STERLING
Sterling Environmental Engineering, P.C

ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL
ELMIRA, NEW YORK

2017 ANNUAL CERTIFICATION REPORT

Prepared for:

Elmira City School District
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ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL
ELMIRA, NEW YORK

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1.0 INTRODUCTION

This 2017 Annual Certification Report (ACR) is prepared by Sterling Environmental Engineering, P.C. (STERLING) for the Elmira High School (EHS), located at 777 South Main Street, Elmira, Chemung County, New York (see Figure 1 for location).

The EHS Environmental Management Plan (EMP) (June 2009) requires preparation of an ACR to document completion of environmental monitoring and related events conducted each year. Deviations from EMP specifications are documented in Section 7.0.

The EMP provides specific procedures and safety precautions to be followed for ground-intrusive activities, community air monitoring, groundwater management, indoor air quality, the operation, monitoring and maintenance of engineering controls, and documentation and reporting.

1.1 2017 Implemented Plans

The Indoor Air Quality Assurance Program (IAQAP) (Section 4.0 of EMP) provides guidance for annual monitoring of the sub-slab vapor, indoor air, and ambient outdoor air on the EHS property, as required by the New York State Department of Health (NYSDOH). Previous air quality investigations are described in the IAQAP, and the rationale for the sampling locations is presented in Section 1.2. Currently, the EHS property has five (5) sub-slab depressurization systems (SSDSs) as depicted on Figure 2. The SSDS's are located beneath the Science Addition (K-Wing), Gymnasium (Gym), Renovated Cafeteria, Cafeteria Addition, and the F-Wing.

The IAQAP requires the School District to ensure any new sub-slab vapor sampling ports are installed in accordance with the specifications described in the EMP, and sub-slab vapor, indoor air, and ambient outdoor air samples are collected from the designated sampling locations during the heating season. Activities specified in the IAQAP and the Operations, Monitoring and Maintenance (OM&M) Plan provided in the EMP were conducted in 2017, including:

- Differential pressure monitoring and inspection of the five (5) SSDSs,
- Inspection of the engineered vapor barriers beneath each of the SSDSs,
- Differential pressure monitoring of the sub-slab ports associated with the Main Building (beyond the sub-slab ports not influenced by a SSDS in the locations identified above),
- Differential pressure monitoring between the indoor air and outdoor air pressures of Room 127,
- Inspection of the Heating, Ventilation and Air Conditioning (HVAC) system, and
- Review of chemical use and storage inventories for the EHS property.

The OM&M Plan provides procedures for inspecting, evaluating and maintaining the engineering controls at EHS, which include the HVAC, vapor barrier, SSDS and cover systems. Activities specified in the OM&M Plan were conducted in 2017, including:

- Inspection of the indoor and outdoor cover systems, and
- Repairs of cover system breaches due to construction and investigation.

The IAQAP also provides guidance for mitigation techniques (if necessary) to address potential impacts to indoor air quality.

1.2 2017 Completed IAQAP Tasks

The following IAQAP tasks were completed by STERLING in 2017:

- Quarterly Indoor vs Outdoor Air Pressure Differential Monitoring in Room 127 (conducted February 21, April 10, August 4, and December 27, 2017).
- Quarterly Sub-Slab and Interior Vapor Pressure Differential Monitoring (conducted February 21, April 10, August 4 and 9, and December 27, 2017).
- Annual Indoor Air Quality Questionnaire and Building Inventory (Questionnaire completed on December 7, 2017 by Mr. Dominic Insogna of EHS and Product Inventory was conducted on December 27, 2017 by STERLING).
- Annual Indoor Air Quality Monitoring (conducted December 27, 2017).
- HVAC System Inspections (February 10 and 13, and December 14, 2017).
- SSDS Component Inspections in K-Wing, Gym, Cafeteria (including the Cafeteria Addition and Renovated Cafeteria) and F-Wing (conducted February 21, April 10, August 4, and December 27, 2017).

The quarterly IAQAP events are performed each quarter during designated school breaks to allow school activities to continue on a daily basis without interference from these events. As a result, quarterly monitoring events are not necessarily spaced evenly through the year. The purpose of each IAQAP task is described below.

1.2.1 Quarterly Indoor vs Outdoor Air Pressure Differential Monitoring in Room 127

Differential pressure is measured between the indoor air and outdoor air in Room 127. The data is used to determine if the HVAC system creates a positive indoor air pressure in areas of the Main Building where SSDSs have not been installed, when local HVAC fans are operating. There is a potential for soil vapor to migrate to indoor air space if the sub-slab pressure is greater than the indoor air pressure. As described in Section 2.0, a SSDS has been installed in the F-Wing to maintain a lower pressure in the sub-slab compared to indoor air, thereby eliminating the potential for vapor intrusion. The F-Wing SSDS is designed to address the only area where a building-wide survey indicated the presence of detectable concentration of volatile organic compounds (VOCs) in the indoor air and in the sub-slab. Results are discussed in Section 2.1.

1.2.2 Quarterly Sub-Slab and Interior Vapor Pressure Differential Monitoring

Differential pressure is measured between the indoor air and sub-slab vapor ports and magnehelic gauges in the Main Building, Gym, K-Wing, Cafeteria and F-Wing. The data is used to determine if the HVAC system creates a positive pressure in areas of the Main Building when local fans are operating, with respect to the sub-slab and outdoors, and to verify the SSDSs in the Gym, K-Wing, Cafeteria and F-Wing are functioning properly. Results are discussed in Section 2.2.

1.2.3 Annual Indoor Air Quality Questionnaire and Building Inventory

A pre-air quality inspection is performed prior to each sampling event to identify and minimize conditions that may interfere with the air quality monitoring event. Any containers with loose covers, open covers or that are leaking are capped or corrected to mitigate threats or impacts to indoor air quality. The inspection involves completing the NYSDOH Indoor Air Quality Questionnaire and Building Inventory which identify products used in the School Building, location of products, and photoionization detector (PID) measurements for the air space near the product containers. Results are discussed in Section 2.3.

1.2.4 Annual Indoor Air Quality Monitoring

An air quality sample and duplicate sample from the indoor air in Room 127 (within the F-Wing) are collected and analyzed for VOCs by USEPA Method TO-15 based on recommendations by the NYSDOH Memorandum to the New York State Education Department (NYSED) dated March 3, 2010. Results are discussed in Section 2.4.

1.2.5 HVAC System Inspections

The HVAC system is inspected bi-annually and is monitored daily by building support staff using a computer system which monitors electronic sensors at numerous locations throughout the HVAC system. These inspections and monitoring verify the system is functioning as designed. The system is designed to produce a neutral pressure between the indoor air pressure and the outdoor air pressure when local HVAC fans are operating. Results are discussed in Section 2.5.

1.2.6 SSDS Component Inspections in K-Wing, Gym, Cafeteria and F-Wing

The SSDS evacuates soil vapor from pore spaces beneath the slab foundations and vents to the outside air. The negative pressure solid pipe that emerges from the sub-slab in the K-Wing, Gym, Cafeteria and F-Wing are inspected within the building and above the roof to determine if holes, cracks or penetrations are present that could allow indoor air or outside air to infiltrate into the system, thereby reducing the negative pressure gradient in the sub-slab gas permeable layer.

The remaining components of the negative pressure system are verified to be maintaining a negative pressure in the sub-slab by monitoring the permanently installed manometers, inspecting the ducts and monitoring the sub-slab differential pressure gauges. Each system must maintain a pressure differential of at least 0.02 inch water column (inWC) or five (5) Pascals (Pa) with the sub-slab pressure being less than the indoor air pressure (i.e., an outward pressure gradient). This is also referred to as a negative pressure being maintained in the sub-slab relative to the interior building space.

The manometers that monitor the fiberglass duct connecting the plenums to the exhaust fans in the K-Wing and Gym are inspected within the first 45 days of the heating season and within the first 45 days of the cooling season to ensure these SSDS are functioning properly and to mitigate threats from the sub-slab vapors. Results are discussed in Section 2.6.

1.3 2017 Completed OM&M Plan Tasks

Cover systems are inspected annually to verify proper cover integrity. The EHS floor slab and outdoor school grounds were inspected on December 26 and 27, 2017, and on August 9, 2017, respectively.

1.3.1 Indoor Cover System Inspection (EHS Floor Slab)

The EHS inspection documents the presence of cracks, open penetrations or damage to the building floor slab. Results of the inspection are discussed in Section 3.1.

1.3.2 Outdoor Cover System Inspection

The Outdoor Cover System inspection documents any breaches observed in the asphalt, concrete, gravel areas, mulched planting areas and vegetated soil cover that could potentially allow human contact with underlying potentially contaminated soil or could allow the generation of dust containing contamination. Results of the inspection are discussed in Section 3.2.

1.4 Mitigation Actions Taken by Unisys Corporation

Mitigation actions were taken in the summer of 2017 by Unisys Corporation (Unisys) with respect to the potential areas of concern (AOCs) for polychlorinated biphenyls (PCBs) below the EHS cover system and in areas coinciding with the 2017 Capital Improvements Project for the main parking area and tennis courts. Unisys is a responsible party with respect to the former Sperry Remington Site and the EHS is located upon a portion of the former Sperry Remington Site. Unisys and its consultants, Geosyntec Consultants, Inc. (Geosyntec), performed and supervised remediation activities in 2017, including soil investigations, excavation, stockpiling, testing, transport and disposal of PCB contaminated soil, in accordance with a NYSDEC-approved Interim Remedial Measures (IRM) #1 Work Plan dated June 30, 2017, prepared by Geosyntec and approved by the NYSDEC on July 3, 2017. The IRM #1 Work Plan was prepared and implemented under the direction of the NYSDEC and in accordance with the Department of Environmental Remediation Program Policy Document: Technical Guidance for Site Investigation and Remediation (DER-10). The IRM #1 Work Plan required cover systems to be repaired in conformance with Sections 2.3 and 2.4 of the NYSDEC approved IRM #1 Work Plan.

1.5 Interim Site Management Plan (ISMP)

Based on prior indoor, outdoor and sub-slab soil vapor investigations and the mitigation actions taken to address these findings, Unisys completed and submitted to the NYSDEC in February 2016 an Interim Site Management Plan (ISMP) for the continued protection to the public and environment (see Attachment 1). The ISMP outlines the institutional and engineering controls within the EHS property to manage the potential exposure of contaminants present in the soil, groundwater and soil vapor.

This ISMP concludes and recommends:

- All areas of the school building which require mitigation or monitoring are equipped with sub-slab depressurization systems (SSDSs).
- Differential pressure monitoring has demonstrated that the SSDSs have continuously maintained a depressurized condition in the sub-slab in their vicinity.
- Ongoing chemical and differential pressure monitoring of the SSDSs is no longer needed to demonstrate their efficiency.
- Electronic monitoring of the SSDSs will be performed on a periodic basis and the ducts and floors will be periodically inspected to ensure either no damages have occurred or that detected damage is repaired.

The ISMP is currently under review by the NYSDEC and NYSDOH. Updates to the monitoring requirements and plan will be included once Unisys has completed the delineation of onsite contaminants in accordance with the Site Characterization Work Plan, dated December 2, 2014 and associated addendums.

2.0 2017 INDOOR AIR QUALITY ACTION PLAN (IAQAP) RESULTS

The NYSDOH recommended in its March 3, 2010 Memorandum to the NYSED (Attachment 2) that additional sampling be completed to evaluate the indoor air quality and the pressure differentials in the F-Wing, in response to analytical results from the sub-slab and indoor air samples collected by STERLING in December 2009. The NYSDOH also recommended the samples be collected at a time when the HVAC system is operating, and if necessary, adjustments be made to the School's HVAC system in the F-Wing to reduce the concentration of TCE in the indoor air to background levels. The NYSDOH Air Guideline for TCE was 5 µg/m^3 in 2009 and a background level of 2.6 µg/m^3 is referenced in Table C2: EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA Canister Method", in Appendix C of the NYSDOH Air Guideline document. A SSDS was installed in the F-Wing following an additional sub-slab study and sample collection by Unisys in 2014.

The pressure differential between the sub-slab and the building interior is monitored in Room 127 of the F-Wing to confirm the pressure in the building is greater than the pressure in the sub-slab, thereby preventing vapor intrusion into this portion of the building. This Annual Certification Report presents the results of the routine activities performed to address the NYSDOH comments and recommendations.

2.1 Results of Quarterly Indoor vs Outdoor Air Pressure Differential Monitoring in Room 127

Pressure differentials were measured in 2017 for Room 127 while the local fan in the HVAC system was operating (see Table 2, 4th Quarter Sub-Slab Monitoring Results in Attachment 3). The HVAC system was set to "occupied" mode throughout the building for all pressure differential monitoring events conducted by STERLING. The pressure differential between the indoor and outdoor air was measured using the small diameter tube installed through the window frame in Room 127. Pressure differentials measured in 2017 between the indoor air in Room 127 and the outdoor air indicate the outdoor air pressure was higher than the indoor air pressure for the 2017 monitoring events.

The most recent indoor and outdoor air pressure was measured in the F-Wing on December 27, 2017. Ten readings were recorded, with an average of -0.0250 inWC (see the Daily Field Report (DFR) for December 27, 2017 and Table 2, 4th Quarter Sub-Slab Monitoring Results provided in Attachment 3). An average negative pressure reading on the meter indicates the outdoor air is at a higher pressure than the interior air (i.e., an inward pressure gradient).

Pressure readings for the outdoor air are influenced by wind as documented during previous monitoring events. STERLING recommended in the 2016 ACR, and continues to recommend, that monitoring of the pressure differential between the indoor air and outdoor air for the F-Wing be discontinued because the unreliability of the outdoor air pressure measurements. The differential pressure between the indoor air and sub-slab vapor is monitored and the negative sub-slab pressure produced by operation of the F-Wing SSDS precludes the need to measure the outdoor air pressure.

2.2 Quarterly Sub-Slab and Interior Vapor Pressure Differential Monitoring Results

On February 21, April 10, August 4 and 9, and December 27, 2017, the pressure differential between the sub-slab vapor and indoor air was measured in the Main Building, Gym, K-Wing and Cafeteria. Sub-slab vapor pressure was measured from sub-slab vapor access points at five (5) locations in the K-Wing, three (3) locations in the Gym, four (4) locations in the Cafeteria and ten (10) locations in the Main Building. Pressure differential readings were measured by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602, to the floor ports and/or the Magnehelic gauges and obtaining three (3) 32 second average pressure differential readings at each location. The HVAC system units throughout the entire building were continuously operating under the "occupied" mode during the 2017 monitoring events. The outside ambient barometric pressure and temperature were also recorded. DFRs and results of the pressure differential monitoring events are provided in Attachment 3.

Recorded values in the Main Building indicate the pressure differential between the indoor air and sub-slab were zero (0) inWC for several locations, slightly positive, or slightly negative at other locations in the Main Building. These measurements indicate the sampling ports may or may not be influenced by the SSDSs throughout the EHS, or the HVAC system is not providing a positive indoor air pressure relative to the sub-slab. The EHS environmental controls of the HVAC system are wired into the District's Day Automation System and can be modified at any time by the Director of Facilities III. Future pressure monitoring will continue to be conducted with the HVAC system set to "occupied" mode.

According to the data contained in Geosyntec Sub-Slab Depressurization System Interim Remedial Measures Proposal dated August 4, 2014, areas beneath the Main Building were not contributing contaminated sub-slab soil vapor to the indoor air and are not considered a threat to public health. The EHS environmental controls of the HVAC system are wired into the District's Day Automation System and can be modified at any time. Future pressure monitoring will continue to be conducted with the HVAC system set to "occupied" mode.

The recorded pressure difference met the NYSDOH standard of -0.02 inWC during all 2017 monitoring events for the K-Wing, Gym, F-Wing and Cafeteria. Quarterly monitoring will continue to be performed in 2018. There is an outstanding request to the NYSED for a determination as to whether the HVAC system must be adjusted to create a positive indoor air pressure during the heating and cooling seasons.

The pressure differential measurements obtained at all ports in the F-Wing, Gym, K-Wing, and Cafeteria indicate an outward pressure gradient for all 2017 monitoring events, ranging from -0.048 inWC to greater than -0.250 inWC, indicating the SSDSs installed in each area are meeting the designed pressure difference of a minimum of 0.02 inWC (see Tables 1, 2 and 4 provided in the quarterly reports as Attachment 3).

These pressure differential measurements, as well as pressure differential readings throughout the F-Wing, indicate an outward pressure gradient when the HVAC system is in "occupied" mode within the zone of influence of the SSDS. Pressure differential measurements in areas outside the influence of the SSDSs demonstrate that an outward pressure gradient is not necessarily achieved at all locations and is not necessary as these areas are not contributing contaminated sub-slab soil vapor to the indoor air.

The HVAC system is set to be in "occupied" mode when the building is occupied, as required by the EMP. Areas outside of the influence of the SSDSs are not achieving an outward pressure gradient. The pressure differential of 0.02 inWC specified in the EMP is applicable only to those portions of the school where a SSDS is installed. The NYSDOH recommends that a higher indoor air pressure be maintained relative to the sub-slab. The HVAC system modifications (modified in 2007) do not appear to meet this objective in all locations.

2.3 Annual Indoor Air Quality Questionnaire and Building Inventory Results

An Indoor Air Quality Questionnaire was completed by Mr. Dominic Insogna on December 7, 2017. A Building Inventory inclusive of the Product Inventory and the Indoor Air Quality Questionnaire are provided as Attachment 4. The completed questionnaire identifies potential soil vapor entry points, airflow in the building, and conditions in EHS that may influence indoor air quality (see Figure 1 in Attachment 4). No concerns were noted in the completed questionnaire. The Building Inventory identified multiple products which contain VOCs throughout EHS. However, these products were in closed containers, labeled and stored in appropriate areas. The inventory of all chemical products that may contain VOCs was completed by STERLING during the December 27, 2017 monitoring event and is provided in Table 1 in Attachment 4.

2.4 Annual Indoor Air Quality Monitoring Results

The annual indoor air quality monitoring was conducted on December 27, 2017 for a 12-hour period and included collecting one (1) indoor air sample (IA-A_122717) and one (1) duplicate indoor air sample (IA-B_122717) from Room 127, based on recommendations in the NYSDOH March 2010 Memorandum. The sampling canisters were placed adjacent to each other and on top of a desk in a central location in Room 127 during the testing period. This location was selected to be within a typical breathing zone. The local fan of the HVAC system was operating under an "occupied" status for the duration of the indoor sample collection event. The Category B deliverables laboratory data was validated on January 12, 2018 by an independent third-party, Alpha Geoscience of Clifton Park, New York. The laboratory report, data validation report, and summary table of air quality analytical data collected from Room 127 for 2009 through 2017 are provided in Attachment 5.

TCE was not detected in sample IA-A_122717 or duplicate sample IA-B_122717 at a concentration of 0.107 $\mu g/m^3$, which was the detection limit of the analysis. The reported December 2014 TCE indoor air concentration was 2.1 $\mu g/m^3$ (see Table 1 in Attachment 5). TCE was not detected in the December 2015, 2016 and 2017 indoor air or duplicate samples at the detection limit of 0.107 $\mu g/m^3$. The result for all duplicate air samples for these years were less than the Air Guideline value of 2 $\mu g/m^3$ TCE, as specified in Table 3.1 in the NYSDOH Vapor Guidance. The TCE concentration measured in the indoor air is less than the mean background value of 2.6 $\mu g/m^3$ provided in Appendix C2 in the NYSDOH Vapor Guidance.

2.5 HVAC System Inspection Results

Completed HVAC Inspection forms for Air Handling Units (AHU's) #1 through 16 and AHU #CAFE are provided in Attachment 6, dated February 10 and 13 and December 14, 2017. Screenshots provided in Attachment 6 verify the HVAC system throughout the EHS is operating as designed, and that air movement is occurring in each area served by the corresponding AHU.

2.6 SSDS Component Inspection Results in the K-Wing, Gym and Cafeteria

STERLING inspected the solid pipes for the K-Wing, Gym, and Cafeteria on February 21, April 10, August 4, and December 27, 2017. The solid pipes above the roof were inspected on April 10 and August 4, 2017. The pipes were inspected for holes, cracks or penetrations that could potentially allow building air or outside air to infiltrate into the system. All inspections conducted in 2017 indicate the negative pressure solid pipes for the K-Wing, Gym and Cafeteria are in good condition. Also, the pressure readings between the interior space and the sub-slab indicate an outward pressure gradient from the interior space in the K-Wing, Gym and Cafeteria. Pressure differential readings are provided in the tables in Attachment 3.

The two (2) sub-slab differential pressure magnehelic gauges in the K-Wing consistently maintained an average pressure differential of -0.031 (Table 1, 4th Quarter, Attachment 3) to -0.090 (Table 1, 3rd Quarter, Attachment 3) inWC. The two (2) sub-slab differential pressure magnehelic gauges in the Gym consistently maintained an average pressure differential of at least -0.250 inWC (Table 2, 1 – 4 Quarters, Attachment 3). The four (4) sub-slab differential pressure magnehelic gauges in the Cafeteria consistently maintained an outward pressure gradient with an average pressure differential of -0.250 inWC (Table 1, 1 – 4 Quarters, Attachment 3). Results indicate the magnehelic gauges in the Cafeteria were reading pressure differential of -0.854 (Table 2, 2nd and 4th Quarters, Attachment 3) to -1.847 (Table 4, 4th Quarter, Attachment 3) inWC for the south magnehelic gauges and -0.743 (Table 4, 2nd Quarter, Attachment 3) to -2.24 (Table 4, 1st Quarter, Attachment 3) inWC in the north magnehelic gauges.

The manometers permanently installed on the fiberglass duct connecting the plenum to the exhaust fan in the K-Wing and Gym consistently indicate a pressure differential of approximately -0.20 (Table 1, 3rd Quarter, Attachment 3) to -1.0 in WC (May 18, 2017 1st Quarter Report Letter, Attachment 3). The four (4) sub-slab sets of pressure gauges in the K-Wing (1), Gym (1) and Cafeteria (2) maintain an average pressure differential of -0.031 to -0.250 inWC (Tables 1, 2 and 4, first to fourth Quarters, Attachment 3), respectively, which is in conformance with the requirement to maintain an outward pressure gradient greater than 0.02 inWC.

The Bi-Annual Gas Permeable Layer/Negative Pressure Piping Inspection will occur within the first 45 days of the 2018 cooling season (anticipated to be June 1, 2018) and the second inspection will occur within the first 45 days of the heating season (anticipated to be November 1, 2018).

3.0 SUMMARY OF OM&M RESULTS

3.1 Indoor Cover System Inspection Results (EHS Floor Slab)

An inspection of the indoor cover system in the EHS was completed by STERLING on December 27, 2017. The indoor cover system is the foundation slab of the first floor of the EHS. A summary of crack locations is provided in Table 1 of Attachment 7. In addition, rooms with floor drains or penetrations in the floor are also noted on Table 1. All exposed concrete slab areas and areas covered with vinyl tile, ceramic tile, and terrazzo floor coverings were inspected for evidence of cracks and penetrations. In areas where the building slab is carpeted, including the library, the administrative offices, and portions of the auditorium, STERLING advises an indoor cover system inspection be performed at the time the carpet is removed from these locations.

During the 2017 indoor cover inspection, STERLING observed cracks that were small in width, ranging from hairline to slightly less than one-tenth (1/10) of an inch. These cracks do not appear to have increased in size since the 2014 site visit and conversation between Mr. Michael Dunn (EHS) and Ms. Melissa Doroski (NYSDOH) on July 8, 2014 regarding the superficial cracks identified during the indoor cover inspection for 2013 were minor and not identified as a concern or potential for vapor intrusion. The March 30, 2015 email correspondence between Mr. Dunn and Ms. Dawn Hettrick (NYSDOH) (provided in Attachment 7) verifies during the July 8, 2014 site visit that the NYSDOH does not consider these superficial cracks as a concern for vapor intrusion. STERLING relies on this correspondence during the annual cover inspection as guidance in determining whether or not cracks are superficial and require immediate action.

