethane	108
Vinyl Chloride	120
1,3-Butadiene	117
Bromomethane	102
Chloroethane	105
Freon 11	99
Ethanol	95
Freon 113	99
1,1-Dichloroethene	112
Acetone	104
2-Propanol	98
Carbon Disulfide	100
3-Chloropropene	106
Methylene Chloride	97
Methyl tert-butyl ether	108
trans-1,2-Dichloroethene	113
Hexane	107
1,1-Dichloroethane	106
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	100
Tetrahydrofuran	104
Chloroform	102
1,1,1-Trichloroethane	100
Cyclohexane	114
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	110
Benzene	100
1,2-Dichloroethane	94
Heptane	113
Trichloroethene	101
1,2-Dichloropropane	101
1,4-Dioxane	107
Bromodichloromethane	96
cis-1,3-Dichloropropene	101
4-Methyl-2-pentanone	104
Toluene	104
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	103
Tetrachloroethene	101
2-Hexanone	106

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Client Sample ID: CCV

Lab ID#: 1810541-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 08:55 AM**	

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	100
Chlorobenzene	103
Ethyl Benzene	110
m,p-Xylene	114
o-Xylene	115
Styrene	118
Bromoform	101
Cumene	112
1,1,2,2-Tetrachloroethane	99
Propylbenzene	105
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	110
1,3-Dichlorobenzene	102
1,4-Dichlorobenzene	102
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	99
1,2,4-Trichlorobenzene	99
Hexachlorobutadiene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: CCV

Lab ID#: 1810541-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102902**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 10:58 AM**

Compound	%Recovery
Freon 12	104
Freon 114	103
Chloromethane	100
Vinyl Chloride	109
1,3-Butadiene	109
Bromomethane	107
Chloroethane	95
Freon 11	106
Ethanol	86
Freon 113	100
1,1-Dichloroethene	100
Acetone	107
2-Propanol	100
Carbon Disulfide	102
3-Chloropropene	108
Methylene Chloride	109
Methyl tert-butyl ether	120
trans-1,2-Dichloroethene	127
Hexane	124
1,1-Dichloroethane	120
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	100
Tetrahydrofuran	94
Chloroform	103
1,1,1-Trichloroethane	105
Cyclohexane	105
Carbon Tetrachloride	110
2,2,4-Trimethylpentane	98
Benzene	91
1,2-Dichloroethane	101
Heptane	102
Trichloroethene	95
1,2-Dichloropropane	92
1,4-Dioxane	98
Bromodichloromethane	96
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	93
Toluene	96
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	95
Tetrachloroethene	104
2-Hexanone	96

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Client Sample ID: CCV

Lab ID#: 1810541-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 10:58 AM**	

Compound	%Recovery
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	98
Chlorobenzene	98
Ethyl Benzene	103
m,p-Xylene	111
o-Xylene	126
Styrene	127
Bromoform	112
Cumene	118
1,1,2,2-Tetrachloroethane	105
Propylbenzene	115
4-Ethyltoluene	120
1,3,5-Trimethylbenzene	113
1,2,4-Trimethylbenzene	120
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	111
alpha-Chlorotoluene	113
1,2-Dichlorobenzene	114
1,2,4-Trichlorobenzene	114
Hexachlorobutadiene	117

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	112	70-130

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Client Sample ID: LCS

Lab ID#: 1810541-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 09:47 AM**	

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	98	70-130
Chloromethane	101	70-130
Vinyl Chloride	114	70-130
1,3-Butadiene	112	70-130
Bromomethane	106	70-130
Chloroethane	103	70-130
Freon 11	94	70-130
Ethanol	92	70-130
Freon 113	94	70-130
1,1-Dichloroethene	103	70-130
Acetone	99	70-130
2-Propanol	92	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	107	70-130
Methylene Chloride	88	70-130
Methyl tert-butyl ether	100	70-130
trans-1,2-Dichloroethene	115	70-130
Hexane	105	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	86	70-130
Tetrahydrofuran	98	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	112	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	105	70-130
Benzene	93	70-130
1,2-Dichloroethane	86	70-130
Heptane	108	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	101	70-130
Bromodichloromethane	92	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	97	70-130
2-Hexanone	105	70-130

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Client Sample ID: LCS

Lab ID#: 1810541-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 09:47 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	107	70-130
m,p-Xylene	113	70-130
o-Xylene	111	70-130
Styrene	117	70-130
Bromoform	101	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	103	70-130
4-Ethyltoluene	114	70-130
1,3,5-Trimethylbenzene	104	70-130
1,2,4-Trimethylbenzene	111	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	103	70-130
alpha-Chlorotoluene	108	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	98	70-130
Hexachlorobutadiene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 1810541-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 10:31 AM**	