Two (2) opened and unsealed cracks were identified during the 2017 cover inspection in the auxiliary gym along the eastern wall (Table 1 Photograph 4, Attachment 7) in an area that formerly was obscured by the bleachers, and in Classroom 132 adjacent the northern exit (Table 1 Photograph 7, Attachment 7). EHS personnel were made aware and performed corrective actions to seal the cracks on February 23, 2018.

3.2 Outdoor Cover System Inspection Results

An inspection of the outdoor cover system of the EHS grounds was completed by STERLING on April 9, 2017 and further inspection was performed during the 2017 Capital Improvements Project. Cover systems observed during the April 2017 inspection included asphalt, concrete, gravel areas, mulched planting areas, vegetated areas and temporary mulch covered areas (installed by Geosyntec in April 2015 as part of the ISMP) for the entire school property. A summary of type and location of cover system disturbances on the property (Table 2) with photographs is provided in Attachment 7. None of the conditions needing repair were determined to represent an exposure or hazard to users of the school grounds.

A total of 21 areas with dead grass or disturbed ground surface in the outdoor cover system were noted. Conditions needing maintenance included areas of slight erosion, worn or stressed grass cover, and construction disturbances. The School District addresses the observed disturbances listed in Table 2 of Attachment 7, makes appropriate repairs, and notifies STERLING when repairs are completed. STERLING inspects and documents the repairs during the subsequent inspection or site visit.

STERLING personnel were onsite during the 2017 Capital Improvement Project and observed areas within the Capital Improvement Project where the protective cover was disturbed. STERLING observed and inspected restoration of the protective cover system in the disturbed areas. Geosyntec personnel observed and inspected restoration of the protective cover system in areas where remedial excavation was performed during the summer of 2017. Restoration of the protective cover system in the remedial excavation areas is documented in Geosyntec's Construction Completion Report. NYSDEC personnel frequently inspected site conditions during the Capital Improvement Project and Geosyntec's remedial excavations, including restoration of the protective cover system in disturbed areas.

4.0 GROUND INTRUSIVE ACTIVITIES

4.1 Elmira High School Capital Improvements Project

From June 28 through November 22, 2017, ground intrusion activities and cover system disturbances were performed throughout the existing front parking area, utility trenching/installation in the baseball field and tennis courts as part of the construction associated with the Capital Improvements Project to the EHS. All disturbed areas are presented on Figure 3.

Testing of excavated materials, onsite storage and reuse or disposal of excavated materials onsite were performed in accordance with Section 2.5.3 in the EMP prior to August 2017. In early August 2017, the NYSDEC required future soil management activities, including testing, stockpiling, and disposal activities, to be in accordance with Section 5.4 of DER-10, superseding Section 2.5.3 of the EMP. All intrusions and disturbances associated with the cover system were repaired in conformance to Section 2.5.5 of the EMP.

Community air monitoring (CAMP) was performed during all ground intrusion activities and soil management associated with the Capital Improvements Project in accordance to Section 8.0 of the EMP. Monitoring did not identify potential dust exposure to the surrounding community during construction activities. CAMP monitoring in remedial excavation areas was performed by Geosyntec. CAMP monitoring in Capital Improvement areas was performed by STERLING.

The Environmental Monitoring Report for the 2017 Capital Improvement in the front parking lot and tennis court areas is provided in Attachment 8.

4.2 Unisys Brownfield Cleanup Activities

From June through October, 2017, Unisys and Geosyntec performed remediation activities within the EHS football field, tennis court area, and main parking area, including soil excavation, disposal and cover system repairs. These activities were performed in accordance with the NYSDEC approved IRM #1 Work Plan prepared by Geosyntec, dated June 30, 2017 and approved by NYSDEC on July 3, 2017.

As described in Section 1.4, the 2017 mitigation activities were performed in accordance with the NYSDEC approved IRM #1 Work Plan, prepared by Geosyntec, with direct oversight and guidance by the NYSDEC. The results of these activities are documented in Geosyntec's Construction Completion Report.

4.3 Light Pole Borings

Borings for installation of new light poles in the ball fields were drilled from May 5 to 9, 2017. Soil samples were collected from the borings for geotechnical and environmental testing. Excess soil from the borings was placed in two, NYSDOT 55-gallon drums for temporary storage, pending laboratory analysis for environmental parameters. The drums were sealed and temporarily staged adjacent to a storage shed to avoid damage or tampering. The light poles installed in the borings eliminate any pathway or exposure to the subsurface.

Six (6) representative soil samples were submitted for laboratory analysis for the complete list of compounds specified in NYSDEC DER-10 Appendix 5 to determine the status of the soil. The results of the analysis indicate that no compounds were detected in any of the samples in excess of the NYSDEC Restricted Residential Soil Cleanup Objectives, which are the applicable SCOs for the Site, and that the soil is suitable for reuse on site. The soil will be reused on site after a "Request to Import/Reuse Fill or Soil" form is submitted and approved by the NYSDEC. A summary table of the soil analytical results is presented in Attachment 9.

5.0 GROUNDWATER REMEDIATION SYSTEM

According to Mr. Chad Kehoe of NYSDEC Region 8, the groundwater remediation Oxygen Injection System (OIS) was removed from EHS on May 23, 2011. Therefore, groundwater monitoring is not required and was not performed by STERLING at EHS in 2011 through 2017.

6.0 INTERPRETATIONS

The SSDS beneath the F-Wing maintains a negative pressure relative to the indoor air pressure, such that there is no potential for vapor intrusion into the F-Wing. Outdoor air pressure monitoring in the F-Wing required by the EMP is considered unnecessary because an outward pressure is maintained by the SSDS in the F-Wing and documented by differential pressure monitoring of the indoor air and sub-slab soil vapor.

Quarterly sub-slab differential pressure monitoring indicated the NYSDOH standard of 0.02 inWC between the indoor air and sub-slab soil vapor was met and exceeded in all locations where a SSDS is installed. The locations where the differential pressure of 0.02 inWC was not met are areas not influenced by the SSDSs, and that are not areas of concern, as described in Geosyntec's "Vapor Intrusion Assessment and Mitigation Report – Elmira High School", dated October 2014.

The 2017 Annual Indoor Air Quality Questionnaire and Building Inventory results did not indicate any concerns with regards to the EHS use and storage of materials that could adversely affect indoor air quality or the functioning of the HVAC system, as designed. All products containing VOCs were in closed containers, labeled and stored in appropriate areas.

Annual Indoor Air Monitoring results for 2017 indicate TCE was not detected at or above the analytical detection limit concentration of 0.107 $\mu g/m^3$ within the breathing zone of Room 127. This detection limit is lower than the NYSDOH Vapor Guidance background value of 2.6 $\mu g/m^3$ and the Air Guideline Value of 2 $\mu g/m^3$. The monitoring results indicate the SSDS beneath the F-Wing is operating as designed and is preventing sub-slab soil vapor from entering the indoor air in the F-Wing.

Electronic monitoring of the HVAC and SSDSs is performed to detect when repairs or maintenance are required. No concerns were identified during the 2017 calendar year. Inspections were conducted in February, April, August and December 2017 for the inside piping, aqueous manometers, and magnehelic gauges, and in April and August 2017 for the HVAC roof units. No concerns or deficiencies were noted during inspections.

7.0 CERTIFICATION

I hereby certify the associated activities provided in this report follow the specifications for the EHS EMP, with the following deviations as documented herein:

- The EMP requires the HVAC system to be operational when the building is occupied and the HVAC system creates a positive indoor air pressure relative to the sub-slab in the Main Building, including sections that do not have a SSDS. The design of this upgraded HVAC system does not meet this requirement uniformly throughout the building footprint. Modifying the HVAC system will involve the contracted services of a qualified professional engineer in mechanical engineering, an HVAC control systems monitoring company and an HVAC balancing contractor. Unisys and Geosyntec have filed an agency review draft ISMP which concludes all areas which are potential sources of vapor have been addressed by SSDSs. Therefore, the sub-slab areas with elevated contaminants requiring mitigation or monitoring, according to the matrices in the 2006 NYSDOH Guidance, are under negative pressure relative to indoor air. The ISMP concludes the requirement to maintain the indoor air in the entire building under positive pressure relative to the sub-slab outside of the influence of the installed SSDSs is unnecessary. The ISMP is under review by the NYSDEC and NYSDOH and these Departments will be rendering a decision on these conclusions. At the conclusion of the regulatory review an ISMP will be adopted and will replace the existing EMP.

5/17/2018
Date

Rodney L. Aldrich
Rodney L. Aldrich, P.E.,
Director of Compliance
Sterling Environmental Engineering, P.C.

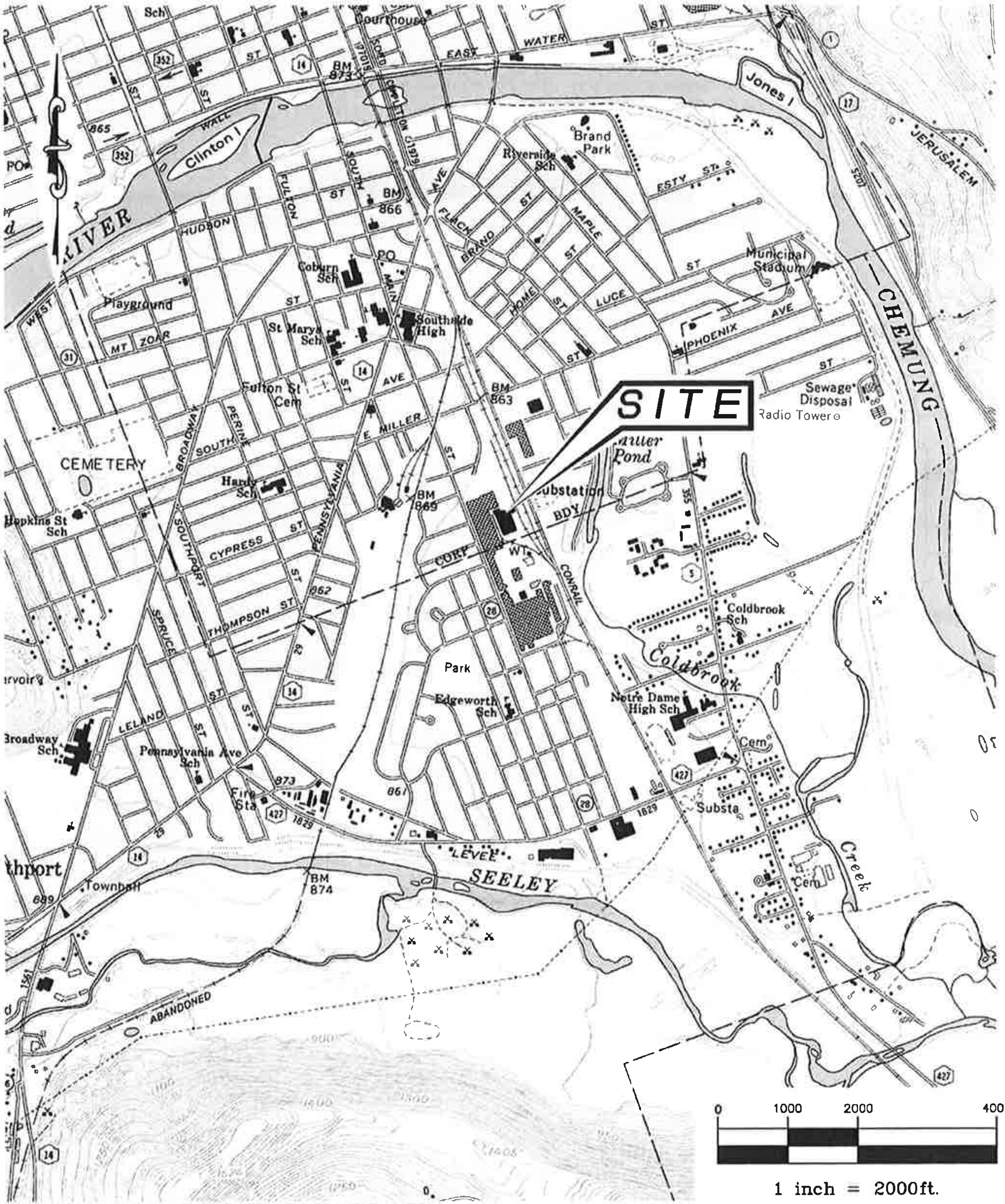
As the School District Supervisor of Buildings & Grounds, I hereby accept this Annual Certification Report (ACR), with the noted accepted deviations, and agree the ACR complies with the EHS EMP.

21 May 18
Date

Michael Dunn
Director of Facilities III
Elmira City School District

S:\Sterling\Projects\2008 Projects\Elmira CSD - 28014\Reports\Annual Certification Reports\Annual Certification 2017\2018-05-17 2017 Annual Certification Report.docx

FIGURES



MAP REFERENCE: NYSDOT ELMIRA QUADRANGLE, 1978.

STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road ♦ Latham, New York 12110

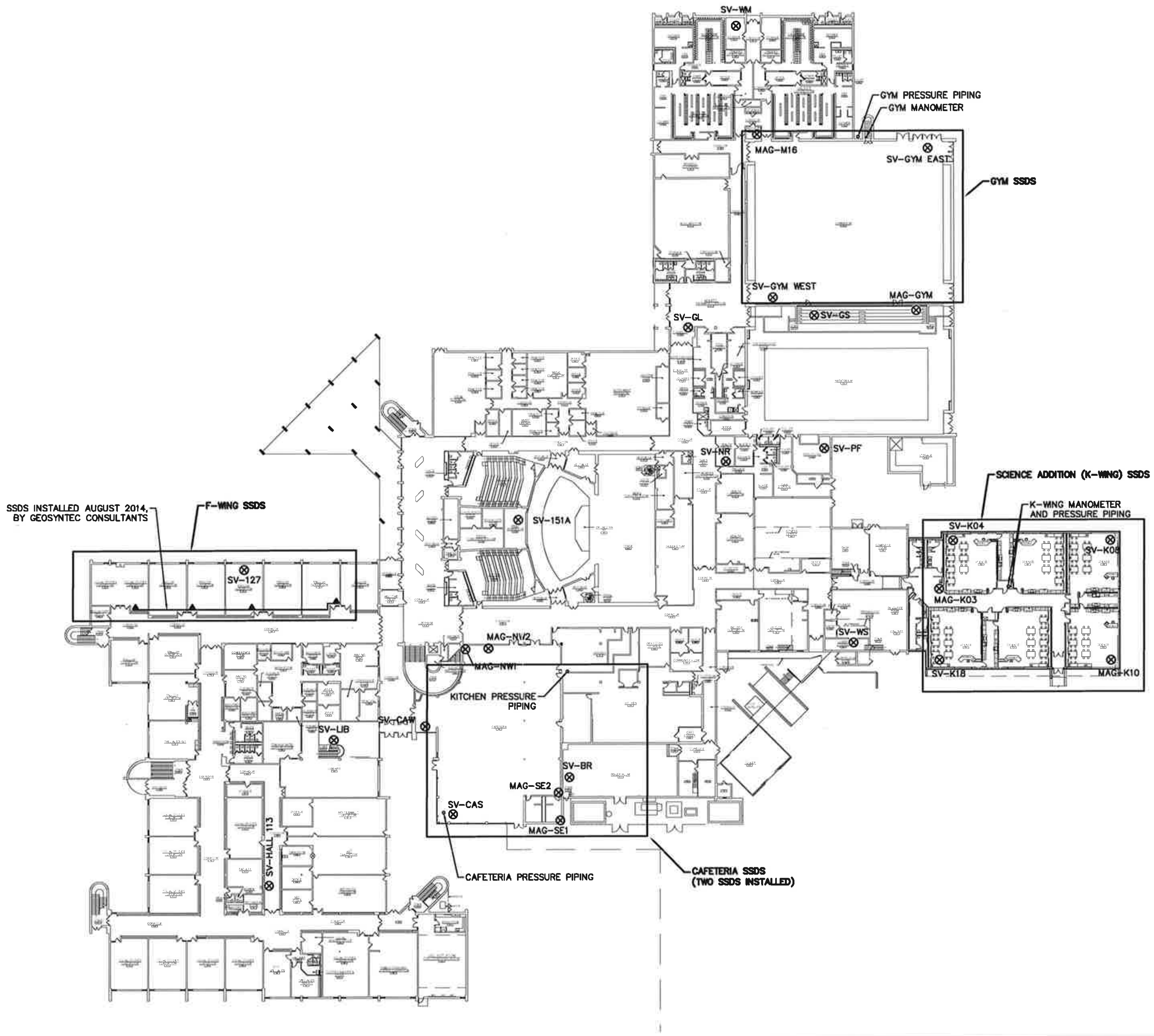
SITE LOCATION MAP

ELMIRA CITY SCHOOL DISTRICT

ELMIRA HIGH SCHOOL, 777 SOUTH MAIN STREET

CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.: 28014	DATE: 3/20/15	SCALE: 1" = 2000'	DWG. NO. 28014100	FIGURE 1



LEGEND:

SV-K08 ⊗	SUB-SLAB SAMPLING LOCATIONS
▭	SUB-SLAB DEPRESSURIZATION SYSTEM LOCATIONS AND AREA OF INFLUENCE
▲▲	SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLED BY GEOSYNTEC CONSULTANTS

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SUB-SLAB
DEPRESSURIZATION SYSTEMS MAP
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.

CITY OF ELMIRA
CHEMUNG CO., N.Y.

PROJ. No.:	DATE:	SCALE:	DWG. NO.	FIGURE
28014	2/23/2018	N.T.S.	28014115	2

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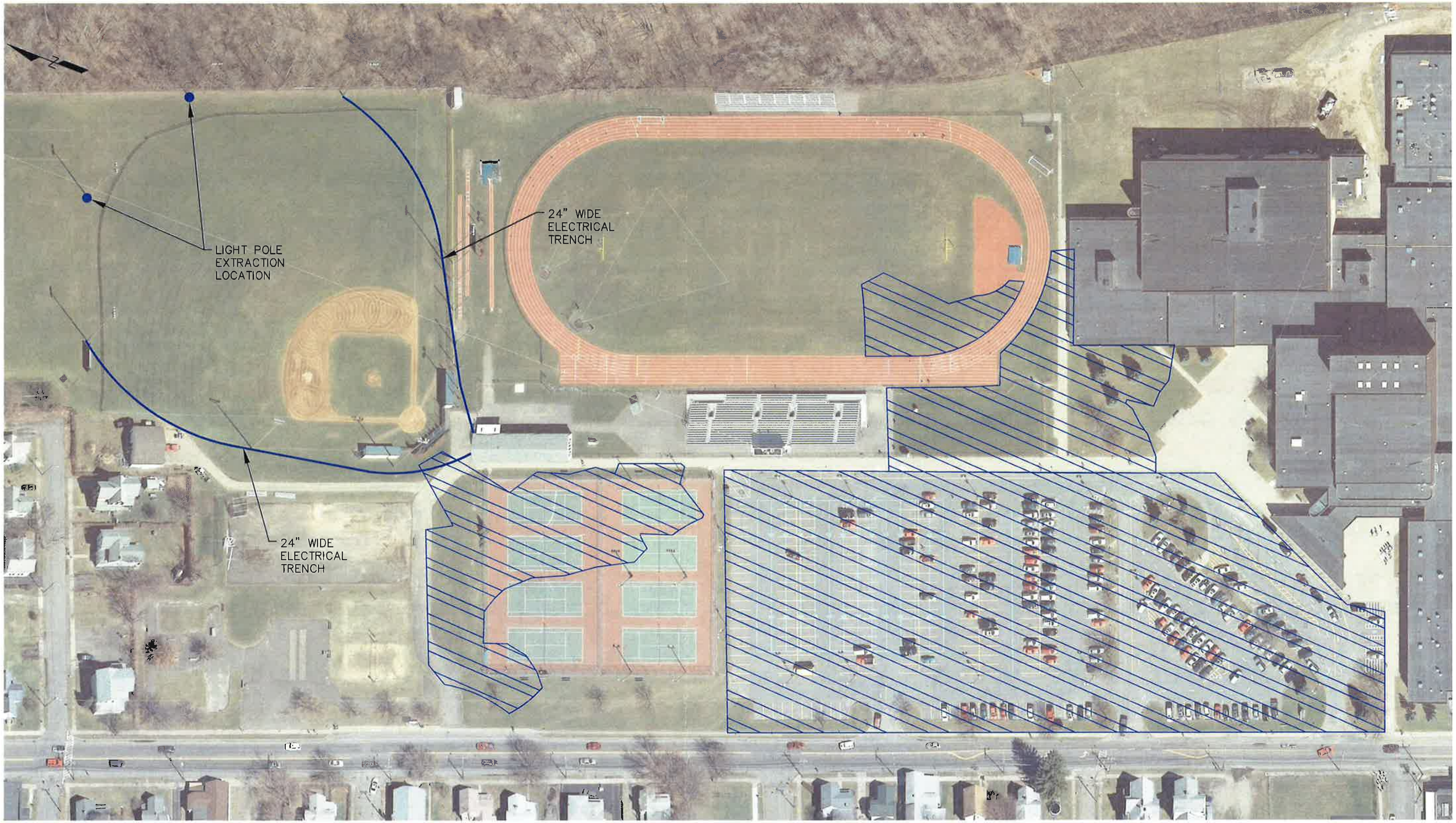

LEGEND:

— APPROXIMATE DISTURBANCE FOR ELECTRICAL TRENCHING

▨ APPROXIMATE DISTURBANCE BOUNDARY

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24 Wade Road • Latham, New York 12110

2017 COVER
DISTURBANCE MAP
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.
CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.: 28014	DATE: 5/2/2018	SCALE: 1" = 100'	DWG. NO. 28014116	FIGURE 3

ATTACHMENT 1

INTERIM SITE MANAGEMENT PLAN (ISMP)
(PROVIDED ON CD)

Geosyntec consultants
engineers | scientists | innovators

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

INTERIM SITE MANAGEMENT PLAN

FORMER SPERRY REMINGTON SITE – NORTH PORTION
777 SOUTH MAIN STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NY
NYSDEC PROJECT 808022

Prepared for

Unisys Corporation

3199 Pilot Knob Road

Eagan, MN 55121

Prepared by
Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
10211 Wincopin Circle, Floor 4
Columbia, Maryland 21044

Project Number MN0832B
Document Number MD16028

FEBRUARY 2016

Agency Review Draft

Former Sperry Remington - North Portion
CHEMUNG COUNTY
ELMIRA, NEW YORK

INTERIM SITE MANAGEMENT PLAN

NYSDEC Site Number: 808022

Prepared for:

Unisys Corporation
3199 Pilot Knob Road
Eagan, MN 55121

Prepared by:

Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
10211 Wincopin Circle, Floor 4
Columbia, Maryland 21044
410 381 4333

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

FEBRUARY 2016

CERTIFICATION STATEMENT

I Aron Krasnopoler certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375 and that this Interim Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Aron Krasnopoler P.E.

12 February 2016 DATE

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CHEMUNG COUNTY

ELMIRA, NEW YORK

INTERIM SITE MANAGEMENT PLAN

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LIST OF ACRONYMS

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LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

AOC	Order on Consent and Administrative Settlement
BCP	Brownfield Cleanup Program
BMP	Best Management Practice
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
COC	Certificate of Completion
COPC	Compound of Potential Concern
DCE	Dichloroethene
DER	Division of Environmental Remediation
EC	Engineering Control
ECSD	Elmira City School District
EHS	Elmira High School
ELAP	Environmental Laboratory Approval Program
EMP	Environmental Management Plan
EWP	Excavation Work Plan
HASP	Health and Safety Plan
HVAC	Heating, Ventilation, Air Conditioning
HVS	High Volume Sampling
IC	Institutional Control
IRM	Interim Remedial Measure
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSED	New York State Education Department
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PID	Photoionization Detector
PRR	Periodic Review Report
ROI	Radius of Influence
RP	Remedial Party
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SHS	Southside High School (now Elmira High School)
SMO	Soil Management Objective
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SSV	Sub-slab Venting

STCC	Southern Tier Commerce Center
VI	Vapor Intrusion
SWPPP	Storm Water Pollution Prevention Plan
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
TOGS	NYSDEC Technical Operational Guidance Series
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: Former Sperry Remington Site - North Portion
777 South Main Street
Elmira, Chemung County, New York

Institutional Controls:	1. The property may be used for restricted residential use;
	2. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chemung County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	1. Cover system
	2. Sub-slab depressurization system.

Inspections:	Frequency
1. Cover inspection	Annually
Monitoring:	
1. SSD Fan Motors	Continuous and real-time
Maintenance:	
1. Cover maintenance	As needed
2. Blower maintenance	As needed
Reporting:	
1. Certification of Institutional and Engineering Controls and Report	Annual

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan

1.0 INTRODUCTION

1.1 General

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York affiliate Beech and Bonaparte Engineering, P.C. (collectively Geosyntec) are submitting this interim Site Management Plan (SMP) for the Former Sperry Remington Site – North Portion Site (Site No. 808022) located in Elmira, New York (hereinafter referred to as the "Site"). Unisys is currently conducting Site Characterization in accordance with the Order on Consent and Administrative Settlement (AOC) with the New York State Department of Environmental Conservation (NYSDEC) for the Site approved by NYSDEC on 7 July 2014.The Site is located at the Elmira High School (EHS) property (formerly known as Southside High School [SHS]), 777 South Main Street in Elmira, Chemung County, New York (see **Figure 1-1**).

Unisys is in the process of applying to the Brownfield Cleanup Program (BCP) administered by NYSDEC with the consent of the Elmira City School District (ECSD) to remediate the Site. A figure showing the Site location and boundaries of this Site is provided in **Figure 1-2**. The boundaries of the Site are more fully described in the metes and bounds site description that is part of the Property Description ~~Environmental Easement~~ provided in Appendix A.

Institutional and Engineering Controls (ICs and ECs) have been incorporated into Site management to control potential exposure to Compounds of Potential Concern (COPCs) that may be present in soil, groundwater and soil vapor on EHS property to ensure protection of public health and the environment.

This interim SMP was prepared to address ICs and ECs that have been implemented as interim measures until a Site remedy has been selected and to describe required monitoring and operation and maintenance (O&M) activities. This interim SMP will be incorporated into the SMP for the Site upon completion of the remedial program, as necessary. This interim SMP may only be revised with the approval of the NYSDEC.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in **Appendix B** of this SMP.

This SMP was prepared by Geosyntec on behalf of Unisys, in accordance with the requirements of the NYSDEC Department of Environmental Remediation's (DER) DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the Site conditions.

1.3 Notifications

Notifications will be submitted by the property owner Unisys and/or ECSD to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the AOC, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the AOC, and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table **1-1** on the following page includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in **Appendix B**.

Table 1-1: Notifications*

Name	**Contact Information**
Timothy Schneider, PE Project Manager	Phone: 585-226-5480 Email: timothy.schneider@dec.ny.gov
Bernette Schilling, PE Regional Hazardous Waste Remediation Engineer	Phone: 585-226-5315 Email: bernette.schilling@dec.ny.gov
Kelly Lewandowski, PE Site Control	Phone: 518-402-9553 Email: kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Elmira, Chemung County, New York and is identified as Section 99 Block [20-1] and Lot [74.2] and Section 99 Block 16 Lot 1.16 on the Chemung County Tax Map (and depicted in **Figure 2-1**). The site is an approximately 34-acre area and is bounded by vacant land to the north, Southern Tier Commerce Center (STCC) to the south, the Consolidated Rail Corp. property to the east, and South Main Street to the west (see **Figure 2-1** – Site Layout Map). The boundaries of the site are more fully described in Appendix A. The owner(s) of the site parcel(s) at the time of issuance of this SMP is Elmira City School District.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: parking lots, athletic fields, and academic buildings. The Site is zoned "Residential – A" and is currently a public high school. Site occupants include Elmira City School District personnel and students. Use includes typical activities associated with a secondary school, including academic classes and sporting events involving the congregation of students and the general public.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include residential and commercial properties. The properties immediately south of the Site include commercial/manufacturing properties; the properties immediately north of the Site include residential properties; the properties immediately east of the Site include the Consolidated Rail Corp. properties; and the properties to the west of the Site include residential properties.

2.2.2 Geology

A stratigraphic layer comprised of reworked native soils and fill material is located on the Site at a depth of approximately zero (0) to six (6) feet below ground surface (bgs) (thickness varies). That fill unit is composed of primarily of medium to fine sand with silt and medium to fine gravel and includes some red brick, concrete fragments, and wood debris.

Two (2) naturally-occurring continuous stratigraphic units underlie the fill unit. The upper unit is post-glacial outwash. This unit consists of gray-brown fine sand and sub-rounded to rounded coarse to fine gravel. The post-glacial outwash unit extends from approximately six (6) feet below grade to approximately thirty-eight (38) feet below grade.

The second unit is a glacio-lacustrine silt and clay. The unit is relatively impermeable and consists of soft, gray-brown silt and clay, and extends from approximately thirty-eight (38) feet to approximately seven-eight (78) feet below grade in undisturbed areas. The top of weathered bedrock underlies the lacustrine unit and overlays competent shale which dips slightly to the north.

A geologic cross section is shown in **Figures 2-2A, 2-2B,** and **2-2C** (plan view of cross-sections available in **Figure 2-3**). Site specific boring logs are provided in Appendix C

2.2.3 Hydrogeology

Previous investigations conducted for the EHS property indicate that the general groundwater flow direction in the local area is to the east in the overburden water bearing zone. Depth to groundwater is generally 15 to 20 feet. Two (2) production wells which provide non-contact cooling water are located to the south of the EHS building. Based on data provided by ECSD, the pumping capacity of each well is approximately six hundred (600) gallons per minute (gpm).

A groundwater contour map is shown in **Figure 2-4**. Groundwater elevation data is provided in **Table 2-1**. Groundwater monitoring well construction logs are provided in Appendix D.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

2.3.1 Site History

From the late 1880’s to the early 1970’s, the EHS property has been occupied by various industrial facilities:

- 1887 – 1909: B. W. Payne & Sons, manufacturer of high speed steam engines;
- 1909 – 1935: Morrow Manufacturing, manufacturer of drill chucks, machine parts and tools;
- 1935 – 1937: Elmira Precision Tool Company, manufacturer of typewriter parts for Remington Rand; and

- 1936 – 1972: Remington Rand, manufacturer of typewriters and adding machines.

From 1974 to 1977, Westinghouse Electric Corporation (Westinghouse) occupied approximately ten (10) acres of the EHS property south of the City of Elmira-Town of Southport line, primarily for warehousing. On 21 April 1977, Chemung County Industrial Development Agency conveyed the SHS Property to Westinghouse and that same day Westinghouse conveyed that property to ECSD. SHS was constructed in 1979.

2.3.2 Previous Investigations

Previous investigations at the EHS property include:

- Soils and Foundation Study, Southside Recreation and Education Facility, Elmira, New York, Empire Soils Investigations, Inc. 13 May 1977.
- Subsurface Environmental Assessment Report, 777 South Main Street to Parkside Drive, Matrix Environmental Technologies, 9 November 1998.
- May-October 2000 NYSDEC Sampling Report, Southside High School and Adjacent Properties, City of Elmira, Chemung County, NYSDEC, 30 September 2001.
- Health Consultation Report, Southside High School, City of Elmira, Chemung County, NYSDOH, 30 September 2003.
- IIWA Report on Groundwater Chlorinated Solvent Investigation, Southside High School and Adjacent Properties, City of Elmira, Chemung County, NYSDEC, 1 March 2004.
- Soils Characterization Report, Elmira City School District, Southside High School, Elmira, New York. Sterling Environmental. July, 2008.
- Report for Soil Investigation beneath Addition to Cafeteria, Elmira City School District, Southside High School, Elmira, New York. Sterling Environmental. January, 2013.
- Vapor Intrusion Assessment and Mitigation Report Elmira High School, Former Sperry Remington Site – North Portion, NYSDEC Project 808022, Geosyntec Consultants, October, 2014.
- Site Characterization Data Report, Former Sperry Remington Site – North Portion, NYSDEC Project 808022, Geosyntec Consultants, February, 2015.
- Site Characterization Work Plan Addendum #2, Former Sperry Remington Site – North Portion, NYSDEC Project 808022, Geosyntec Consultants, January, 2016.

In 1995, a fuel oil sheen was observed on Miller Pond east of the EHS property. Subsequent investigation by NYSDEC between 1995 through 1998 identified petroleum related chemicals in groundwater approximately fifteen (15) feet below grade extending from the EHS property to Miller Pond. Former fuel oil tanks located in the area of the current EHS gymnasium were considered a potential source. A remedial action (NYSDEC Spill #94-16668) was completed by NYSDEC between 2000 and 2011 with the installation and operation of oxygen-injection systems to stimulate aerobic biodegradation of petroleum in subsurface soil and groundwater as follows:

- 2000 – 2001: a forty-three (43) point oxygen-injection system (OIS) operated east of the EHS gymnasium;
- 2003 – 2006: a twenty-four (24) point OIS operated in the southern portion of the EHS football field; and
- 2006 – 2011: a seventeen (17) point OIS operated northeast of the EHS building.

Subsequently NYSDEC conducted an environmental investigation of soil, groundwater, surface water and sediment at EHS in 2000 (NYSDEC, 2001). The New York State Department of Health (NYSDOH) initiated a cancer study based on a concern of parents regarding a perceived unusual number of testicular cancer in past and present students at EHS at that time, which was brought to its attention by the NYSDEC. NYSDOH evaluated all available information on cancer in students at EHS, collected indoor air samples from inside EHS and issued a Health Consultation Report in September 2003 (NYSDOH, 2003). The 2003 NYSDOH Health Consultation Report stated:

"Based on ATSDR's public health hazard category classification, the environmental conditions at Southside High School pose no apparent health hazard. This classification is used because average levels of contaminants in surface soils do not exceed public health comparison values. Although a few samples exceed health comparison values, people are unlikely to be exposed frequently to soil at these locations and the associated health risks are unlikely to be significant. Nevertheless, because average levels of total PCBs exceed typical background levels and average levels of carcinogenic PAHs are somewhat below the upper range of background levels, exposures to these contaminants at Southside High School may be greater than those typically experienced from soil. Students, faculty, staff and the community are not currently being exposed to subsurface soil, although it contains chemicals at levels exceeding public health comparison values."

In June 2009, ECSD prepared the Environmental Management Plan (EMP) in response to a request from the New York State Education Department (NYSED) to formalize environmental management operations and practices at EHS. NYSDEC and NYSDOH provided technical assistance to NYSED in the development and review of the EMP, which was submitted to prevent construction personnel and the general community from exposure to potential residuals of COPCs in soil, groundwater and soil vapor. The components of the EMP included a Soil Management Plan, Indoor Air Quality Action Plan, Groundwater Management Plan, and an Operations, Monitoring and Maintenance Plan for Engineering Controls. The following presents a brief description of each component:

- The Soil Management Plan addressed issues relating to the management of soil during future development or construction on the property; proposed and existing cover systems (engineering controls) used to prevent human contact with potential residuals in soil and to reduce the potential for migration with surface water runoff from the EHS property; and guidelines and procedures established for management of soil/fill and cover systems, including site preparation, excavations, underground storage tank (UST)/buried drum handling, soil characterization procedures, and composite soil sampling.

- The Indoor Air Quality Action Plan addressed issues and conditions contributing to indoor air quality in the Main Building and establishes procedures to monitor differential pressure between indoor air and sub-slab and program established for sampling and evaluating indoor air and sub-slab vapor in the Main Building. Past, present and future steps for protection of indoor air quality include positive pressurization by the heating, ventilation and air conditioning (HVAC) system, sub-slab depressurization, vapor barriers, air and vapor monitoring and chemical storage.

- The Groundwater Management Plan addressed groundwater monitoring well maintenance and sampling and provides guidelines for managing and handling groundwater encountered during excavations.

- The Operations, Monitoring and Maintenance Plan described engineering controls that have been implemented including a soil cover system, a vapor barrier system and sub-slab depressurization system. Procedures for inspecting, evaluating and maintaining those systems are also identified.

In March 2010, NYSDOH issued a Health Consultation Report (NYSDOH, 2010) that evaluated indoor and outdoor air quality as well as sub-slab vapor samples collected by ECSD in 2009. NYSDOH concluded that exposures to concentrations of volatile organic compounds (VOCs) in indoor air at EHS were not expected to be harmful to human health if the actions specified in the environmental management plan are implemented (i.e. operation of HVAC system in a positive-pressure mode). Given the detections of freon and chlorinated solvents in sub-slab vapor at various locations beneath the building, NYSDOH recommended continued operation of the building HVAC system for positive pressurization, continued routine monitoring of differential pressures between the sub-slab and building interior, additional evaluation of indoor air quality and pressure differentials in Room 127 of EHS, and adjustments to the HVAC system in the area of Room 127 to reduce concentration of trichloroethene (TCE) in indoor air to within background. ECSD continues to monitor indoor air quality and pressure differentials.

In June 2013, NYSDEC first contacted Unisys with information regarding the 2009 ECSD testing program and 2010 NYSDOH Health Consultation Report including historic demolition, construction and facility plans provided in digital form that NYSDEC had recently received from ECSD. In response, Unisys voluntarily conducted an initial assessment of HVAC operations at Room 127 of SHS in July 2013. The purpose of that evaluation was to assess the ability of the existing HVAC system to achieve positive building pressures and to evaluate the potential presence of select compounds, including TCE in Room 127 with the HVAC system in operating and non-operating mode. Initial differential pressure monitoring between the sub-slab and the building interior and exterior coupled with indoor and outdoor air sampling was completed under occupied conditions (HVAC in operation) and unoccupied conditions (HVAC not in operation) in August 2013 during the cooling (i.e., air conditioning) season. Differential pressure monitoring and air sampling were completed in December 2013 to reflect heating season HVAC conditions. Pressure differential testing results indicate that Room 127 was positively pressurized with respect to the subslab when the HVAC system was running in occupied mode (i.e. 7:00 AM to 3:30 PM). Outside of those times, there was little pressure difference between indoor air and the subslab. Chemical monitoring data indicate that operation of the HVAC system in occupied mode is responsible for reducing concentrations of TCE and cis-1,2-Dichloroethene (cis-DCE) in the indoor air in Room 127. As a result, Unisys recommended continued air sampling and differential pressure monitoring under occupied conditions to evaluate continued HVAC effectiveness in addressing vapor migration.

In October 2013, NYSDEC presented to Unisys Potential Areas of Concern (PAOCs) for the Site and provided corresponding historic plans and details depicting industrial waste facilities and operations from 1967 (Lancy, 1967). Portions of the 1967 Lancy report were initially provided to NYSDEC in 1988 (Dames & Moore, 1988). The PAOCs for the Site identified by NYSDEC based on previous investigations and prior industrial use of the property are summarized on **Table 2-2** and **Figure 2-5**.

A Site Characterization (SC) Work Plan was submitted to NYSDEC on 29 July 2014 with revisions made on 8 and 27 October 2014 and accepted by NYSDEC on 2 December 2014. SC activities included: industrial sewer inspection, soil and groundwater sampling, and sub-slab and indoor air sampling. Although substantially completed, SC activities are continuing at the time of the drafting of this interim SMP.

2.4 Remedial Action Objectives

Remedial Action Objectives have not been determined for the Site and will be provided in the SMP upon completion of the Decision Document.

2.5 Draft Conceptual Site Model

A conceptual site model (CSM) presents the current understanding of environmental conditions at a site, helps to identify data gaps, helps to focus data collection needs, and if warranted can ultimately support remedial decision making. A CSM is updated to reflect information and additional data collected during subsequent investigative activities associated with a site. The following sections summarize the nature and extent of COPCs detected in environmental media at the Site during Site Characterization activities and previous investigations.

2.5.1 Soil

Soil investigations at the Site were conducted by NYSDEC in 2000 (NYSDEC, 2001), by ECSD in 2009 and 2013 as part of construction of the K-Wing Science Addition (Sterling, 2009) and cafeteria expansion (Sterling, 2013), and by Unisys as part of Site Characterization in accordance with the AOC (Geosyntec, 2015a and 2016). COPCs for soils were identified by comparing analytical results to Restricted Residential Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Subpart 375, based on those environmental management strategies for soils presented in the EMP. COPCs for soil include metals, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). COPCs for soils are presented in **Table 2-3** for surface soils (0 to 6 inches below ground surface [bgs]), shallow subsurface soils (6 inches to 2 feet [ft] bgs) and deeper subsurface soils (> 2 feet bgs).

Detected concentrations of total PCBs based on the sum of detected Arochlors in Site soils have exceeded the Restricted Residential SCO of one (1) milligram per kilogram (mg/kg). Detected Arochlors include Arochlors 1248, 1254, 1260, and 1262. Of those, Arochlor 1248 was detected most frequently and tended to comprise the largest component where detected. Arochlor 1254 and Arochlor 1260 were detected with similar frequency. Arochlor 1254 was detected primarily in the vicinity of the athletic stands and the football field. Arochlor 1260 was detected primarily in the vicinity of the gymnasium and the rear parking lot. Arochlor 1262 was detected infrequently (in less than one per cent (1%) of samples) with detections only in the football field and west of the A-Wing.

PCBs have been detected above the Restricted Residential SCO in surface soils below the vegetated layer in an approximately 800 square foot area at the southwest portion of the football field and at single locations west of the A-Wing, south of the athletic stands, and east of the gymnasium. PCBs have been detected above the Restricted Residential SCO in shallow subsurface soils above two (2) feet bgs in the following areas, as depicted in **Figure 2-6**:

- An approximately 1,000 square foot area at the northwest corner of the tennis courts.
- An approximately 9,200 square foot area at the southeast portion of the football field, along with two smaller areas on the southwest portion of the field with estimated areas of 1000 and 300 square feet.
- Two areas at grassy area south of the athletic stands and west of the football field with approximate areas of 2,000 and 4,100 square feet.
- Two areas west of A-Wing with an estimated combined area of 1,200 square feet.
- Areas east of the gymnasium with an estimated combined area of 13,200 square feet.
- The east portion of the rear parking lot with an estimated area of 30,000 square feet.

The extent of total PCB concentrations above the Restricted Residential SCO in the areas described above decrease with depth as depicted on **Figure 2-6**. PCBs were not detected above the Restricted Residential SCO at depths greater than ten (10) ft bgs.

Temporary cover was installed in select areas as shown on **Figure 2-6** as part of Short Term Remedial Action to prevent potential exposure to surface and shallow subsurface soils in April 2015 (Geosyntec, 2015b). Potential exposure in areas not addressed by temporary cover (e.g. the football field) is mitigated by maintenance of well-established vegetative cover. A soil management area within which PCBs may be encountered during excavation is presented on **Figure 2-6**.

Polycyclic aromatic hydrocarbons (PAHs) were the only SVOCs detected in soil at concentrations above Restricted Residential SCOs. Those PAHs included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. As shown in **Figure 2-7**, detections of SVOCs that exceed the Restricted Residential SCOs were located on the football field, the athletic field, in the vicinity of the tennis courts, and beneath the main and rear parking lots. A soil management area within which SVOC COPCs may be encountered during excavation is presented on **Figure 2-7**.

Arsenic, copper, lead, manganese, mercury, and nickel are the metal COPCs detected above Restricted Residential SCOs, primarily in the rear parking lot. Metals exceedances are shown in **Figure 2-8**. A soil management area within which metal COPCs may be encountered during excavation is presented on **Figure 2-8**.

Constituents including cyanide, pesticides, and VOCs were not detected above Restricted Residential SCOs in any soil sample collected during Site Characterization in 2014. Those constituents are not considered to be COPCs for the Site.

A number of underground utilities including electrical, stormwater and sanitary sewer are present at the Site within the soil management areas shown on **Figures 2-6** through **2-8**. **Figure 2-9** presents the extent of the stormwater sewer system. A sprinkler system is present beneath the football field. Appendix E presents results an underground utility survey conducted on between 13 and 15 July 2015. Note that Appendix E is provided as a reference only and should not be used as a substitute for a professionally conducted utility location conducted prior to any ground-intrusive work.

2.5.2 Groundwater

Groundwater investigations at the Site have been conducted by NYSDEC as part of NYSDEC Spill #94-16668 (Matrix, 1998) and in later investigations of chlorinated solvents (NYSDEC, 2004) and by Unisys as part of Site Characterization in accordance with the AOC (Geosyntec, 2015a). COPCs for groundwater were identified by comparing the most recent groundwater analytical data to NYSDEC *Technical Operational Guidance Series (TOGS) 1.1.1* (NYSDEC, 1998). COPCs for groundwater are presented in **Table 2-4** with the most recent analytical results for groundwater samples collected on EHS property. COPCs for groundwater include lead, PCBs, SVOCs and VOCs.

Figure 2-10 presents the extent of COPC exceedances in groundwater. TCE was detected above groundwater standards in groundwater grab samples collected just outside the EHS F wing. TCE, Freon 113, and acetone have been detected above groundwater standards in the area east of the gymnasium. PAHs, benzo(a)anthracene and chrysene, were detected at concentrations above groundwater standards in groundwater grab samples collected just outside of the gymnasium and swimming pool. Potentially suspect detections of PCBs above groundwater standards have been identified in the area east of the gymnasium and southeast of the football field. PCBs in groundwater are under further investigation pursuant to the AOC.

2.5.3 Soil Vapor and Indoor Air

NYSDEC and NYSDOH conducted investigations at EHS in 1997 and 2000 to evaluate whether vapor intrusion of VOCs was occurring and whether vapor intrusion could affect indoor air quality at EHS. Investigation results from this work indicated VOCs were present below EHS, but were not considered to be a concern for indoor air quality at the school because exposure at the reported levels in indoor air were not expected to be a health concern (NYSDOH 2003). The EMP prepared by ECSD in 2009 contained an Indoor Air Quality Action Plan component of the EMP that included:

- A program to monitor differential air pressure above and below the sub-slab of the building;
- A program to sample and evaluate indoor air and sub-slab vapor;
- Provisions for installation of sub-slab depressurization systems in the building during renovation (gymnasium) and new construction (science addition, cafeteria addition); and
- Provisions to use the building heating, ventilation and air conditioning (HVAC) system to reduce the potential entry of sub-slab vapors into the building by maintaining positive differential pressure between the indoor and sub-slab air during periods when the building is occupied.

In March 2010, NYSDOH issued a Health Consultation Report (NYSDOH, 2010) that evaluated historic indoor and outdoor air quality results as well as sub-slab vapor samples collected by ECSD in 2009. NYSDOH concluded that exposures to concentrations of VOCs in indoor air at EHS were not expected to be harmful to human health if the actions specified in the EMP are implemented (i.e. operation of HVAC system in a positive-pressure mode). NYSDOH recommended continued operation of the building HVAC system for positive pressurization, continued routine monitoring of differential pressures between the sub-slab and building interior, additional evaluation of indoor air quality and collection of pressure differential data in Room 127 of EHS, and modifying HVAC system operation in the area of Room 127 to reduce any concentration of TCE in indoor air. To date, ECSD has continued to operate the HVAC system during periods of building occupancy and continues to monitor indoor air quality and collect pressure differential data. Sub-slab depressurization (SSD) systems were installed during construction of the K-Wing Science Addition in 2009, renovation of the gymnasium in 2010 and construction of a cafeteria addition in 2013 (See “Institutional and Engineering Controls,” Section 3).

In July 2014, indoor air samples, sub-slab vapor samples, and high volume sampling (HVS) were collected by Unisys at twenty-three (23) locations in the EHS building (see **Figures 2-11** through **2-14**) and outdoor air samples were collected at three (3) locations. HVS testing consisted of extracting and sampling soil vapor at a high flow rate (hundreds or thousands of liters per minute) over a period of time (typically 30 to 60 minutes). Analytical results are presented in **Table 2-5** and **Figures 2-11** through **2-14**. Non-detect results have been omitted from **Table 2-5** to allow for a streamlined presentation of data. Overall, air sampling analytical data are similar to those obtained by ECSD in the 2009 vapor intrusion sampling program (Sterling, 2009). With respect to HVS results, in general the concentration of VOCs in the second HVS sample is less than the sub-slab vapor sample or initial HVS sample. This is likely attributable to increased dilution of the HVS sample by indoor air that leaks across the slab as the sub-slab capture zone expands outward. It may also reflect a decrease in concentration of VOCs in sub-slab vapor with distance from the extraction points. None of the HVS pairs show a substantial upward trend in concentrations; a fact that suggests the measured HVS concentrations are representative of actual conditions in the area tested.