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	100	70-130
Chloromethane	101	70-130
Vinyl Chloride	119	70-130
1,3-Butadiene	113	70-130
Bromomethane	106	70-130
Chloroethane	104	70-130
Freon 11	94	70-130
Ethanol	91	70-130
Freon 113	94	70-130
1,1-Dichloroethene	107	70-130
Acetone	98	70-130
2-Propanol	94	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	109	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	102	70-130
trans-1,2-Dichloroethene	116	70-130
Hexane	106	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	104	70-130
cis-1,2-Dichloroethene	89	70-130
Tetrahydrofuran	100	70-130
Chloroform	97	70-130
1,1,1-Trichloroethane	96	70-130
Cyclohexane	110	70-130
Carbon Tetrachloride	97	70-130
2,2,4-Trimethylpentane	105	70-130
Benzene	93	70-130
1,2-Dichloroethane	86	70-130
Heptane	108	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	102	70-130
Bromodichloromethane	92	70-130
cis-1,3-Dichloropropene	105	70-130
4-Methyl-2-pentanone	96	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	99	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	98	70-130
2-Hexanone	105	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1810541-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/18 10:31 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	112	70-130
o-Xylene	111	70-130
Styrene	116	70-130
Bromoform	102	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	103	70-130
4-Ethyltoluene	114	70-130
1,3,5-Trimethylbenzene	106	70-130
1,2,4-Trimethylbenzene	110	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	103	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	99	70-130
Hexachlorobutadiene	98	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1810541-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 11:37 AM**	

Compound	%Recovery	Method Limits
Freon 12	99	70-130
Freon 114	99	70-130
Chloromethane	100	70-130
Vinyl Chloride	89	70-130
1,3-Butadiene	104	70-130
Bromomethane	108	70-130
Chloroethane	100	70-130
Freon 11	101	70-130
Ethanol	90	70-130
Freon 113	96	70-130
1,1-Dichloroethene	102	70-130
Acetone	101	70-130
2-Propanol	95	70-130
Carbon Disulfide	93	70-130
3-Chloropropene	102	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	100	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	100	70-130
1,1-Dichloroethane	94	70-130
2-Butanone (Methyl Ethyl Ketone)	99	70-130
cis-1,2-Dichloroethene	84	70-130
Tetrahydrofuran	101	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	105	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	94	70-130
1,2-Dichloroethane	98	70-130
Heptane	104	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	87	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	94	70-130
cis-1,3-Dichloropropene	98	70-130
4-Methyl-2-pentanone	90	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	102	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	101	70-130
2-Hexanone	101	70-130

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Client Sample ID: LCS

Lab ID#: 1810541-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 11:37 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	104	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	112	70-130
o-Xylene	111	70-130
Styrene	115	70-130
Bromoform	107	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	102	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	118	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	101	70-130
1,2,4-Trichlorobenzene	95	70-130
Hexachlorobutadiene	101	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 1810541-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 12:03 PM**	

Compound	%Recovery	Method Limits
Freon 12	109	70-130
Freon 114	108	70-130
Chloromethane	104	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	111	70-130
Bromomethane	112	70-130
Chloroethane	104	70-130
Freon 11	109	70-130
Ethanol	94	70-130
Freon 113	103	70-130
1,1-Dichloroethene	108	70-130
Acetone	108	70-130
2-Propanol	110	70-130
Carbon Disulfide	111	70-130
3-Chloropropene	117	70-130
Methylene Chloride	112	70-130
Methyl tert-butyl ether	112	70-130
trans-1,2-Dichloroethene	127	70-130
Hexane	118	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	101	70-130
Chloroform	107	70-130
1,1,1-Trichloroethane	110	70-130
Cyclohexane	111	70-130
Carbon Tetrachloride	113	70-130
2,2,4-Trimethylpentane	106	70-130
Benzene	95	70-130
1,2-Dichloroethane	103	70-130
Heptane	106	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	103	70-130
cis-1,3-Dichloropropene	106	70-130
4-Methyl-2-pentanone	102	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	101	70-130
2-Hexanone	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1810541-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p102904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/18 12:03 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	110	70-130
m,p-Xylene	113	70-130
o-Xylene	120	70-130
Styrene	125	70-130
Bromoform	104	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	84	70-130
Propylbenzene	94	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	93	70-130
1,2,4-Trichlorobenzene	89	70-130
Hexachlorobutadiene	92	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	94	70-130

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

Project Manager Peter Holladz

Collected by: (Print and Sign) Ron Russo JR

Company AECOM Email Peter.Holladz@AECOM.com

Address 1600 Perimeter Park Dr. City Suite 400 Morrisville State NC Zip 27560

Phone 919-461-1194 Fax

Project Info:

P.O. #

Project # 60581049-200

Project Name UTC Carrier: TR20

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	EXH-EP2-101718	1L3110	10/17/18	12:55	TO-15	30	6		
02A	EXH-EP4-101718	1L2907	10/17/18	16:00	TO-15	27	6		
03A	EXH-EP1-101818	1L2348	10/18/18	0935	TO-15	29.5	6		
04A	EXH-EP2-101818	40892	10/18/18	11:40	TO-15	28.5	6		
05A	EXH-EP3-101818	1L1708	10/18/18	17:45	TO-15	27	6		

Relinquished by: (signature) Date/Time: Ron Russo JR 10/22/18 16:00

Received by: (signature) Date/Time: GATL 10/24/18 0940

Relinquished by: (signature) Date/Time:

Received by: (signature) Date/Time:

Relinquished by: (signature) Date/Time:

Received by: (signature) Date/Time:

Notes:
Peter.Holladz@AECOM.com

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
FedEx		N/A	Good	Yes No None	1810541

Form 1293 rev.11

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