New York State's "Guidance for Evaluating Vapor Intrusion in The State of New York" (NYSDOH, 2006) (VI Guidance) includes Decision Matrices that serve as a risk management tool to "identify the minimum actions recommended to address current and potential exposures related to soil vapor intrusion." Currently, seven (7) VOCs have been assigned to one (1) of two (2) matrices. The VOCs include (Memorandum: G. Litwin to D. Desnoyers, 2007):

Volatile Chemical	Soil Vapor/Indoor Air Matrix
carbon tetrachloride	Matrix 1
trichloroethene (TCE)	Matrix 1
vinyl chloride	Matrix 1
1,1-dichloroethene	Matrix 2
tetrachloroethene (PCE)	Matrix 2
cis-1,2-dichloroethene (cis-1,2-DCE)	Matrix 2
1,1,1-trichloroethane	Matrix 2

New York State has also developed air guideline values for several chemicals including TCE (5 $\mu g/m^3$), PCE (100 $\mu g/m^3$) and Methylene Chloride (60 $\mu g/m^3$) "to help guide decisions about the nature of efforts to reduce exposure to the chemical" (NYSDOH, 2006). These guidance tools were considered when evaluating the sampling results presented in **Table 2-5**. The fact that the concentration of a particular VOC is below a guideline value or Matrix value does not mean that practical and reasonable actions should not be taken to reduce exposures to those chemicals. **Table 2-6** provides a comparison of the measured indoor air and sub-slab concentrations of each of the seven (7) VOCs identified above to the respective recommended action associated with those results. Carbon tetrachloride, vinyl chloride, and 1,1-Dichloroethene were not detected in sub-slab vapor or HVS samples. PCE and 1,1,1-Trichloroethane were detected in sub-slab vapor and HVS samples at low concentrations but were not detected in indoor air samples. Consistent with NYS Soil Vapor/Indoor Air Matrix 1 and 2, no further actions were recommended to address the vapor intrusion potential of those VOCs.

TCE and cis-1,2-DCE were detected in sub-slab vapor and HVS samples and in indoor air samples. None of the indoor air detections of TCE exceeded the NYSDOH guideline value of five (5) μg/m^3. TCE was present in sub-slab samples at concentrations greater than two hundred fifty (250) μg/m^3 in the F wing of the building at five (5) locations (Room 130, Room 127, Room 125, Room 124 and the Hallway outside of the Guidance offices). Indoor air data for TCE from those locations ranged from 0.18 μg/m^3 to 1.9 μg/m^3. TCE was present in sub-slab samples at lesser concentrations (~ 10 μg/m^3) at three (3) locations (Room 111, Room 145 and Room 106), but not detected in the corresponding indoor air samples. Based on the observed distribution of TCE in indoor air and sub-slab samples, mitigation was recommended to address the vapor intrusion potential of TCE in the area where sub-slab TCE concentrations exceed two hundred fifty (250) μg/m^3.

cis-1,2-DCE is a daughter product of TCE degradation and is often found at locations where concentrations of TCE are present. cis-1,2-DCE was present in sub-slab vapor samples collected at Room 127 and Room 130 at concentrations of two thousand (2,000) μg/m^3 and eighty-three (83) μg/m^3, respectively. cis-1,2-DCE was present in the indoor air sample from Room 127 at a concentration of twenty-five one hundredths (0.25) μg/m3, but not detected in the indoor air sample from Room 130. cis-1,2-DCE was not detected in any other samples. Mitigation was recommended to address the vapor intrusion potential of cis-1,2-DCE in the area where sub-slab concentrations exceed one thousand (1,000) μg/m^3.

In response to those data and subsequent analysis, Unisys installed a SSD system in the F-Wing of EHS in August 2014 (See "Institutional and Engineering Controls," Section 3). Two sets of air samples were collected to assess the impact of SSD system operation on TCE concentrations in Room 127 and the Guidance Office. One set of samples was collected from 19 to 20 August 2014 to measure TCE concentrations in indoor air when the HVAC system was off, and a second set was collected on 20 August 2014 to measure TCE concentrations in indoor air when the HVAC system running in occupied mode. Samples were collected using the same techniques and equipment and at the same locations used previously. TCE concentrations in Room 127 indoor air decreased from 1.9 μg/m^3 prior to mitigation to 0.21 μg/m^3 afterwards, and TCE concentrations in Room 129 dropped from 0.44 μg/m^3 to non-detect (**Table 2-7**). Those results demonstrated the effectiveness of the SSD system at substantially reducing TCE concentrations in indoor air. Unisys has since collected indoor air samples in Room 127 with the HVAC system running occupied mode and unoccupied mode during the heating and cooling seasons in December 2014, September 2015, and December 2015. As shown on **Table 2-7**, those results confirm the effectiveness of the F-Wing SSD system. Plans for future monitoring and sampling are presented in Section 4.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since COPCs are present in media at the Site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix F) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs have been developed to: (1) implement, maintain and monitor EC systems; and (2) prevent future exposure to COPCs present in media at the Site. Adherence to these ICs will be implemented under this interim SMP. These ICs are:

- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chemung County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;

- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement;
- The potential for vapor intrusion must be evaluated for any buildings developed on the site, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

3.3.1 Permanent Cover (if applicable)

Potential exposure to COPCs that may be present in soil at the Site is to be prevented by existing and proposed cover systems at the Site. Existing and proposed cover systems include:

- Soil - minimum of twenty-four (24) inches of vegetated soil cover;
- Asphalt - a minimum of six (6) inches of asphalt (including subbase material) in areas containing roads, sidewalks, and parking lots, or;
- Concrete - a minimum of six (6) inches of concrete (including subbase material) in areas containing roads, sidewalks or parking lots constructed of concrete in lieu of asphalt.

The Excavation Work Plan (EWP) provided in Appendix F outlines the procedures required to be implemented in the event the cover system is to be breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Whenever possible, major ground intrusive activities should be conducted when the High School is not in session. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix G.

3.3.2 Temporary Cover

Temporary cover was installed at the Site between 29 March and 3 April 2015 as part of Short-Term Response Action designed and implemented to temporarily address polychlorinated biphenyls (PCBs) analyzed to be present in shallow soils (0 to 2 feet below ground surface [bgs][1]) in several unpaved areas of the Site (Geosyntec, 2015b). **Figure 3-1** presents the locations of the temporary cover. Temporary cover consisted of non-woven geotextile and approximately twelve (12) inches of hardwood mulch. Mulch was kept in place by wood frames secured by rebar. Ground surface in each area was prepared by removal of angular or sharp objects. After surface preparation, geotextile was used to cover existing ground surface and held in place with landscaping staples. An approximate twelve-inch (12-in) high border was prepared for each area using landscaping timbers, anchored in place using rebar as ground-spikes. Each area was completed by adding an approximate twelve-inch (12-in) hardwood mulch layer. After completion, the surrounding area was broom swept /raked to remove mulch from outside the completed area. Procedures for the inspection of temporary cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP.

3.3.3 Sub-slab Vapor Mitigation Systems

Sub-slab vapor mitigation systems restrict the movement of sub-slab vapors into interior space. ECs for sub-slab vapor mitigation in use at EHS include vapor barriers and SSD systems. A vapor barrier is a low-permeability layer installed beneath the building slab to reduce transport of vapors through potential cracks. A SSD system uses a blower to pull air from the soil below the floor slab at one or more “suction points” with the goal of creating negative pressures below the buildings. These negative pressures cause indoor air to flow down from the building interior into the soil through cracks or opening in the slab, rather than allowing vapors to flow up from the ground into the building, thus eliminating or minimizing the potential for vapor intrusion.

While SSD is the dominant mechanism for vapor intrusion mitigation at the location of the suction points, sub-slab venting (SSV) will also occur at the edges of the SSD system radius of influence (ROI). The SSV process involves air being drawn in along the edges of the SSD influence zone. This “make-up” air provides a dilution effect which can reduce sub-slab vapor concentrations.

Small areas of the area to be mitigated may not be within the ROI of any of the suction points; however, the area at the periphery of the SSD system will be operating as an SSV, thus dilution of sub-slab VOC concentrations will be occurring in this area. Finally,

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[1] Below ground surface is interpreted as below vegetative cover.

because SSD systems typically decrease sub-slab vapor concentrations through dilution, mitigation objectives are still likely to be met as long as negative pressure objectives are met over the majority of the slab area (USEPA, 1993).

Sub-slab vapor mitigation systems were installed during construction of the K-Wing Science Addition in 2009, during renovation of the gymnasium in 2010, during construction of a cafeteria addition in 2013, and an Interim Remedial Measure (IRM) during Site Characterization in 2014.

Procedures for operating and maintaining the SSD systems are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). As built drawings, signed and sealed by a professional engineer, are included in Appendix H – Operations and Maintenance Manual. **Figure 3-2** shows the location of the SSD systems for the Site. The following sections present details for each system including system location, system start date; system design information, components, materials, layout, and operating conditions.

3.3.3.1 <u>K-Wing Science Addition</u>

A sub-slab vapor mitigation system was installed as part of the construction of the 12,000 square foot K-Wing Science Addition on the east side of the EHS building in 2009. The system design is described in the Soil Vapor Mitigation Design Plan prepared by Sterling Consultants in February 2009 for ECSD and revised in April 2009 (Appendix 4C of the EMP, Sterling, 2009). The vapor mitigation system consists of a SSD system and a vapor barrier. The SSD system consists of a gas permeable layer consisting of a minimum of six (6) inches of crushed stone or crushed gravel. A collection plenum is installed in the gas permeable layer consisting of a 40-inch square void, the full thickness of the stone layer. The plenum is formed by six (6) 8 x 8 x 16-inch concrete blocks. The soil gas and any vapors enter the plenum space unobstructed, then enter a six (6) inch diameter solid wall fiberglass reinforced plastic pipe. This six (6) inch duct is connected by means of wet lay-up joints to a 90-degree elbow connected to a vertical riser passing through the slab, the interior of the addition and the roof of the addition. A U-tube pressure manometer is placed in this riser so that the vacuum exerted by the fan will be evident at the manometer whenever the fan is operating normally. A fan is mounted above the roof at the termination of the riser to create a negative pressure through the duct and system beneath the concrete slab. The exhaust is 44-inches above the roof of the building, is located above all eaves, is at least fifteen (15) feet above ground level, is at least ten (10) feet away from air intakes and is at least ten (10) feet from any openings that are less than two (2) feet below the exhaust point and is more than ten (10) feet from the adjoining EHS Main Building. As-built drawings of the K-Wing SSD system are provided in Appendix H.

The vapor barrier consists of six (6) mil polyethylene sheets overlapped a minimum of twelve (12) inches with Sikaflex-1A sealant applied a minimum of four (4) inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

3.3.3.2 Gymnasium

A sub-slab vapor mitigation system was installed in the EHS gymnasium as part of a remodeling project conducted in 2010 (Sterling, 2011). The vapor mitigation system consists of a vapor barrier and a SSD system. The Gymnasium SSD consists of a stone gas permeable layer with a plenum constructed of concrete blocks within the permeable layer and a vent duct. The vent duct rises from the plenum and is connected to the exhaust fan that creates a negative pressure within the permeable layer. The vapor barrier consists of Stego Wrap™ ten (10) mil polyolefin sheets overlapped a minimum of twelve (12) inches with Sonoclastic™ NP1 caulk applied a minimum of four (4) inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

3.3.3.3 *Cafeteria Addition*

A sub-slab vapor mitigation system was installed as part of construction of an addition to the EHS cafeteria (Sterling, 2014). The vapor mitigation system consists of a vapor barrier and a SSD system. The Cafeteria Addition SSD consists of a stone gas permeable layer with a plenum constructed of concrete blocks within the permeable layer and a vent duct. The vent duct rises from the plenum and is connected to the exhaust fan that creates a negative pressure within the permeable layer. The vapor barrier consists of Stego Wrap™ ten (10) mil polyolefin sheets overlapped a minimum of twelve (12) inches with Sonoclastic™ NP1 caulk applied a minimum of four (4) inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

3.3.3.4 *F-Wing*

A sub-slab vapor mitigation system was installed in the EHS F-Wing by Unisys in August 2014 following a vapor intrusion (VI) assessment as part of Site Characterization (Geosyntec, 2015a). The SSD system includes four (4) suction points connected through a manifold to a riser pipe that extends through the roof. Suction points are located in Rooms 124, 126, 127, and 130 of the EHS F-Wing. Suction points were located near interior walls to avoid open space and provide vertical supports for the riser pipes. Suction point riser pipes were joined via a horizontal conveyance pipe manifold above the suspended ceiling on the first floor and then extended vertically via a single riser pipe through the first floor ceiling, a second floor classroom (Room Number 234) and to the roof. A roof mounted Obar GBR 76 SOE fan is connected to the piping network and is used to create a sub-slab vacuum field below the building. As-built drawings are provided in Appendix H.

The F-Wing SSD system is designed to operate without regular maintenance or monitoring. The system blower is connected to the school district central monitoring system which will alert district personnel if the blower fails. If a blower failure or other problems with the SSD system occur, the school district has been instructed to alert Unisys for repair. See “Operations and Maintenance Plan” in Section 5 for further details.

Procedures for operating and maintaining the sub-slab depressurization system are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). As built drawings, signed and sealed by a professional engineer, are included in Appendix H – Operations and Maintenance Manual. **Figures 3-1 and 3-2** shows the location of the ECs for the site.

3.3.4 HVAC Operations (Positive Pressure System)

During its operation, the HVAC system pressurizes the interior space of the EHS building relative to sub-slab and outdoor pressure and creates a pressure gradient that tends to force interior air through any gaps in the floor slab. The HVAC system will be operated in occupied mode during times when the EHS building is expected to be occupied, typically 7:00 AM to 3:30 PM Monday through Friday.

3.4 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.4.1 Cover

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

3.4.2 Sub-Slab Vapor Mitigation System

Active sub-slab vapor mitigation systems will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that a sub-slab vapor mitigation system may no longer be required, a proposal to discontinue the system will be submitted by the remedial party to the NYSDEC and NYSDOH.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix I – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;

- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

Sub-slab depressurization systems (SSDs) have been installed in the gymnasium, the K-Wing Science Addition, the cafeteria addition and the F-wing of EHS to mitigate the vapor intrusion pathway (see Appendix H). No other areas of the school building require mitigation or monitoring to address vapor intrusion. Monitoring of the SSDs has been performed on a regular basis since the systems have been installed. Differential pressure monitoring has demonstrated that the SSDs have continuously maintained a depressurized condition in the sub-slab in their vicinity, and that the operation of the school HVAC system during periods of building occupation, though not a necessary vapor intrusion control, enhances the efficacy of the SSDs (See Appendix H). Post-mitigation chemical monitoring results demonstrate that the SSDs effectively control the potential for vapor intrusion related exposures to volatile organic compounds at the school (see Appendix H). Ongoing chemical and differential pressure monitoring of the SSD systems is no longer needed to demonstrate their efficacy, but electronic monitoring of the SSD fan operation will be performed on a continuous ~~routine~~ basis, as identified in **Table 4-1** Remedial System Monitoring Requirements and Schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The SSD systems are designed (and have been demonstrated) to operate without the need for routine maintenance. The SSD collection pipes and vent stacks in the F-wing system are either embedded below the building slab, within interior walls, or within the plenums above the drop ceilings. They are protected from damage that could occur to exposed components; therefore, visual inspection of the F-wing system is not needed on a routine basis. Most of the SSD components are embedded within the floor or above the roof, but some sections of the exhaust stacks are exposed and could potentially be subject to accidental damage. Cleaning and maintenance activities throughout the school are performed daily by a team of full-time facilities maintenance personnel who have been instructed to look for and report any damage to the SSD components to the head of Buildings and Grounds. Unscheduled inspections and/or sampling may take place when a suspected failure of an SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. SSD system components to be monitored include, but are not limited to, the components included in **Table 4-1** below.

Table 4-1 – Remedial System Monitoring Requirements and Schedule

Remedial System Component	**Monitoring Parameter**	**Operating Range**	**Monitoring Schedule**
SSD Fan Motors	Verification of Fan Operation	Fan motor running	Continuous, real-time via links to HVAC computerized control system

If any equipment readings indicate that a fan motor is no longer functioning, maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.3.2 Remedial System Sampling

A sufficient number of post-mitigation pressure field and indoor air samples have been collected to clearly verify the efficacy of the SSD systems. Therefore, as long as the real-time monitoring of the SSD fans demonstrates that the motors continue to function, routine sampling of the SSD systems is not necessary.

In the event that replacement of an SSD fan or other repairs to the SSD system are needed, cross-slab differential pressure measurement(s) will be obtained from existing sub-slab sampling ports associated with the SSD to verify that the necessary repairs have reestablished the pressure field below the VI mitigation area.

The differential pressure measurements will be obtained using the existing Magnehelic Gauges installed in the Gymnasium, Science Wing and Cafeteria SSDs or with a DG-700 (or equivalent) differential pressure meter temporarily connected to a sub-slab monitoring port in room 127 of the F Wing.

No remedial system sampling is proposed, as air sampling following installation of the sub-slab depressurization system indicated the system is meeting design objectives.

4.4 Post-Remediation Media Monitoring and Sampling (TBD)

Post-remediation media monitoring and sampling requirements will be determined after selection of a final remedy for the Site.

4.4.1 Soil Vapor Intrusion and Indoor Air Sampling

Multiple rounds of soil vapor intrusion sampling have been performed to assess the performance of the remedy. Chemical and pressure monitoring results demonstrate that the SSD systems are effectively addressing the VI potential at the school. Therefore, routine VI monitoring is no longer needed as long as the SSD systems remain in operation.

4.4.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix I - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the SSD systems; and
- Will be updated periodically to reflect changes in site conditions or the manner in which the SSD systems are operated and maintained.

Further detail regarding the Operation and Maintenance of the SSD systems is provided in Appendix J - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Remedial System (or other Engineering Control) Performance Criteria

5.3 Operation and Maintenance of the SSD systems

The following sections provide a description of the operations and maintenance of the following SSD systems:

Gymnasium

Science Addition

Cafeteria

F-Wing

Cut-sheets and as-built drawings for each system are provided in Appendix H - Operations and Maintenance Manual.

5.3.1 System Start-Up and Testing

System start-up and testing has already been performed at each SSD system and no significant changes to the systems are anticipated. Therefore additional system start-up and testing is not necessary.

If the system goes down or significant changes are made to the system and the system must be restarted the procedures described in Section 5.3.2 will be followed.

5.3.2 Routine System Operation and Maintenance

The SSD systems are designed to run continuously without adjustments and do not require routine maintenance.

5.3.3 Non-Routine Operation and Maintenance

The only system components with moving parts subject to periodic failure are the SSD fan motors. If a fan fails, the electronic monitoring system will immediately send an alert to EHS maintenance personnel. Thereafter, the cause of the failure will be determined and, if necessary, the fan will be replaced in a timely fashion. In the event that a fan motor needs replacement, it will either be replaced in kind, or with a model offering similar flow and vacuum performance. Once the new fan is operational, cross-slab differential pressure measurement(s) will be obtained from existing sub-slab sampling ports associated with the SSD to verify that the necessary repairs have reestablished the pressure field below the VI mitigation area. The differential pressure measurements will be obtained using the existing Magnehelic Gauges installed in the Gymnasium, Science Wing and Cafeteria SSDs or, in the F-Wing, with a DG-700 (or equivalent) differential pressure meter temporarily connected to a sub-slab monitoring port.

In the event that an SSD vent stack develops a mechanical break, the broken segment of the stack will be replaced with material of similar diameter and construction and will be tested for leaks after it has been repaired.

In the event any of the real-time SSD electronic monitoring components fail, the component will be replaced in a timely fashion with an equivalent device.

The school district has copies of all SSD system as-built diagrams for reference in the event that replacement of a system component is necessary.

5.3.4 System Monitoring Devices and Alarms

Each SSD system is equipped with an electronic warning device~~s~~ connected to the school's HVAC computer control program that sends an alarm message whenever the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

6.0 REPORTING REQUIREMENTS

6.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix I. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of **Table 7-1** and summarized in the Periodic Review Report.

Table 7-1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

6.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning on the 22nd of January in the year following approval of this interim SMP by the Department. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix A. The report will be prepared in accordance with NYSDEC's DER-10. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.

- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.

- Data summary tables and graphical representations of ~~contaminants of concern~~ COPCs by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS^{TM} database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

6.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State~~]~~ will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*

- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*

- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*

- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*

- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*

- *The engineering control systems are performing as designed and are effective;*

- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and*

- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, ___________________, of _______________, am certifying as Owner's/Remedial Party's Designated Site."

"I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, ______________________, of ___________________________, am certifying as Owner/Owner's Designated Site Representative for the site."

- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*

- *The assumptions made in the qualitative exposure assessment remain valid.*

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.0 REFERENCES

Dames & Moore, 1988, Preliminary Site Assessment, Remington Rand Plant, City of Elmira, Chemung County, New York.

Geosyntec Consultants, Inc, 2015a, Site Characterization Data Report, Former Sperry Remington Site – North Portion, NYSDEC Project 808022, February 2015.

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Lancy Laboratories, Inc., 1967, Final Engineering Report and Description of Proposed Waste Treatment Installation.

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NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

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NYSDOH, 2003, Health Consultation, Southside high School in the City of Elmira, Chemung County, New York.

NYSDOH, 2006, Guidance for Evaluating Vapor Intrusion in the State of New York.

NYSDOH, 2010, Letter Health Consultation: Evaluation of Exposure Related to Soil Vapor Intrusion Mitigation Verification – December 2009, Southside High School, Elmira, Chemung County, New York.

Sterling Environmental Engineering, P.C., 2009, Elmira City School District, Southside High School, Elmira, New York, Environmental Management Plan.

Sterling Environmental Engineering, P.C., 2011, Elmira City School District, Southside High School, Elmira, New York, Environmental Management Plan.

Sterling Environmental Engineering, P.C., 2013, Elmira City School District, Southside High School, Elmira, New York, Environmental Management Plan.

Sterling Environmental Engineering, P.C., 2014, Elmira City School District, Southside High School, Elmira, New York, Environmental Management Plan.

Sterling, see Sterling Environmental Engineering, P.C.

TABLES

TABLE 2-1
MONITORING WELL NETWORK

Former Sperry Remington - North Portion
Elmira, New York

Well ID	Northing	Easting	Diameter (inches)	TOC Elevation [ft amsl]	DTB [ft bTOC]	DTW [ft bTOC]	DTP [ft bTOC]	GW Elevation [ft msl]
MW-7	753928.0	762705.5	3/4	852.47	13.3	Dry (>13.3)	ND	<839.17
MW-8	754022.5	762648.8	2	853.73	17.8	15.36	ND	838.37
MW-9	754165.8	762571.7	2	853.90	20.4	15.64	ND	838.26
MW-10	754303.1	762480.5	2	853.13	20.1	15.2	ND	837.93
MW-11D	754704.9	762292.0	2	855.07	78.1	18.71	ND	836.36
MW-11S	754699.6	762292.8	2	854.74	21.1	17.08	ND	837.66
MW-12	754101.4	762480.3	2	854.74	19.5	16.27	ND	838.47
MW-13	754234.0	762356.8	2	854.80	22.0	16.11	ND	838.69
MW-15D	754148.2	762119.5	2	855.75	76.1	18.71	ND	837.04
MW-15S	754149.2	762124.6	2	855.72	17.8	16.1	ND	839.62
MW-16	754439.3	761973.8	2	854.89	13.5	Dry (>13.5)	ND	<841.39
MW-30	754097.6	762562.4	2	853.44	17.9	15.09	ND	838.35
MW-31	754158.9	762536.2	2	853.75	18.0	15.43	ND	838.32
MW-32	754284.0	762491.8	2	852.75	18.0	15.42	ND	837.33
MW-33	754293.7	762456.4	2	853.89	19.4	15.95	15.94	837.94
MW-34	754327.4	762470.8	2	853.69	19.4	15.9	ND	837.79
MW-36	754326.3	762280.8	2	855.66	19.0	16.99	ND	838.67
MW-37	754294.1	762371.2	2	854.55	18.7	16.01	ND	838.54
MW-38	754419.6	762398.3	2	854.86	19.9	17.02	ND	837.84
MW-39	754295.3	762202.4	2	854.87	24.6	15.6	ND	839.27
MW-40	754360.9	762363.4	2	854.90	24.4	16.67	ND	838.23
MW-41	754348.4	762550.5	2	858.74	27.3	21.17	ND	837.57

Notes:

TOC ft amsl: top of casing feet above mean seal level
ft bTOC: feet below top of casing
ft msl: feet mean sea level
TOC: top of inner casing
DTB: depth to bottom
DTW: depth to water
DTP: depth to product
ND: free product not detected in monitoring well
Northings and Eastings presented in State Plane NAD83 New York Central, coordinate units are feet

GW: groundwater
Water levels measured on 13 November 2014
Vertical datum is North America Vertical Datum 1988

TABLE 2-2
Potential Areas of Concern Identified by NYSDEC
Former Sperry Remington Site – North Portion
Elmira, Chemung County, New York

Potential Area of Concern[1]	**Description**	**NYSDEC Characterization**
AOC-1	Sub-slab vapors and Indoor Air Quality	
AOC-1A	Contaminated Sub-Slab Vapors	• Delineation of Extent • Preferential Pathways o Utilities o Storm / Sanitary Sewer o Steam Tunnels
AOC-1B	Indoor Air Quality	• Delineation of Extent • Monitoring • Engineering Controls o HVAC o Sub-Slab Depressurization o Slab Integrity
AOC-2	Pre-1979 Combined Industrial/Storm Sewer	• Structure / Integrity / Contents / Release • Extent • Collection of Surface & Subsurface Contaminants
AOC-2A	18” Clay Pipe at SE Property Corner	Structure / Integrity / Contents / Release o Extent
AOC-2B	Drywell at SE Property Corner	Structure / Integrity / Contents / Release o Extent
AOC-2C	Drywell Near Building 49	Structure / Integrity / Contents / Release o Extent
AOC-2D	Manhole SW-73 Near Building 28A	Structure / Integrity / Contents / Release o Extent
AOC-2E	Waste Pit near Building 44	Structure / Integrity / Contents / Release o Extent
AOC-3	1979 Storm Sewer	Structure / Integrity / Contents / Release Collection of Surface & Subsurface Contaminants
AOC-3A	1979 Drywell Field	Structure / Integrity / Contents / Release Collection of Surface & Subsurface Contaminants
AOC-4	Earthen Waste Pits near SSHS Gym and Pool	Structure / Integrity / Contents / Release Connection to Pre 1979 Combined Sewer Contaminated Soil Vapor

TABLE 2-2
Potential Areas of Concern Identified by NYSDEC
Former Sperry Remington Site – North Portion
Elmira, Chemung County, New York

Potential Area of Concern[1]	**Description**	**NYSDEC Characterization**
AOC-5	Sludge Tanks/Beds/Brick Pits near Building 64	Structure / Integrity / Contents / Release Connection to Pre 1979 Combined Sewer Contaminated Soil Vapor
AOC-6	Concrete Vaults	Structure / Integrity / Contents / Release Connection to Pre 1979 Combined Sewer Contaminated Soil Vapor
AOC-7	Drywell Structures	Structure / Integrity / Contents / Release
AOC-8	Westinghouse Transformer Spill near Building 28A	Nature & Extent of Release(s) PCB Contaminated Soils at locations B15 & FB7 Other PCB Containing Equipment During Westinghouse Site Operation
AOC-9	Oil Storage and Handling	Oil House Waste Oil Storage Quench Oil Reservoir Structure / Integrity / Contents / Release Connection to Pre 1979 Combined Sewer
AOC-10	Contaminated Subsurface Soils	Nature & Extent Delineation o PCBs at Locations B3, FB7 & B15 o VOCs at Location FB5 o Metals at Locations B24, B35, SS14, B42, B43 & B52 o SVOCs at Location FB6 o Oil Contaminated Soils at 1977 Empire Report Locations
AOC-11	VOC- and Petroleum-Impacted Groundwater	Nature & Extent Delineation o Potential Soil / Structure Sources
AOC-11A	Measured Oil Product at MW8-10 and MW-32	Extent Delineation Potential Soil / Structure Sources
MW-11B	PCBs at MW-41	Extent Delineation Potential Soil / Structure Sources
AOC-12	Plating, Heat Treatment and Tumbling Areas	Different Locations Over Period of Operation • Spill Collection & Storage Pits, Sumps, Tanks • Material/Chemical Storage & Waste Discharge Extent Delineation Potential Soil / Structure Sources

TABLE 2-2
Potential Areas of Concern Identified by NYSDEC
Former Sperry Remington Site – North Portion
Elmira, Chemung County, New York

Potential Area of Concern[1]	**Description**	**NYSDEC Characterization**
AOC-13	Metals Cleaning, Vapor Degreaser and Solvent Still	Different Locations Over Period of Operation • Spill Collection & Storage Pits, Sumps, Tanks • Material/Chemical Storage & Waste Discharge Characterization Extent Delineation Potential Soil / Structure Sources
AOC-14	Power Washer, Rust Prevention Dip Operation	Different Locations Over Period of Operation Solvent Emulsions • Spill Collection & Storage Pits, Sumps, Tanks • Material/Chemical Storage & Waste Discharge Extent Delineation Potential Soil / Structure Sources
AOC-15	Wire Pickling Area	Different Locations Over Period of Operation • Spill Collection & Storage Pits, Sumps, Tanks • Material/Chemical Storage & Waste Discharge Extent Delineation Potential Soil / Structure Sources
AOC-16	Machine Shop Area	Different Locations Over Period of Operation • Spill Collection & Storage Pits, Sumps, Tanks • Material/Chemical Storage & Waste Discharge Extent Delineation Potential Soil / Structure Sources
AOC-17	Possible Disposal Areas	Extent Delineation Potential Soil Sources

<u>Notes</u>

AOC – Area of Concern

NYSDEC – New York State Department of Environmental Conservation

1. AOCs for Southside High School and adjacent properties were identified by NYSDEC in a report dated 4 October 2013.

TABLE 2-3
COMPOUNDS OF POTENTIAL - SOIL
Former Sperry Remington Site - North Portion
Elmira, New York

Constituent Type	Sampling Depth (feet)	Constituent Name	Action Level*
SVOC	0 to 0.17	Benz(a)anthracene	1
		Benzo(a) pyrene	1
		Benzo(b)fluoranthene	1
		Dibenz(a,h)anthracene	0.33
		Indeno(1,2,3-c,d)pyrene	0.5
Metal		Copper	270
PCB		Total PCBs	1
SVOC	0.17-2	Benz(a)anthracene	1
		Benzo(a) pyrene	1
		Benzo(b)fluoranthene	1
		Benzo(k)fluoranthene	3.9
		Chrysene	3.9
		Dibenz(a,h)anthracene	0.33
		Fluoranthene	100
		Indeno(1,2,3-c,d)pyrene	0.5
		Phenanthrene	100
		Pyrene	100
Metal		Arsenic	16
		Barium	400
		Copper	270
		Lead	400
		Mercury	0.81
		Nickel	310
PCB		Total PCBs	1
SVOC	> 2	Benz(a)anthracene	1
		Benzo(a) pyrene	1
		Benzo(b)fluoranthene	1
		Chrysene	3.9
		Dibenz(a,h)anthracene	0.33
		Indeno(1,2,3-c,d)pyrene	0.5
Metal		Barium	400
PCB		Total PCBs	1
General Chemistry		Cyanide, Total	27

Notes:
* all values are in mg/kg
PCB - Polychlorinated biphenyl
SVOC - Semi volatile organic compound
VOC - Volatile organic compound

TABLE 2-4
COMPOUNDS OF POTENTIAL CONCERN - GROUNDWATER
Former Sperry Remington Site - North Portion
Elmira, New York

Analytical Group	**Constituent Name**	**TOGS 1.1.1**
VOC	1,1,1-trichloroethane	5
	Acetone	50
	cis-1,2-dichloroethene	5
	Freon 113	5
	Tetrachloroethene	5
	Trichloroethene	5
	Vinyl chloride	2
PCB	Arochlor 1248	0.9
Metal	Lead	50
SVOC	Benz(a)anthracene	0.002
	Chrysene	0.002

Notes:
All values are in micrograms per litre (µg/L)
PCB - Polychlorinated biphenyl
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
TOGS 1.1.1 - Technical Operational Guidance Series 1.1.1 (NYSDEC, 1998).
NYSDEC - New York State Department of Environmental Conservation

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Trichloroethene	Q	trans-1,2-Dichloroethene	Q	Freon 12	Q	cis-1,2-Dichloroethene	Q	Freon 113	Q	Freon 11	Q	Toluene	Q	PCE	Q	Styrene	Q	Propylbenzene	Q	o-Xylene	Q	m,p-Xylene	Q
Location	Sample ID																								
Hallway Near Main Entrance	SSHS-07-08-14-01-IA					4.4						1.4		5.3								0.56		1.6	
Hallway Near Main Entrance	SSHS-07-13-14-01-SS					2800												530							
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-1	9.8				1600								190						58		180		470	
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-2	17				1200																			
Room 130	SSHS-07-08-14-02-IA	0.51				17						1.5		2.5								0.38			
Room 130	SSHS-07-14-14-02-SS	7300		22		3100		83																	
Room 130	SSHS-07-14-14-02-SS-DUP	7200		22		2900		74																	
Room 130	SSHS-07-15-14-02-HVS-1	6700		23	J	820		120						23											
Room 130	SSHS-07-15-14-02-HVS2	3500				650		70																	
Room 127	SSHS-07-08-14-03-IA	1.9				16		0.25				1.6		2.3								0.43		1.2	
Room 127	SSHS-07-08-14-IAON-127	1.9				11		0.24				0.91		5								0.82		2.4	
Room 127	SSHS-07-13-14-03-SS	39000		170		1100		2000																	
Room 127	SSHS-07-16-14-03-HVS-1	28000		110	J	730		1500																	
Room 127	SSHS-7-16-14-3-HVS-1-DUP	28000		100	J	640		1500																	
Room 127	SSHS-07-16-14-03-HVS-2	20000		69	J	440		970																	
Room 125	SSHS-07-08-14-04-IA	0.28				10								1.8								0.42		1.2	
Room 125	SSHS-07-13-14-04-SS	390				3600																			
Room 125	SSHS-07-15-14-04-HVS1	310				2300																			
Room 125	SSHS-7-15-14-04-HVS-2	330				2600																			
Room 124	SSHS-07-08-14-05-IA	0.18				13000								1.7								0.41		1.2	
Room 124	SSHS-07-13-14-05-SS	2100				13																			
Room 124	SSHS-07-15-14-05-HVS1	2600				18000																			
Room 124	SSHS-07-15-14-05-HVS2	1600				5600																			
Room 122	SSHS-07-08-14-06-IA	0.17				9.9						1		1.9								0.59		1.6	
Room 122	SSHS-07-13-14-06-SS					12000																			
Room 122	SSHS-7-15-14-06-HVS-1					13000																			
Room 122	SSHS-7-15-14-06-HVS-2					12000																			
Room 120	SSHS-07-08-14-07-IA					6.5						1		1.4								0.33		1	
Room 120	SSHS-07-14-14-07-SS					18000																			
Room 120	SSHS-7-15-14-07-HVS-1					15000																			
Room 120	SSHS-7-15-14-07-HVS-2					13000																			
Room 129 (Guidance)	SSHS-07-08-14-08-IA	0.44				12								5.6				1				0.68		2.1	
Room 129 (Guidance)	SSHS-07-13-14-08-SS	3300				79																			
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-1	2800				100								12				97							
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-2					67												28							
Room 100 (Library)	SSHS-07-08-14-09-IA	0.19				11								4.7				0.83				0.64		1.8	
Hallway Outside Library	SSHS-07-13-14-09-SS					140								49		34		330		16		18		300	
Hallway Outside Library	SSHS-07-15-14-09-HVS-1					64										27									
Hallway Outside Library	SSHS-07-15-14-09-HVS-2					53										25									

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Methylene Chloride	Q	Hexane	Q	Heptane	Q	Ethyl Benzene	Q	Ethanol	Q	Cyclohexane	Q	Cumene	Q	Chloromethane	Q	Chloroform	Q	Carbon Tetrachloride	Q	Carbon Disulfide	Q	Benzene	Q	Acetone	Q
Location	Sample ID																										
Hallway Near Main Entrance	SSHS-07-08-14-01-IA							0.42		5.9						1.2		0.24		0.63						32	
Hallway Near Main Entrance	SSHS-07-13-14-01-SS							9.9		64																200	
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-1			10		5.3		100																47		63	
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-2																UJ										
Room 130	SSHS-07-08-14-02-IA							0.29		11						1		0.33		0.62						16	
Room 130	SSHS-07-14-14-02-SS																										
Room 130	SSHS-07-14-14-02-SS-DUP																										
Room 130	SSHS-07-15-14-02-HVS-1																										
Room 130	SSHS-07-15-14-02-HVS2			28																							
Room 127	SSHS-07-08-14-03-IA							0.32		22						0.96				0.66				0.27		20	
Room 127	SSHS-07-08-14-IAON-127					2.3		0.58		21	J					0.84				0.35				0.41		22	J
Room 127	SSHS-07-13-14-03-SS																										
Room 127	SSHS-07-16-14-03-HVS-1																										
Room 127	SSHS-7-16-14-3-HVS-1-DUP																										
Room 127	SSHS-07-16-14-03-HVS-2																										
Room 125	SSHS-07-08-14-04-IA							0.32		12	J					0.79				0.38		2.5		0.25		12	J
Room 125	SSHS-07-13-14-04-SS																										
Room 125	SSHS-07-15-14-04-HVS1																										
Room 125	SSHS-7-15-14-04-HVS-2																										
Room 124	SSHS-07-08-14-05-IA							0.32		6.6	J					0.76				0.39						11	J
Room 124	SSHS-07-13-14-05-SS																										
Room 124	SSHS-07-15-14-05-HVS1													15													
Room 124	SSHS-07-15-14-05-HVS2																										
Room 122	SSHS-07-08-14-06-IA							0.4		8.1	J					0.79				0.39				0.32		11	J
Room 122	SSHS-07-13-14-06-SS																										
Room 122	SSHS-7-15-14-06-HVS-1																										
Room 122	SSHS-7-15-14-06-HVS-2																										
Room 120	SSHS-07-08-14-07-IA							0.26		7.4	J					0.9				0.4						11	J
Room 120	SSHS-07-14-14-07-SS																									320	
Room 120	SSHS-7-15-14-07-HVS-1																										
Room 120	SSHS-7-15-14-07-HVS-2																										
Room 129 (Guidance)	SSHS-07-08-14-08-IA					0.98		0.68		55	J					1				0.41				0.44		43	J
Room 129 (Guidance)	SSHS-07-13-14-08-SS																									28	
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-1																									83	
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-2																							9		94	
Room 100 (Library)	SSHS-07-08-14-09-IA			1.8		6.5		0.5		27	J					0.94				0.39				0.4		26	J
Hallway Outside Library	SSHS-07-13-14-09-SS			9.1		5.1		68		100				7.2										86		210	
Hallway Outside Library	SSHS-07-15-14-09-HVS-1																										
Hallway Outside Library	SSHS-07-15-14-09-HVS-2																										

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	2-Butanone (Methyl Ethyl Ketone)	Q	4-Methyl-2-pentanone	Q	4-Ethyltoluene	Q	2,2,4-Trimethylpentane	Q	2-Propanol	Q	1,4-Dioxane	Q	1,3,5-Trimethylbenzene	Q	1,2,4-Trimethylbenzene	Q	1,2-Dichloroethane	Q	1,1,1-Trichloroethane	Q
Location	Sample ID																				
Hallway Near Main Entrance	SSHS-07-08-14-01-IA																				
Hallway Near Main Entrance	SSHS-07-13-14-01-SS	29																		42	
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-1	15				210								67		270				23	
Hallway Near Main Entrance	SSHS-07-16-14-01-HVS-2																			16	
Room 130	SSHS-07-08-14-02-IA																	0.17			
Room 130	SSHS-07-14-14-02-SS																				
Room 130	SSHS-07-14-14-02-SS-DUP																				
Room 130	SSHS-07-15-14-02-HVS-1																				
Room 130	SSHS-07-15-14-02-HVS2																				
Room 127	SSHS-07-08-14-03-IA	2.7																0.53			
Room 127	SSHS-07-08-14-IAON-127	2.9								8.4								1.6			
Room 127	SSHS-07-13-14-03-SS																				
Room 127	SSHS-07-16-14-03-HVS-1																				
Room 127	SSHS-7-16-14-3-HVS-1-DUP																				
Room 127	SSHS-07-16-14-03-HVS-2																				
Room 125	SSHS-07-08-14-04-IA									2								0.18			
Room 125	SSHS-07-13-14-04-SS																				
Room 125	SSHS-07-15-14-04-HVS1																				
Room 125	SSHS-7-15-14-04-HVS-2																				
Room 124	SSHS-07-08-14-05-IA	2.5																0.21			
Room 124	SSHS-07-13-14-05-SS																				
Room 124	SSHS-07-15-14-05-HVS1																				
Room 124	SSHS-07-15-14-05-HVS2																				
Room 122	SSHS-07-08-14-06-IA																				
Room 122	SSHS-07-13-14-06-SS																				
Room 122	SSHS-7-15-14-06-HVS-1																				
Room 122	SSHS-7-15-14-06-HVS-2																				
Room 120	SSHS-07-08-14-07-IA																				
Room 120	SSHS-07-14-14-07-SS			60				7.4													
Room 120	SSHS-7-15-14-07-HVS-1																				
Room 120	SSHS-7-15-14-07-HVS-2																				
Room 129 (Guidance)	SSHS-07-08-14-08-IA	5		3.4						11		0.59						0.37			
Room 129 (Guidance)	SSHS-07-13-14-08-SS																				
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-1	80																			
Hallway Outside Guidance Area	SSHS-07-16-14-08-HVS-2	34																			
Room 100 (Library)	SSHS-07-08-14-09-IA	3.2								6.1		0.65				0.96		0.19			
Hallway Outside Library	SSHS-07-13-14-09-SS	44				67								20		72				17	
Hallway Outside Library	SSHS-07-15-14-09-HVS-1	36																		11	
Hallway Outside Library	SSHS-07-15-14-09-HVS-2	36																		8.7	

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Trichloroethene	Q	trans-1,2-Dichloroethene	Q	Freon 12	Q	cis-1,2-Dichloroethene	Q	Freon 113	Q	Freon 11	Q	Toluene	Q	PCE	Q	Styrene	Q	Propylbenzene	Q	o-Xylene	Q	m,p-Xylene	Q
Room 101	SSHS-07-08-14-10-IA					6.9						1.1		44				0.7				4		13	
Room 101	SSHS-07-14-14-10-SS					120						17				7.7									
Room 101	SSHS-7-16-14-10-HVS-1					71						6.7		620						13		170		410	
Room 101	SSHS-7-16-14-10-HVS-2					60						6.7		6.1								170			
Room 115	SSHS-07-08-14-11-IA					9.5						1		3.9				0.76				0.55		1.6	
Room 115	SSHS-07-14-14-11-SS					26										29									
Room 115	SSHS-07-15-14-11-HVS-01					22										12									
Room 115	SSHS-7-15-14-11-HVS-2					21								6		9.9									
Room 115	SSHS-7-15-14-11-HVS-2-DUP					21								5.9		8.6									
Room 116	SSHS-07-08-14-12-IA					9.7						0.9		1.8								0.34		0.96	
Room 116	SSHS-07-14-14-12-SS					6900																			
Room 116	SSHS-7-15-14-12-HVS-01					4800																			
Room 116	SSHS-07-15-14-12-HVS-02					4600																			
Room 111	SSHS-07-08-14-13-IA					15								1.4								0.29		0.82	
Room 111	SSHS-07-14-14-13-SS	7.3				1400										24									
Room 111	SSHS-07-15-14-13-HVS1					750										9.9									
Room 111	SSHS-07-15-14-13-HVS2					1200								5.4		8.4									
Room 103	SSHS-07-08-14-14-IA*					9.6						1		13								1.3		4.1	
Room 106	SSHS-07-14-14-14-SS*	11				620								35								5		14	
Room 106	SSHS-07-15-14-14-HVS1					280																			
Room 106	SSHS-07-15-14-14-HVS2					320								5.3											
Room 105	SSHS-07-08-14-15-IA*					13								4.4								0.36		0.97	
Room 104	SSHS-07-14-14-15-SS*					22000																			
Room 104	SSHS-07-16-14-15-HVS-01					16000																			
Room 104	SSHS-07-16-14-15-HVS-02					3700																			
Auditorium	SSHS-07-10-14-16-IA					2						0.95		0.5											
Auditorium	SSHS-07-10-14-16-IA-DUP					2								0.38											
Back Stage	SSHS-07-14-14-16-SS					270								13				11						9.4	
Back Stage	SSHS-07-16-14-16-HVS-01					180								6.7											
Back Stage	SSHS-07-16-14-16-HVS-02					200																			
Room 136A	SSHS-07-10-14-17-IA					2						1.1		0.63											
Hallway Outside Room 136A	SSHS-07-14-14-17-SS					540				13															
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-01					1600																			
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-02					840																			
Custodian Break Room (M14)	SSHS-07-10-14-18-IA	0.67	J			3.5						1.2		20				3.1				2.2		6.4	
Custodian's Storage	SSHS-07-14-14-18-SS					5000						130													
Custodian's Storage	SSHS-07-16-14-18-HVS-01					5800						69													
Custodian's Storage	SSHS-07-16-14-18-HVS-02					6700						75													
Room 138A	SSHS-07-10-14-19-IA					2.2						0.93		0.58											
Room 138A	SSHS-07-14-14-19-SS					880								24								5.6		23	
Room 138A	SSHS-07-16-14-19-HVS-01					3100								16		38									
Room 138A	SSHS-07-16-14-19-HVS-02					4500								13		29									

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Methylene Chloride	Q	Hexane	Q	Heptane	Q	Ethyl Benzene	Q	Ethanol	Q	Cyclohexane	Q	Cumene	Q	Chloromethane	Q	Chloroform	Q	Carbon Tetrachloride	Q	Carbon Disulfide	Q	Benzene	Q	Acetone	Q
Room 101	SSHS-07-08-14-10-IA	1.6		5.7		9.4		3.1		25	J	1.4				0.84				0.39				1.5		110	J
Room 101	SSHS-07-14-14-10-SS									63														110		97	
Room 101	SSHS-7-16-14-10-HVS-1							76																110		67	
Room 101	SSHS-7-16-14-10-HVS-2																									67	
Room 115	SSHS-07-08-14-11-IA			1.7		3.7		0.42		22	J					0.92				0.4				0.36		21	J
Room 115	SSHS-07-14-14-11-SS									8.5																	
Room 115	SSHS-07-15-14-11-HVS-01			7																							
Room 115	SSHS-7-15-14-11-HVS-2			12																							
Room 115	SSHS-7-15-14-11-HVS-2-DUP			12																							
Room 116	SSHS-07-08-14-12-IA							0.24		10	J					0.86				0.38				0.26		12	J
Room 116	SSHS-07-14-14-12-SS																										
Room 116	SSHS-7-15-14-12-HVS-01																										
Room 116	SSHS-07-15-14-12-HVS-02																										
Room 111	SSHS-07-08-14-13-IA			1.6				0.23		9.3	J					1.1				0.38						9.6	J
Room 111	SSHS-07-14-14-13-SS			9																							
Room 111	SSHS-07-15-14-13-HVS1																										
Room 111	SSHS-07-15-14-13-HVS2			4.7																							
Room 103	SSHS-07-08-14-14-IA*					1.4		1		22	J					0.84				0.38				0.66		37	J
Room 106	SSHS-07-14-14-14-SS*									51		6.1												3.8		45	
Room 106	SSHS-07-15-14-14-HVS1									39	J																
Room 106	SSHS-07-15-14-14-HVS2									38																	
Room 105	SSHS-07-08-14-15-IA*							0.27		50	J					0.76				0.36						14	J
Room 104	SSHS-07-14-14-15-SS*																										
Room 104	SSHS-07-16-14-15-HVS-01																										
Room 104	SSHS-07-16-14-15-HVS-02																										
Auditorium	SSHS-07-10-14-16-IA									2.3	J					0.85				0.42						4.8	J
Auditorium	SSHS-07-10-14-16-IA-DUP									2.3	J					0.78				0.39						3.4	J
Back Stage	SSHS-07-14-14-16-SS			10		15						7.7												5.2			
Back Stage	SSHS-07-16-14-16-HVS-01																									33	
Back Stage	SSHS-07-16-14-16-HVS-02																									33	
Room 136A	SSHS-07-10-14-17-IA									2.5	J					0.74		0.39		0.4						3.8	J
Hallway Outside Room 136A	SSHS-07-14-14-17-SS																									30	
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-01																										
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-02																UJ										
Custodian Break Room (M14)	SSHS-07-10-14-18-IA			2.5		1.3		1.4		100	J					0.81		0.7		0.39				0.94		22	J
Custodian's Storage	SSHS-07-14-14-18-SS																										
Custodian's Storage	SSHS-07-16-14-18-HVS-01																										
Custodian's Storage	SSHS-07-16-14-18-HVS-02																										
Room 138A	SSHS-07-10-14-19-IA										UJ					0.74				0.4						4.3	J
Room 138A	SSHS-07-14-14-19-SS			13		11						7.3												7.7			
Room 138A	SSHS-07-16-14-19-HVS-01																									160	
Room 138A	SSHS-07-16-14-19-HVS-02																									210	

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	2-Butanone (Methyl Ethyl Ketone)	Q	4-Methyl-2-pentanone	Q	4-Ethyltoluene	Q	2,2,4-Trimethylpentane	Q	2-Propanol	Q	1,4-Dioxane	Q	1,3,5-Trimethylbenzene	Q	1,2,4-Trimethylbenzene	Q	1,2-Dichloroethane	Q	1,1,1-Trichloroethane	Q
Room 101	SSHS-07-08-14-10-IA	4.4				1.4				4.9						1.6					
Room 101	SSHS-07-14-14-10-SS	16																			
Room 101	SSHS-7-16-14-10-HVS-1	23				90								34		120					
Room 101	SSHS-7-16-14-10-HVS-2	23				90										120					
Room 115	SSHS-07-08-14-11-IA	3								4.7						1					
Room 115	SSHS-07-14-14-11-SS																			14	
Room 115	SSHS-07-15-14-11-HVS-01																				
Room 115	SSHS-7-15-14-11-HVS-2																				
Room 115	SSHS-7-15-14-11-HVS-2-DUP																				
Room 116	SSHS-07-08-14-12-IA	2.5																			
Room 116	SSHS-07-14-14-12-SS																				
Room 116	SSHS-7-15-14-12-HVS-01																				
Room 116	SSHS-07-15-14-12-HVS-02																				
Room 111	SSHS-07-08-14-13-IA											0.79									
Room 111	SSHS-07-14-14-13-SS																			9	
Room 111	SSHS-07-15-14-13-HVS1																				
Room 111	SSHS-07-15-14-13-HVS2																				
Room 103	SSHS-07-08-14-14-IA*	3.3								2.5		0.92				0.97					
Room 106	SSHS-07-14-14-14-SS*																				
Room 106	SSHS-07-15-14-14-HVS1																				
Room 106	SSHS-07-15-14-14-HVS2																				
Room 105	SSHS-07-08-14-15-IA*	6.2		2.3								1									
Room 104	SSHS-07-14-14-15-SS*																				
Room 104	SSHS-07-16-14-15-HVS-01																				
Room 104	SSHS-07-16-14-15-HVS-02																				
Auditorium	SSHS-07-10-14-16-IA											0.66									
Auditorium	SSHS-07-10-14-16-IA-DUP																				
Back Stage	SSHS-07-14-14-16-SS															6.3					
Back Stage	SSHS-07-16-14-16-HVS-01	31																			
Back Stage	SSHS-07-16-14-16-HVS-02																				
Room 136A	SSHS-07-10-14-17-IA																				
Hallway Outside Room 136A	SSHS-07-14-14-17-SS																				
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-01																				
Hallway Outside Room 136A	SSHS-07-16-14-17-HVS-02																				
Custodian Break Room (M14)	SSHS-07-10-14-18-IA					2.9				4.6				1.2		3.4					
Custodian's Storage	SSHS-07-14-14-18-SS																				
Custodian's Storage	SSHS-07-16-14-18-HVS-01																				
Custodian's Storage	SSHS-07-16-14-18-HVS-02																				
Room 138A	SSHS-07-10-14-19-IA																				
Room 138A	SSHS-07-14-14-19-SS					6.3										8.6					
Room 138A	SSHS-07-16-14-19-HVS-01																				
Room 138A	SSHS-07-16-14-19-HVS-02																				

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Trichloroethene	Q	trans-1,2-Dichloroethene	Q	Freon 12	Q	cis-1,2-Dichloroethene	Q	Freon 113	Q	Freon 11	Q	Toluene	Q	PCE	Q	Styrene	Q	Propylbenzene	Q	o-Xylene	Q	m,p-Xylene	Q
Room 142 (Wellness Ctr)	SSHS-07-10-14-20-IA					2.4						0.95		1.1								0.18		1.4	
Room 142 (Wellness Ctr)	SSHS-07-14-14-20-SS					58								6.6										64	
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-01					87										9.7									
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-02					140										7.4									
Room 145 Nurses Office	SSHS-07-10-14-21-IA	9.4	J			2						0.94		0.52										0.3	
Room 145 Nurses Office	SSHS-07-10-14-21-IA-DUP					2.2						1.1		0.81										0.34	
Room 145 Nurses Office	SSHS-07-14-14-21-SS	14				14	J		J	15						16								11	
Room 145 Nurses Office	SSHS-07-14-14-21-SS-DUP					20	J		J	16				19											
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-01	7.3				13				11				7.2											
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-02	7.4				12								5.8											
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA					4.9						1.1		0.92								0.14		0.36	J
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA DUP					4.9						0.88		1.2								0.17		0.41	
Room 171 (Aux Gym)	SSHS-07-14-14-22-SS					48																			
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-01					78								4.7											
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-02					180																			
Room 156 (Girls Locker Room)	SSHS-07-10-14-23-IA					2.1								0.53											
Room 156 (Girls Locker Room)	SSHS-07-14-14-23-SS					33								12										6.7	
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS1					27																			
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS2					29																			
Rooftop	SSHS-07-08-14-OA-01					2						1		1.2								0.2		0.61	
Overnight Rooftop	SSHS-07-08-14-OAON-01					1.6								1.2								0.2		0.58	
Rooftop	SSHS-07-10-14-OA-O2					1.9								0.3											

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	Methylene Chloride	Q	Hexane	Q	Heptane	Q	Ethyl Benzene	Q	Ethanol	Q	Cyclohexane	Q	Cumene	Q	Chloromethane	Q	Chloroform	Q	Carbon Tetrachloride	Q	Carbon Disulfide	Q	Benzene	Q	Acetone	Q
Room 142 (Wellness Ctr)	SSHS-07-10-14-20-IA							0.14			UJ					0.78		0.24		0.4				0.28		6.3	J
Room 142 (Wellness Ctr)	SSHS-07-14-14-20-SS													15										4.3			
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-01																									34	
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-02																									48	
Room 145 Nurses Office	SSHS-07-10-14-21-IA									5.6	J					0.76		0.59		0.39						5.8	J
Room 145 Nurses Office	SSHS-07-10-14-21-IA-DUP									6.8	J					0.73		0.57		0.41				0.27		5.3	J
Room 145 Nurses Office	SSHS-07-14-14-21-SS									43	J							5.9				36	J			36	J
Room 145 Nurses Office	SSHS-07-14-14-21-SS-DUP																	16								27	
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-01																										
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-02																										
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA									8.8	J					0.81		0.33		0.41						9.2	J
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA DUP							0.14		7.6	J					0.7		0.37		0.39						6.5	J
Room 171 (Aux Gym)	SSHS-07-14-14-22-SS																									530	
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-01																									84	
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-02																									32	
Room 156 (Girls Locker Room)	SSHS-07-10-14-23-IA									3	J					0.71		14		0.35						3.8	J
Room 156 (Girls Locker Room)	SSHS-07-14-14-23-SS			4.5																						49	
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS1																										
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS2																										
Rooftop	SSHS-07-08-14-OA-01									2.9	J					0.84				0.35						9.5	J
Overnight Rooftop	SSHS-07-08-14-OAON-01							0.15		3.3	J					0.79		0.16	J	0.36				0.28		9.4	J
Rooftop	SSHS-07-10-14-OA-O2										ND,UJ					0.79				0.35						5.5	J

TABLE 2-5
MEASURED CONCENTRATIONS OF VOCs IN INDOOR AIR, OUTDOOR AIR, SUB-SLAB VAPOR AND HVS DISCHARGE SAMPLES

Elmira High School
Elmira, New York

	RESULTS (ug/m3)	2-Butanone (Methyl Ethyl Ketone)	Q	4-Methyl-2-pentanone	Q	4-Ethyltoluene	Q	2,2,4-Trimethylpentane	Q	2-Propanol	Q	1,4-Dioxane	Q	1,3,5-Trimethylbenzene	Q	1,2,4-Trimethylbenzene	Q	1,2-Dichloroethane	Q	1,1,1-Trichloroethane	Q
Room 142 (Wellness Ctr)	SSHS-07-10-14-20-IA			1.3						8.6											
Room 142 (Wellness Ctr)	SSHS-07-14-14-20-SS			14																40	
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-01																			26	
Room 142 (Wellness Ctr)	SSHS-07-16-14-20-HVS-02																			19	
Room 145 Nurses Office	SSHS-07-10-14-21-IA																				
Room 145 Nurses Office	SSHS-07-10-14-21-IA-DUP											0.66								6.6	J
Room 145 Nurses Office	SSHS-07-14-14-21-SS																				
Room 145 Nurses Office	SSHS-07-14-14-21-SS-DUP																				
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-01																				
Room 145 Nurses Office	SSHS-07-16-14-21-HVS-02																				
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA			1.9						2.8								0.13			
Room 171 (Aux Gym)	SSHS-07-10-14-22-IA DUP			1.9														0.13			
Room 171 (Aux Gym)	SSHS-07-14-14-22-SS	44		2000						170											
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-01			180						18											
Room 171 (Aux Gym)	SSHS-07-16-14-22-HVS-02			47																	
Room 156 (Girls Locker Room)	SSHS-07-10-14-23-IA																				
Room 156 (Girls Locker Room)	SSHS-07-14-14-23-SS	19																			
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS1																				
Room 156 (Girls Locker Room)	SSHS-07-16-14-23-HVS2																				
Rooftop	SSHS-07-08-14-OA-01											1.5									
Overnight Rooftop	SSHS-07-08-14-OAON-01																				
Rooftop	SSHS-07-10-14-OA-O2																				

TABLE 2-6
COMPARISON OF NYSDOH MATRIX AND VOC RESULTS IN INDOOR AIR AND SUB-SLAB VAPOR

Former Sperry Remington Site - North Portion
Elmira, New York

Location				Hallway Near Main Entrance		Room 130		Room 127		Room 125		Room 124		Room 122		Room 120		Room 129 (Guidance)		Room 100 (Library)		Room 101		Room 115		Room 116	
Field ID				SSHS-07-08-14-01		SSHS-07-08-14-02		SSHS-07-08-14-03		SSHS-07-08-14-04		SSHS-07-08-14-05		SSHS-07-08-14-06		SSHS-07-08-14-07		SSHS-07-08-14-08		SSHS-07-08-14-09		SSHS-07-08-14-10		SSHS-07-08-14-11		SSHS-07-08-14-12	
Type				Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab
Date	**Units**	EQL	DOH Matrix	7/8/2014	7/13/2014	7/8/2014	7/14/2014	7/8/2014	7/13/2014	7/8/2014	7/13/2014	7/8/2014	7/13/2014	7/8/2014	7/13/2014	7/8/2014	7/14/2014	7/8/2014	7/13/2014	7/8/2014	7/13/2014	7/8/2014	7/14/2014	7/8/2014	7/14/2014	7/8/2014	7/14/2014
1,1,1-trichloroethane	µg/m3	0.16	2	<0.17	42	<0.18	<25	<0.17	<120	<0.17	<15	<0.17	<50	<0.18	<60	<0.17	<63	<0.17	<6.3	<0.18	17	<0.17	<6.1	<0.17	14	<0.17	<25
1,1-dichloroethene	µg/m3	0.059	2	<0.063	<9	<0.064	<18	<0.063	<91	<0.061	<11	<0.063	<36	<0.064	<44	<0.063	<46	<0.063	<4.6	<0.064	<4.3	<0.062	<4.5	<0.063	<4.3	<0.063	<18
Carbon tetrachloride	µg/m3	6.9	1	-	<14	-	<28	-	<140	-	<18	-	<57	-	<69	-	<73	-	<7.3	-	<6.9	-	<7.1	-	<6.9	-	<29
cis-1,2-dichloroethene	µg/m3	0.12	2	<0.13	<9	<0.13	83	0.25	**2000**	<0.12	<11	<0.13	<36	<0.13	<44	<0.12	<46	<0.13	<4.6	<0.13	<4.3	<0.12	<4.5	<0.13	<4.3	<0.12	<18
Trichloroethene	µg/m3	0.16	2	<0.17	<12	**0.51**	**7300**	1.9	**39000**	0.28	**390**	0.18	**2100**	**0.17**	<59	<0.17	<62	**0.44**	<6.2	**0.19**	<5.9	<0.17	<6	<0.17	<5.9	<0.17	<24
Tetrachloroethene	µg/m3	0.2	1	<0.22	<15	<0.22	<31	<0.22	<160	<0.21	<19	<0.22	<62	<0.22	<75	<0.21	<78	<0.22	<7.8	<0.22	34	<0.21	7.7	<0.22	**29**	<0.21	<31
Vinyl chloride	µg/m3	0.038	1	<0.041	<5.8	<0.041	<12	<0.041	<59	<0.039	<7.2	<0.041	<23	<0.041	<28	<0.04	<30	<0.041	<3	<0.041	<2.8	<0.04	<2.9	<0.041	<2.8	<0.04	<12

Soil Vapor/Indoor Air Minimum Actions Matrix (NYSDOH, 2006)

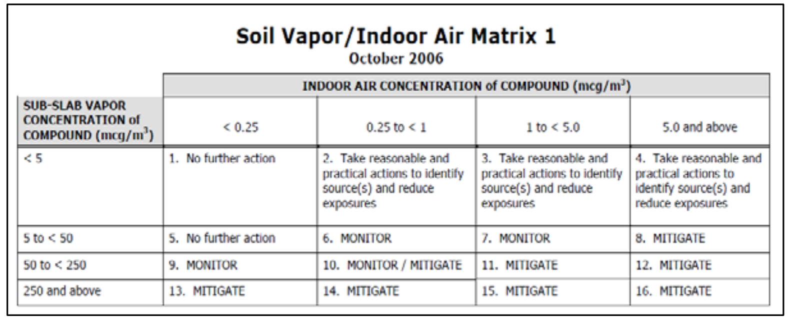
☐	No further action
░	Take reasonable and practical actions to identify source(s) and reduce exposure.
▒	Monitor
▓	Monitor/Mitigate
█	Mitigate

Source: Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)

Notes:

All data are preliminary pending data validation.

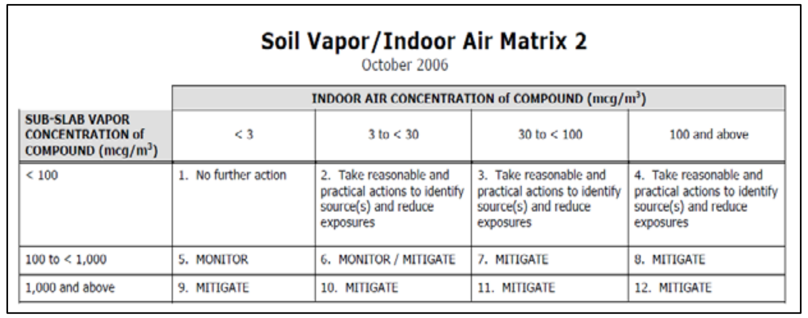
< Not detected above the laboratory reporting limit



Soil Vapor/Indoor Air Matrix 1

October 2006

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE



Soil Vapor/Indoor Air Matrix 2

October 2006

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

TABLE 2-6
COMPARISON OF NYSDOH MATRIX AND VOC RESULTS IN INDOOR AIR AND SUB-SLAB VAPOR

Former Sperry Remington Site - North Portion
Elmira, New York

Location				Room 111		Room 103 (Hallway)		Room 105		Auditorium		Room 136A		Custodian Break Room (M14)		Room 138A		Room 142 (Wellness Center)		Room 145 (Nurses Office)		Room 171 (Auxillary Gym)		Room 156 (Girls Locker Room)	
Field ID				SSHS-07-08-14-13		SSHS-07-08-14-14		SSHS-07-08-14-15		SSHS-07-10-14-16		SSHS-07-10-14-17		SSHS-07-10-14-18		SSHS-07-10-14-19		SSHS-07-10-14-20		SSHS-07-10-14-21		SSHS-07-10-14-22		SSHS-07-10-14-23	
Type				Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab
Date	**Units**	EQL	DOH Matrix	7/8/2014	7/14/2014	7/8/2014	7/14/2014	7/8/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014	7/10/2014	7/14/2014
1,1,1-trichloroethane	µg/m3	0.16	2	<0.17	9	<0.18	<6.2	<0.18	<64	<0.17	<6.4	<0.17	<6.1	<0.17	<24	<0.17	<6.5	<0.17	40	<0.16	<6.1	<0.17	<12	<0.18	<6.2
1,1-dichloroethene	µg/m3	0.059	2	<0.063	<4.5	<0.065	<4.5	<0.064	<46	<0.062	<4.6	<0.063	<4.4	<0.061	<18	<0.063	<4.7	<0.063	<4.6	<0.059	<4.4	<0.063	<9.1	<0.064	<4.5
Carbon tetrachloride	µg/m3	6.9	1	-	<7.2	-	<7.2	-	<74	-	<7.4	-	<7	-	<28	-	<7.5	-	<7.3	-	<7	-	<14	-	<7.1
cis-1,2-dichloroethene	µg/m3	0.12	2	<0.12	<4.5	<0.13	<4.5	<0.13	<46	<0.12	<4.6	<0.12	<4.4	<0.12	<18	<0.13	<4.7	<0.13	<4.6	<0.12	<4.4	<0.12	<9.1	<0.13	<4.5
Trichloroethene	µg/m3	0.16	2	<0.17	**7.3**	<0.18	**11**	<0.17	<63	<0.17	<6.3	<0.17	<6	**0.67**	<24	<0.17	<6.4	<0.17	<6.2	<0.16	**9.4**	<0.17	<12	<0.17	<6.1
Tetrachloroethene	µg/m3	0.2	1	<0.21	**24**	<0.22	<7.7	<0.22	<80	<0.21	<8	<0.21	<7.6	<0.21	<30	<0.22	<8.1	<0.22	<7.8	<0.2	16	<0.21	<16	<0.22	<7.7
Vinyl chloride	µg/m3	0.038	1	<0.04	<2.9	<0.042	<2.9	<0.041	<30	<0.04	<3	<0.04	<2.8	<0.039	<11	<0.041	<3	<0.041	<3	<0.038	<2.8	<0.04	<5.9	<0.041	<2.9

Soil Vapor/Indoor Air Minimum Actions Matrix (NYSDOH, 2006)

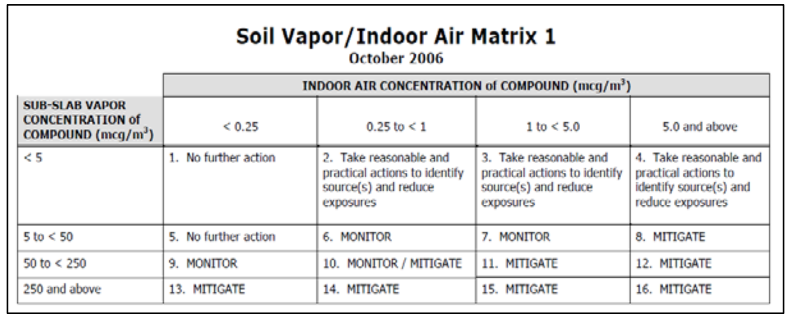
- ☐ No further action
- ░ Take reasonable and practical actions to identify source(s) and reduce exposure.
- ▒ Monitor
- ▓ Monitor/Mitigate
- █ Mitigate

Source: Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)

Notes:

All data are preliminary pending data validation.

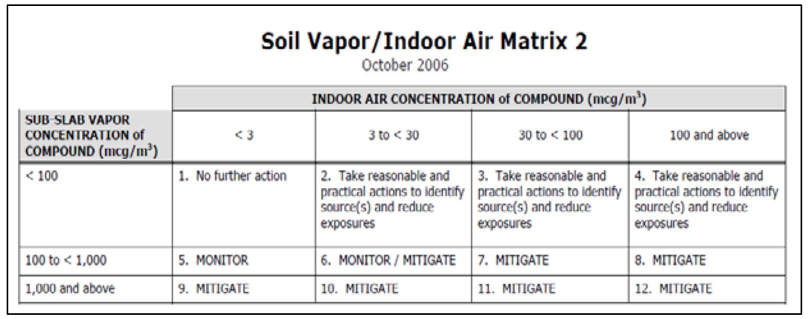
< Not detected above the laboratory reporting limit



Soil Vapor/Indoor Air Matrix 1

October 2006

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE



Soil Vapor/Indoor Air Matrix 2

October 2006

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

TABLE 2-7
PRE-MITIGATION AND POST-MITIGATION INDOOR AIR SAMPLING PROGRAM TCE RESULTS

Elmira High School
Elmira, New York

Sample ID	Location	Mitigation Status	Sample Date	TCE Result (µg/m3)	Rpt Lmt (µg/m3)	HVAC Status
SSHS-07-08-14-03-IA	Room 127	Pre-SSD	7/8/2014	1.9	0.17	On
SSHS-08-19-14-01-IA-16		Post-SSD	8/19 - 8/20/14	0.54	0.18	Off
SSHS-08-20-14-01-IA-08			8/20/2014	0.21	0.17	On
SSHS-07-08-14-08-IA	Room 129 (Guidance)	Pre-SSD	7/8/2014	0.44	0.17	On
SSHS-08-19-14-02-IA-16		Post-SSD	8/19 - 8/20/14	ND	0.18	Off
SSHS-08-20-14-02-IA-08			8/20/2014	ND	0.18	On

Notes

TCE - trichloroethene

SSD - Sub-slab Depressurization

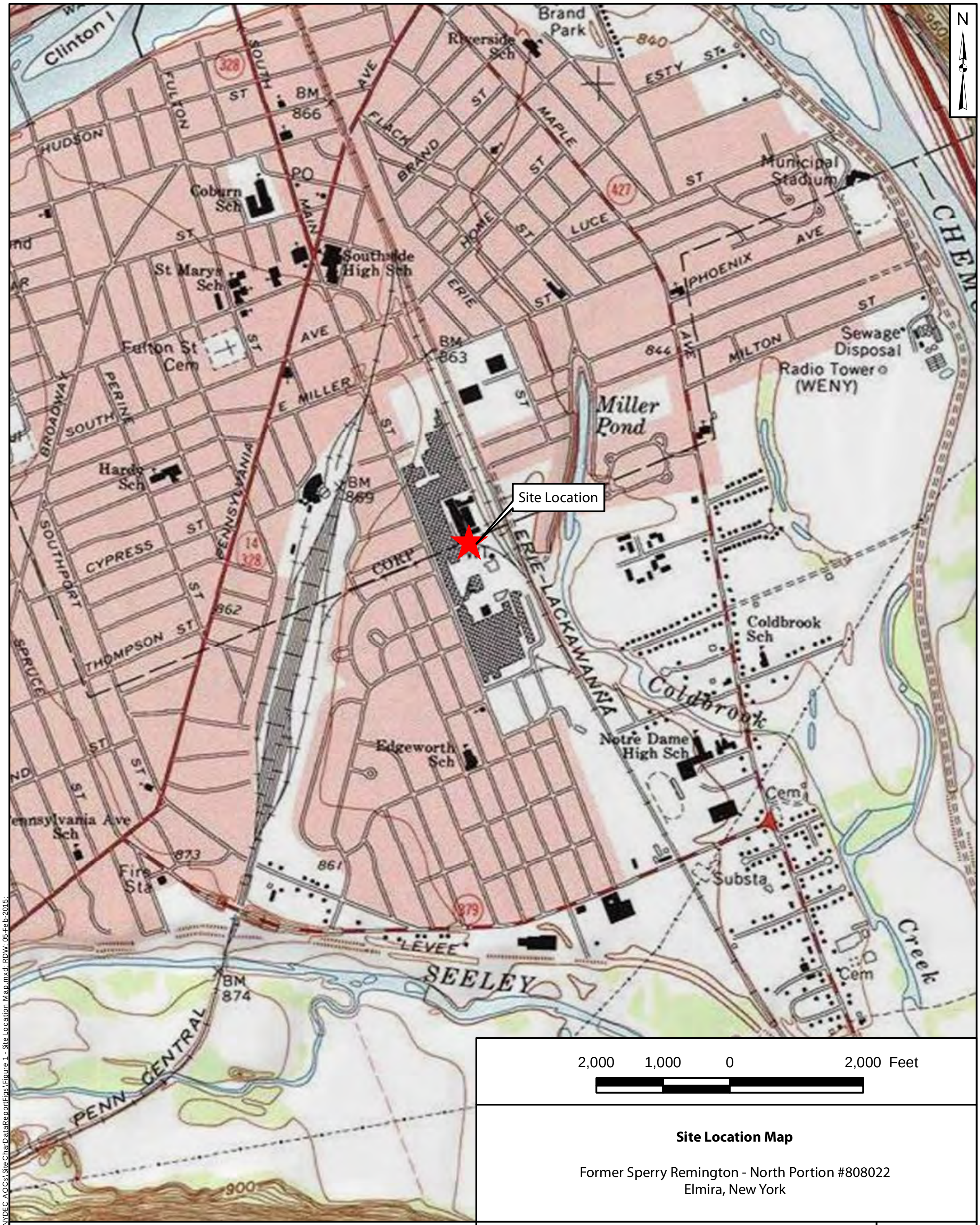
ND - Not detected above laboratory reporting limit

µg/m^3 - micrograms per cubic meter

Post-SSD samples with an 08 ending represent 8 hour samples

Post-SSD samples with an 16 ending represent 16 hour samples

FIGURES



Site Location Map

Former Sperry Remington - North Portion #808022
Elmira, New York

Notes:
Topographic map accessed via ArcGIS Online and provided by National Geographic Society and i-cubed on 5 February 2015. Elmira, New York Quadrangle (1971, photorevised 1976) is shown.

Geosyntec consultants

Columbia, Maryland

January 2016

Figure 1-1

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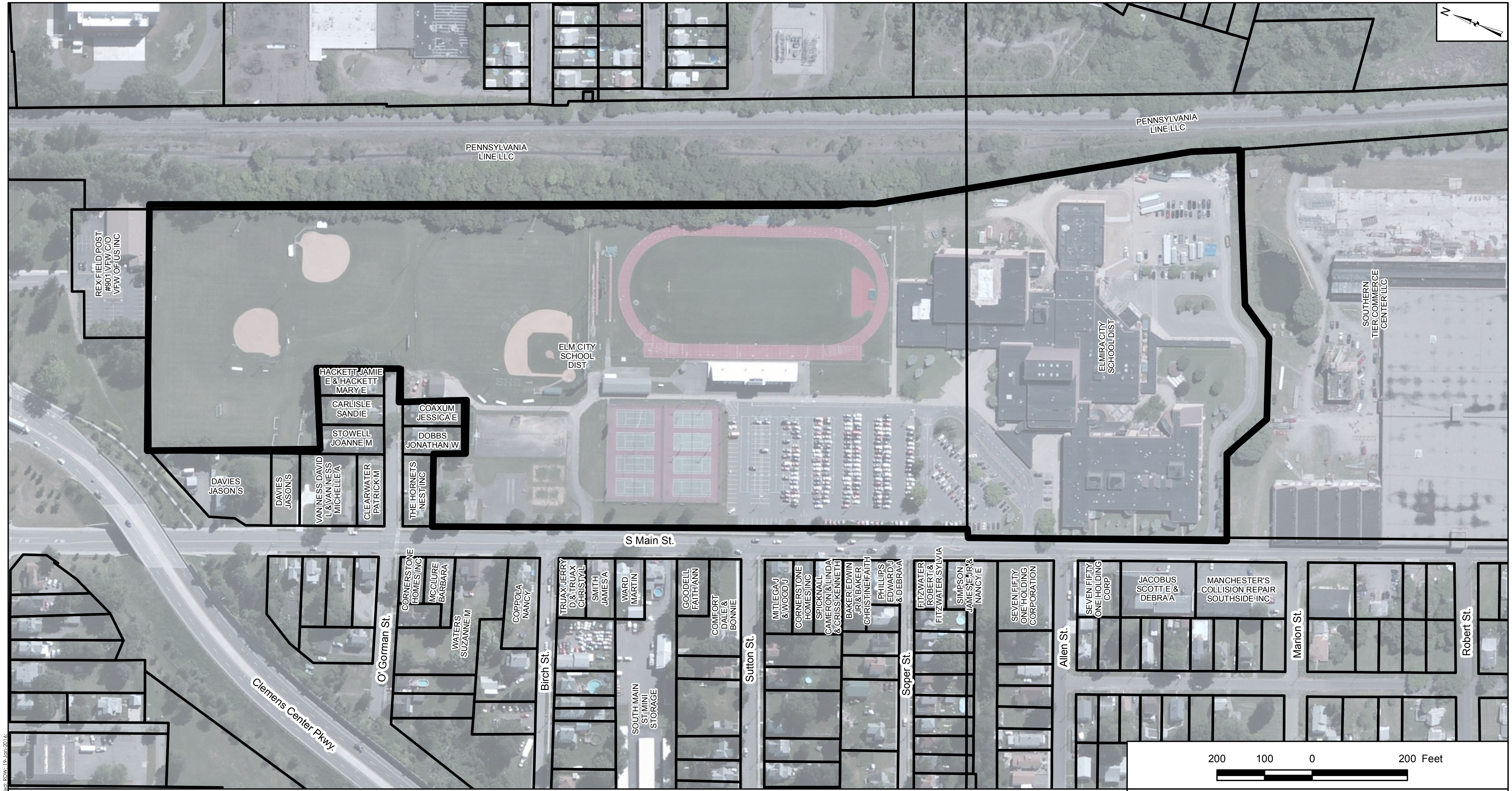

Legend

▭ Site Boundary

▭ Parcel Boundary

Notes:

Property parcels provided by Chemung County, New York on 14 November 2014. Data downloaded from http://www.stcgis.org/stc/DataDownload/chemparcels_12.zip

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 18 January 2016. Image is dated 2 June 2010.

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Site Layout Map

Former Sperry Remington Site

Elmira, New York

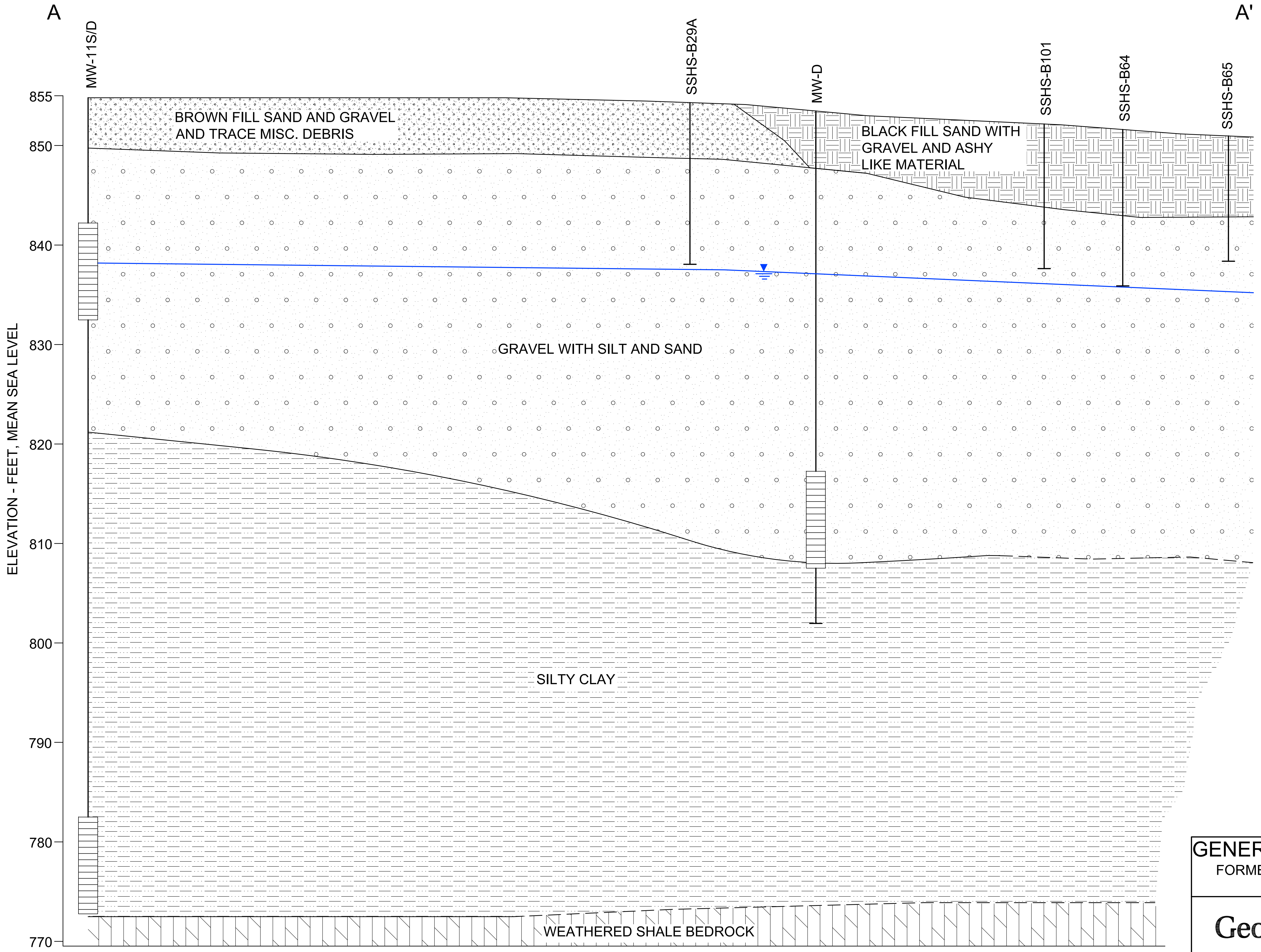
Geosyntec consultants

Columbia, Maryland

January 2016

Figure

2-1



LEGEND

▨	GRAVEL WITH SILT AND SAND
▨	BROWN FILL SAND AND GRAVEL AND TRACE MISC. DEBRIS
▨	BLACK FILL SAND WITH GRAVEL AND ASHY LIKE MATERIAL
▨	SILTY CLAY
▨	WEATHERED SHALE BEDROCK
▼	APPROXIMATE GROUNDWATER ELEVATION

0 100'

HORIZONTAL SCALE: 1" = 100'

0 10'

VERTICAL SCALE: 1" = 10'

NOTES:

1. LOCATION OF CROSS SECTION SHOWN ON FIGURE 6.
2. GEOLOGIC CONDITIONS INTERPRETED FROM BORING LOGS PRESENTED IN VARIOUS HISTORICAL REPORTS AND OBSERVATIONS MADE DURING THIS INVESTIGATION.
3. GEOLOGIC CONDITIONS MAY VARY FROM THAT SHOWN.
4. MW-11 S/D ARE SEPARATE COMPLETIONS IN SEPARATE BOREHOLES BUT SHOWN ON ONE WELL SYMBOL FOR CLARITY.

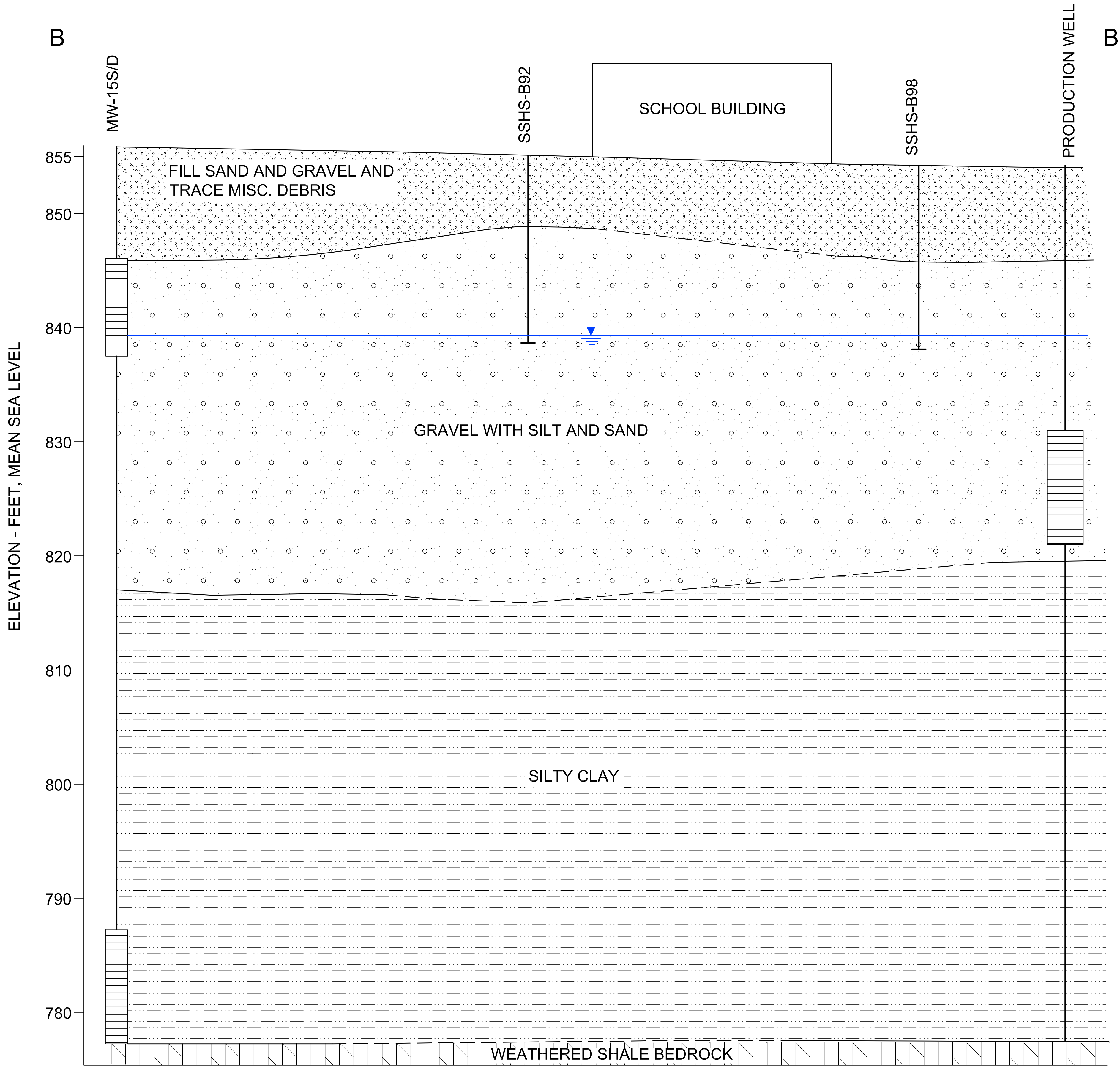
GENERALIZED CROSS-SECTION A-A'

FORMER SPERRY REMINGTON-NORTH PORTION
ELMIRA, NEW YORK

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	FEBRUARY 2015
PROJECT NO.	MN0832
DOCUMENT NO.	MD14392
FILE NO.	0832f004
FIGURE NO.	2-2A

P:\cadd\geo-minneapolis\0832 elmira\0832f000\0832f004.dwg, a, 2/6/2015 10:30:25 AM, joconnor



LEGEND

▨	GRAVEL WITH SILT AND SAND
▨	FILL SAND AND GRAVEL AND TRACE MISC. DEBRIS
▤	SILTY CLAY
▧	WEATHERED SHALE BEDROCK
▽	APPROXIMATE GROUNDWATER ELEVATION

0 100'
HORIZONTAL SCALE: 1" = 100'
0 10'
VERTICAL SCALE: 1" = 10'

NOTES:

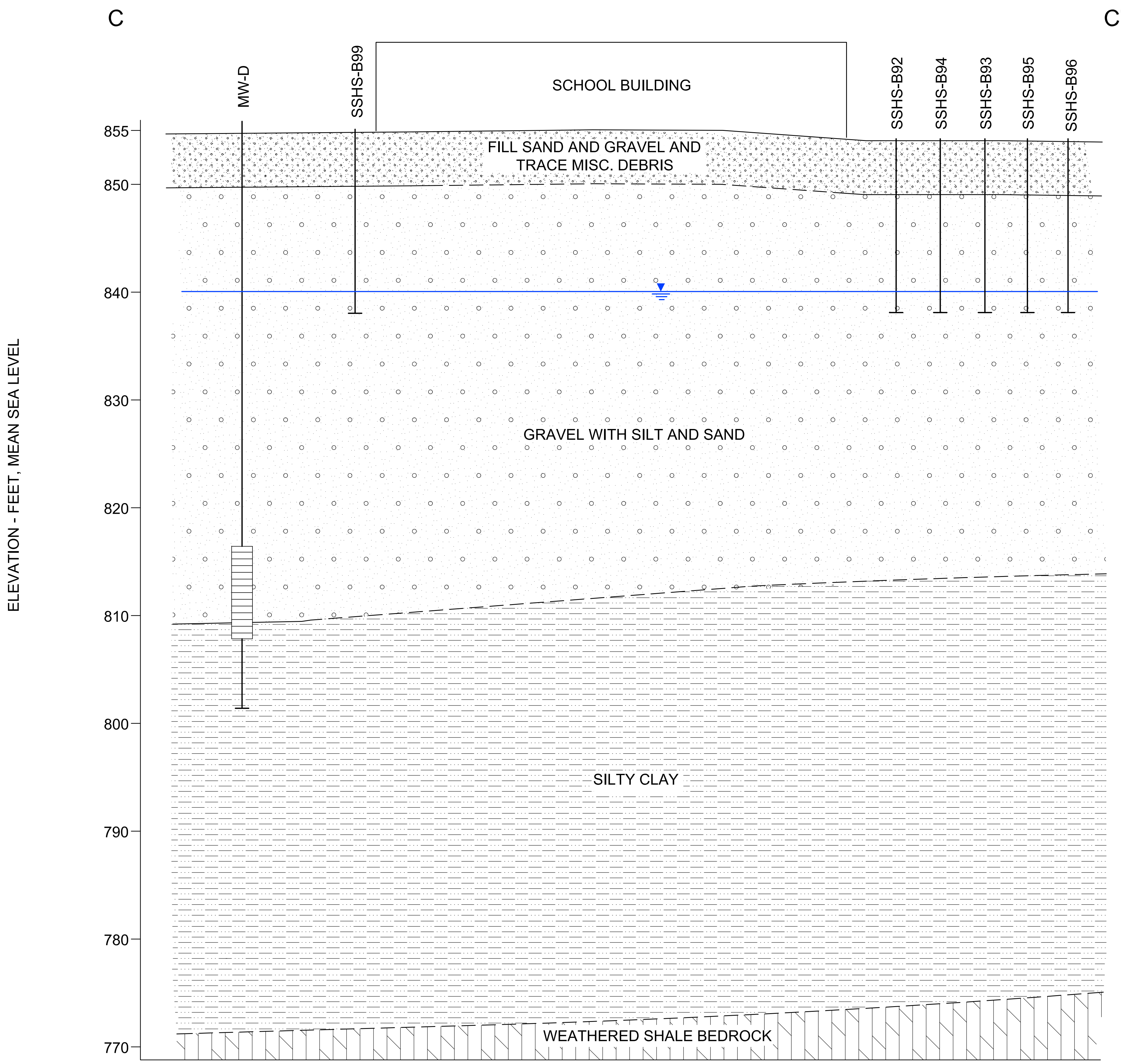
1. LOCATION OF CROSS SECTION SHOWN ON FIGURE 6.
2. GEOLOGIC CONDITIONS INTERPRETED FROM BORING LOGS PRESENTED IN VARIOUS HISTORICAL REPORTS AND OBSERVATIONS MADE DURING THIS INVESTIGATION.
3. GEOLOGIC CONDITIONS MAY VARY FROM THAT SHOWN.
4. MW-15 S/D ARE SEPARATE COMPLETIONS IN SEPARATE BOREHOLES BUT SHOWN ON ONE WELL SYMBOL FOR CLARITY.

GENERALIZED CROSS-SECTION B-B'

FORMER SPERRY REMINGTON-NORTH PORTION
ELMIRA, NEW YORK

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	FEBRUARY 2015
PROJECT NO.	MN0832
DOCUMENT NO.	MD14392
FILE NO.	0832f004
FIGURE NO.	2-2B



LEGEND

▨	GRAVEL WITH SILT AND SAND
▨	FILL SAND AND GRAVEL AND TRACE MISC. DEBRIS
▤	SILTY CLAY
▧	WEATHERED SHALE BEDROCK
▼	APPROXIMATE GROUNDWATER ELEVATION

0 100'

HORIZONTAL SCALE: 1" = 100'

0 10'

VERTICAL SCALE: 1" = 10'

NOTES:

1. LOCATION OF CROSS SECTION SHOWN ON FIGURE 6.
2. GEOLOGIC CONDITIONS INTERPRETED FROM BORING LOGS PRESENTED IN VARIOUS HISTORICAL REPORTS AND OBSERVATIONS MADE DURING THIS INVESTIGATION.
3. GEOLOGIC CONDITIONS MAY VARY FROM THAT SHOWN.

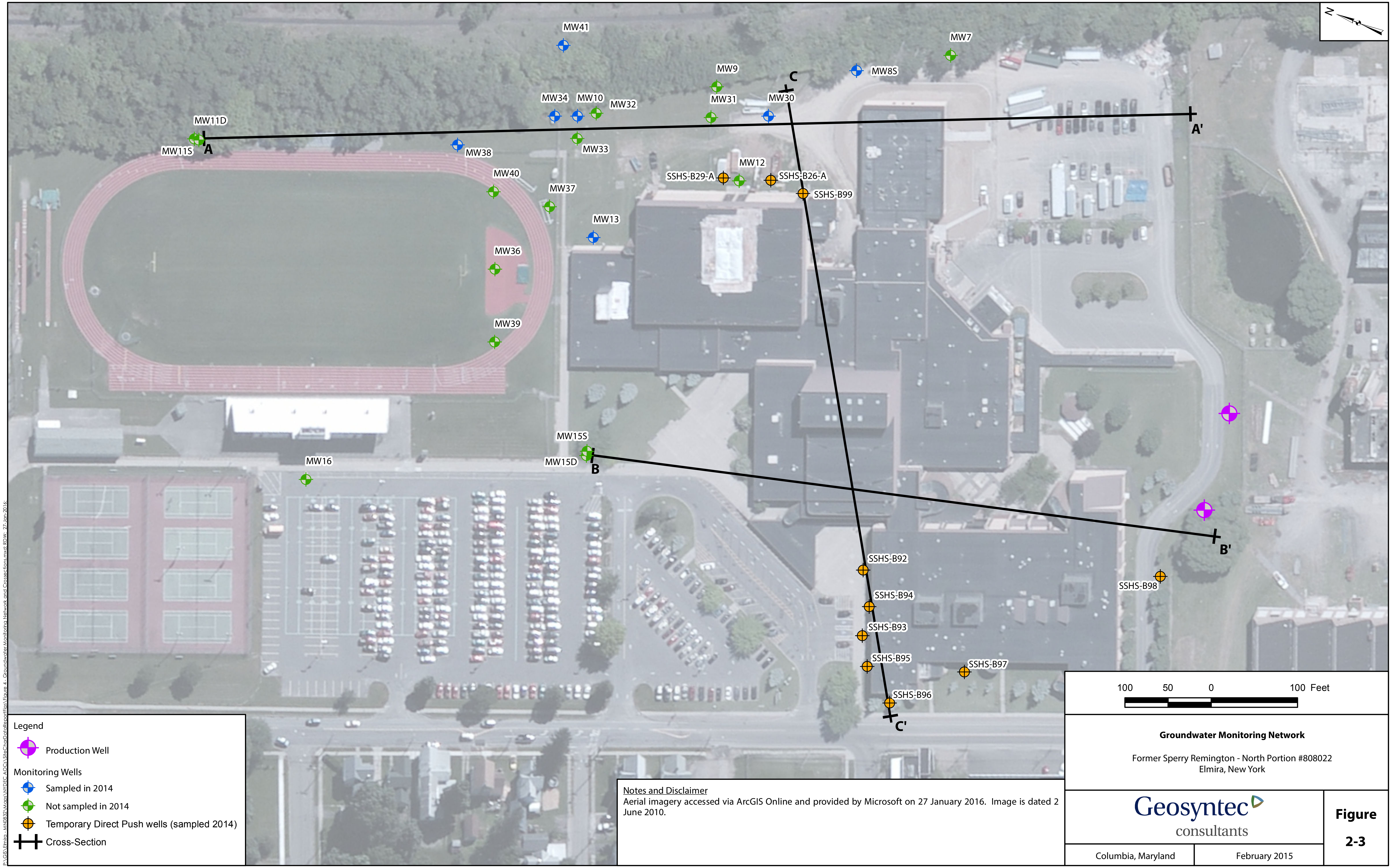
GENERALIZED CROSS-SECTION C-C'

FORMER SPERRY REMINGTON-NORTH PORTION
ELMIRA, NEW YORK

Geosyntec
consultants
COLUMBIA, MARYLAND

DATE:	FEBRUARY 2015
PROJECT NO.	MN0832
DOCUMENT NO.	MD14392
FILE NO.	0832f004
FIGURE NO.	2-2C

P:\cadd\geo-minneapolis\0832 elmira\0832f000\0832f004.dwg, C, 2/6/2015 10:28:55 AM, joconnor



Legend

- Production Well

Monitoring Wells

- Sampled in 2014
- Not sampled in 2014
- Temporary Direct Push wells (sampled 2014)
- Cross-Section

Notes and Disclaimer
Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 27 January 2016. Image is dated 2 June 2010.

Groundwater Monitoring Network

Former Sperry Remington - North Portion #808022
Elmira, New York

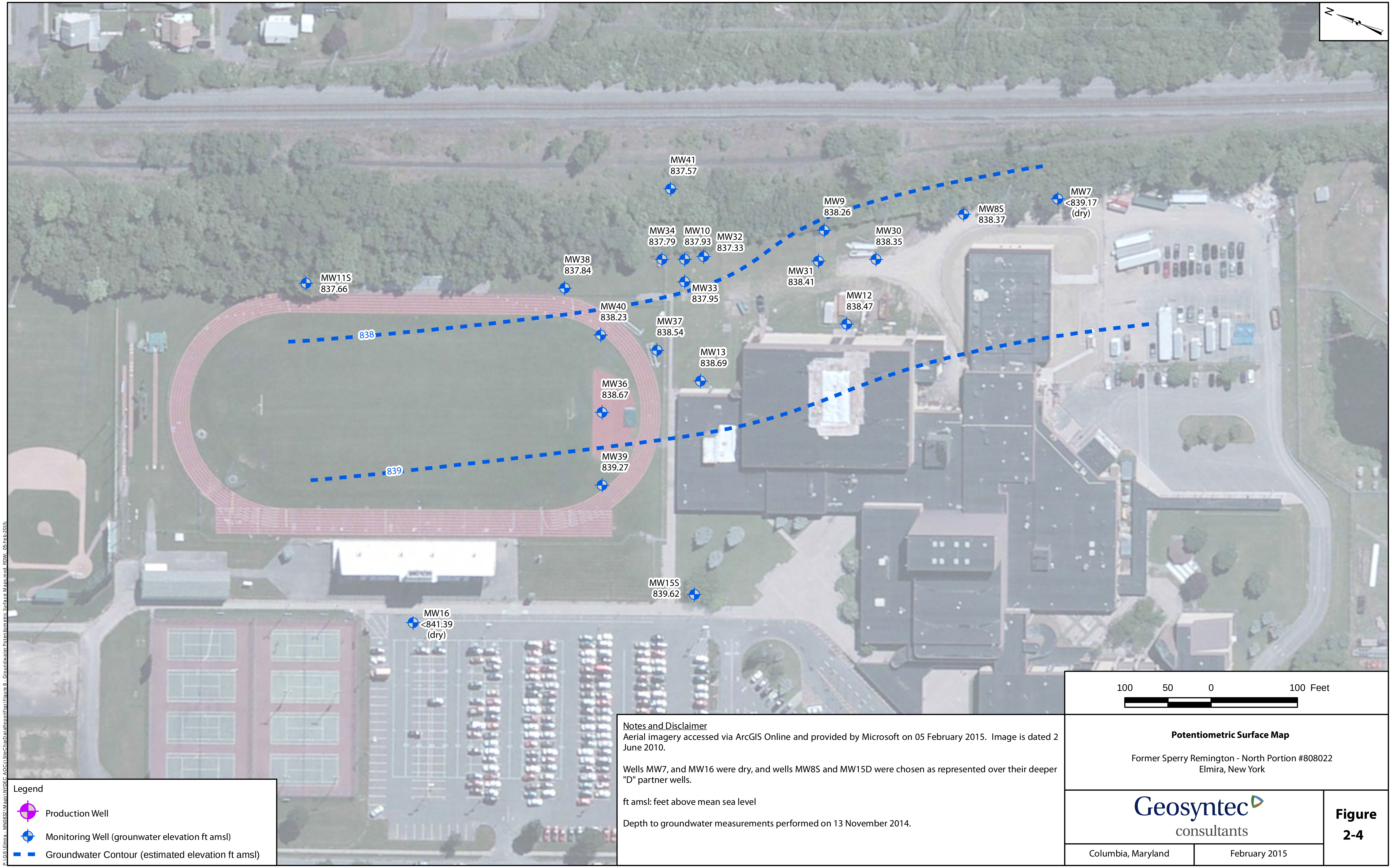
Geosyntec consultants

Columbia, Maryland

February 2015

Figure
2-3

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 4 - Groundwater Monitoring Network and Crossections.mxd; RDW; 27-Jan-2016;



Legend

- Production Well
- Monitoring Well (grounwater elevation ft amsl)
- Groundwater Contour (estimated elevation ft amsl)

Notes and Disclaimer

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 05 February 2015. Image is dated 2 June 2010.

Wells MW7, and MW16 were dry, and wells MW8S and MW15D were chosen as represented over their deeper "D" partner wells.

ft amsl: feet above mean sea level

Depth to groundwater measurements performed on 13 November 2014.

Potentiometric Surface Map

Former Sperry Remington - North Portion #808022
Elmira, New York

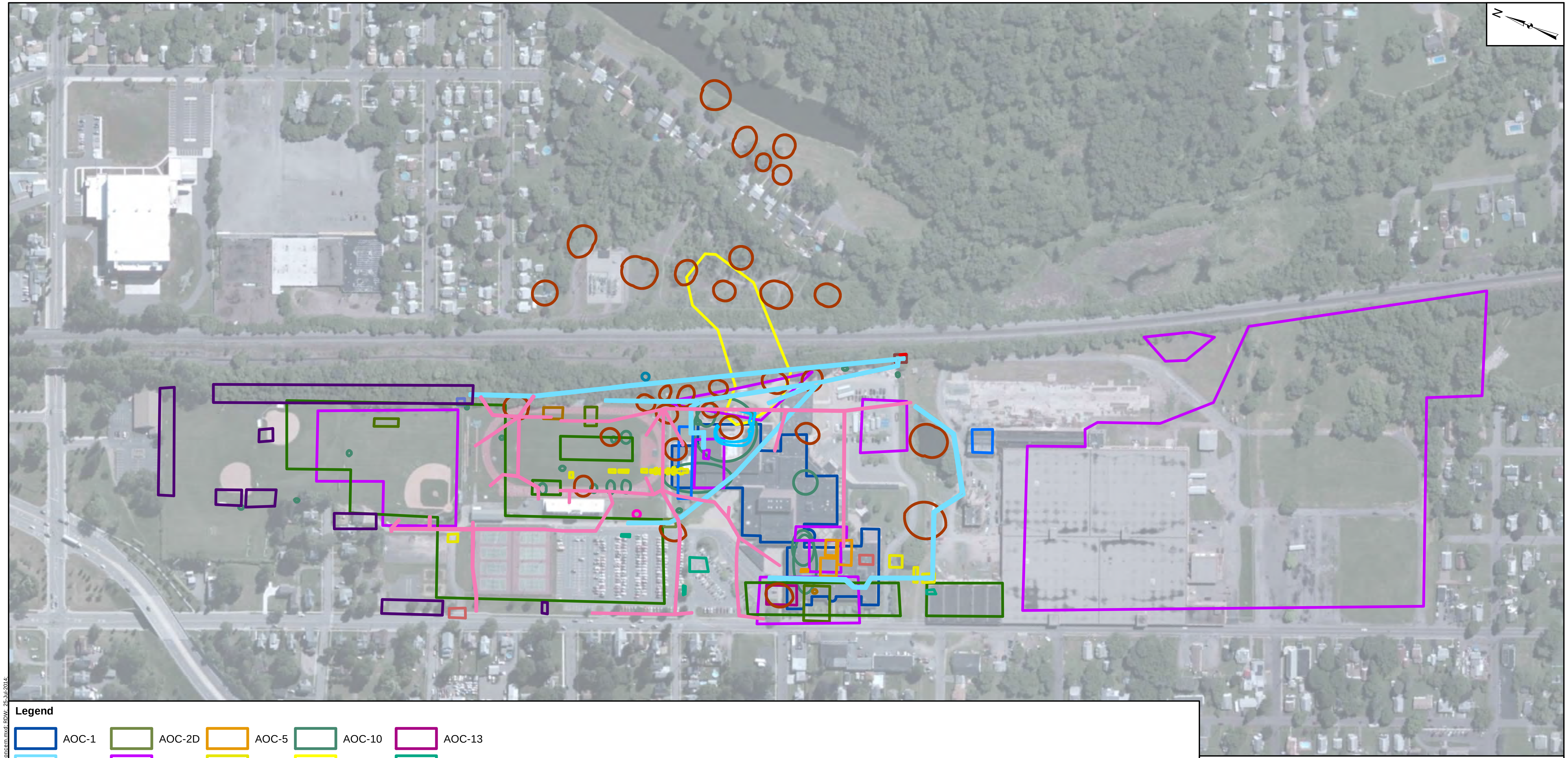
Geosyntec
consultants

Columbia, Maryland

February 2015

Figure
2-4

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 8 - Groundwater Potentiometric Surface Maps.mxd; RDW; 05-Feb-2015;



Legend

- ▭ AOC-1
- ▭ AOC-2
- ▭ AOC-2A
- ▭ AOC-2B
- ▭ AOC-2C
- ▭ AOC-2D
- ▭ AOC-2E
- ▭ AOC-3
- ▭ AOC-3A
- ▭ AOC-4
- ▭ AOC-5
- ▭ AOC-6
- ▭ AOC-7
- ▭ AOC-8
- ▭ AOC-9
- ▭ AOC-10
- ▭ AOC-11
- ▭ AOC-11A
- ▭ AOC-11B
- ▭ AOC-12
- ▭ AOC-13
- ▭ AOC-14
- ▭ AOC-15
- ▭ AOC-16
- ▭ AOC-17

300 150 0 300 Feet

NYSDEC Potential Areas of Concern

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec consultants

Columbia, Maryland

June 2014

Figure
2-5

Notes and Disclaimer
Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 25 July 2014. Image is dated 2 June 2010.

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\Figure 3 - NYDEC Potential Areas of Concern.mxd; RDW; 25-Jul-2014;

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

Sample Depth		Concentration (mg/kg)		
○	Non-Detect	∘	0 to 2 ft bgs	🟥 Temporary Cover
🟢	>0 and <= 1	∘	2 to 4 ft bgs	🟨 EMP PCB Soil Management Area
🟠	>1 and <= 50	○	4 to 6 ft bgs	
🔴	>50	○	6 to 8 ft bgs	
		○	8 to 10 ft bgs	
		○	>10 ft bgs	

Notes

PCB - Polychlorinated Biphenyl
fg bgs - Feet below ground surface
mg/kg - milligram per kilogram

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 18 December 2015. Image is dated 2 June 2010. Screening criteria of soil above 2 feet bgs is the Restricted Residential Soil Cleanup Objective of 1 mg/kg (6 NYCRR Part 375)

80 40 0 80 160 240 320 Feet

Extent of PCBs in Soil

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Columbia, Maryland

February 2016

Figure

2-6

Sample Depth
- 0.17 to 0.5 ft bgs
- >0.5 to 2 ft bgs
- >2 to 6 ft bgs
- >6 to 10 ft bgs
- >15 ft bgs

Relative Concentration
- ○ Non-Detect
- 🟢 Detect, but does not exceed SCO
- 🔴 Exceeds SCO

- 🟨 EMP SVOC Soil Management
- 🟥 Temporary Cover

Notes
VOC - Volatile Organic Compound
SVOC - Semivolatile Organic Compound
SCO - Soil Cleanup Objective
ft bgs - Feet below ground surface

Soil Management Areas digitized from georeferenced images of the Environmental Management Plan (EMP) produced by Sterling Environmental Engineering (2009).

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 02 February 2016. Image is dated 2 June 2010.

Extent of SVOCs in Soil

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Columbia, Maryland | February 2015

Figure 2-7

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure X- Extent of VOCs and SVOCs in Soil.mxd; RDW;

Notes
SCO - Soil Cleanup Objective
ft bgs - Feet below ground surface

Soil Management Areas digitized from georeferenced images of the Environmental Management Plan (EMP) produced by Sterling Environmental Engineering (2009).

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 03 February 2016. Image is dated 2 June 2010.

Extent of Metals in Soil

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec consultants

Columbia, Maryland
February 2016

Figure 2-8

Legend

- ● Catch Basin
- ➔ Direction of Stormwater Flow
- ▬ Former Storm Water Sewer (Pre-1979)
- ─ · ─ Current Combined Industrial Sewer (Post-1979)
- ─ Former Sperry Remington Site (#808043) Investigation

Notes and Disclaimer

Former Combined Industrial Sewer (Pre-1979) and Current Storm Water Sewer (Post-1979) are georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Catch basin locations are approximate. Only catch basins related to the sewer inspection scope of work are presented on this figure.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 09 February 2016. Image is dated 2 June 2010.

Stormwater Sewer System

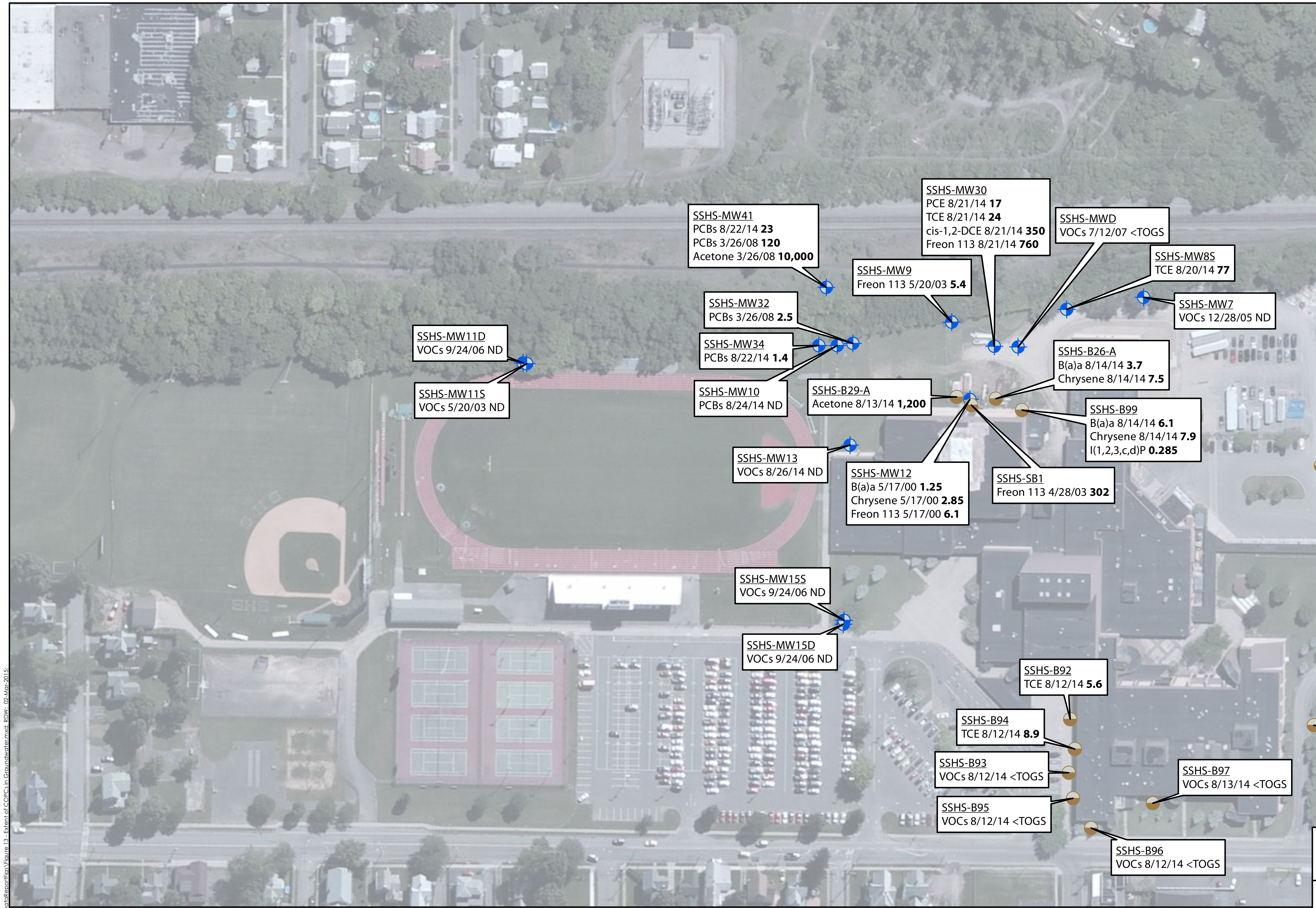
Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Columbia, Maryland
February 2016

Figure
2-9

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 2-9 - Stormwater Sewer System.mxd; RDW; 09-Feb-2016;



150 75 0 150 Feet

Legend

- ⊕ Production Well
- ◒ Soil Boring Location
- ⊕ Monitoring Well Location

Notes
COPC - Chemical of Potential Concern
VOC - Volatile Organic Compound
PCB - Polychlorinated Biphenyl
TOGS - Technical and Operational Guidance Series
TCE - Trichloroethene
cis-1,2-DCE - cis-1,2-Dichloroethene
B(a)a - Benzo(a)anthracene
I(1,2,3,c,d)P - Indeno(1,2,3-cd)Pyrene

Location ID
Parameter Date Concentration

Bold indicates an exceedance of TOGS.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 02 March 2015. Image is dated 2 June 2010.

Extent of COPCs in Groundwater

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Figure
2-10

Columbia, Maryland
February 2015

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 13 - Extent of COPCs in Groundwater.mxd; RDW; 02-Mar-2015;

Legend

- ▲ Indoor Air Sample Location
- ▲ Sub-Slab Soil Vapor Sample Location

Notes

All results presented in micrograms per meter-cubed (µg/m^3)

All sample locations are approximate and results are preliminary.

School layout drawings provided by Keystone Associates Architects, Engineers and Surveors, LLC (27 March 2009).

30 15 0 30 Feet

Measured Concentrations of Trichloroethene in Indoor Air and Sub-slab Vapor

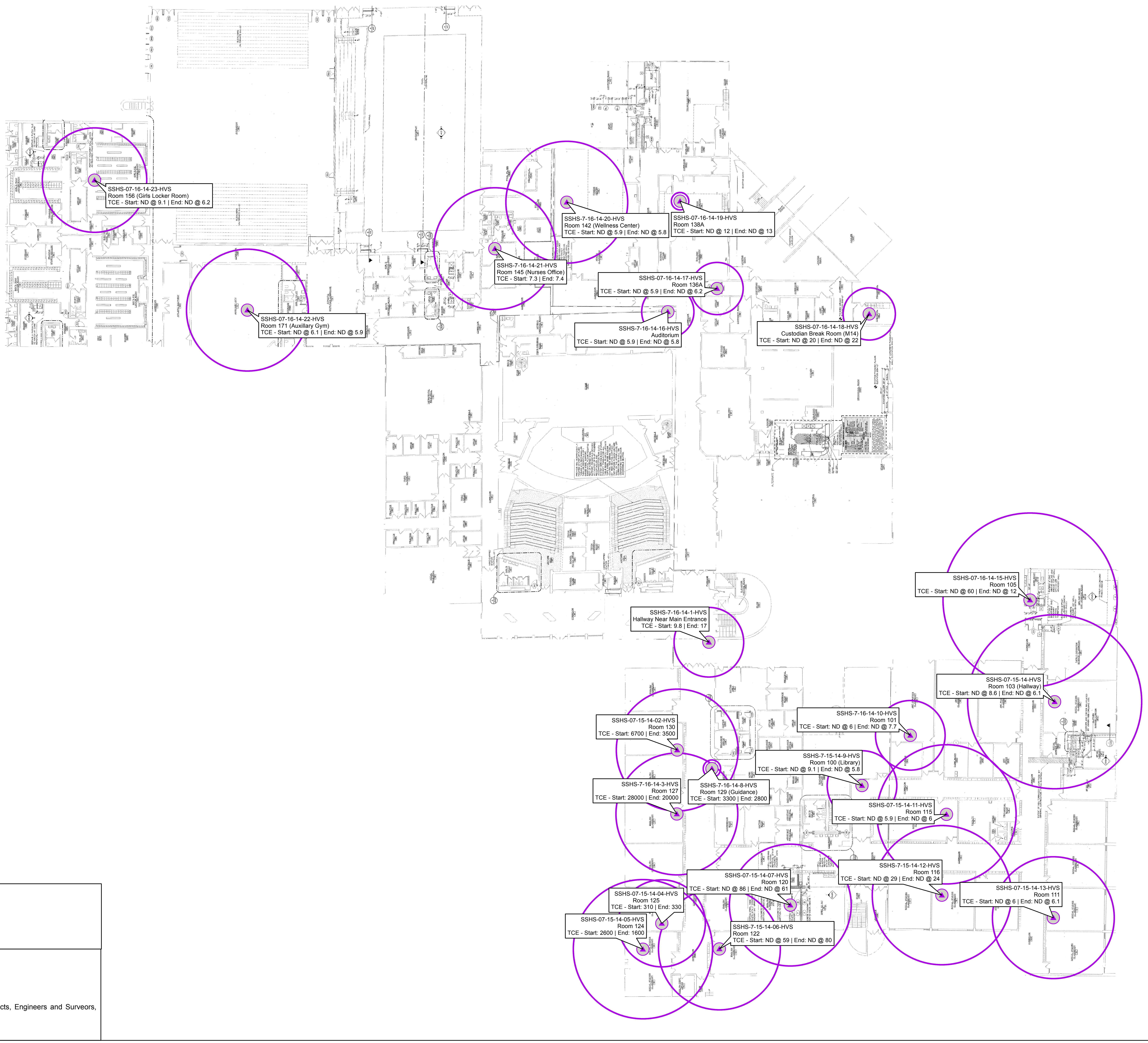
Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Columbia, Maryland

September 2014

Figure
2-11



Legend

▲ High-Volume Soil Vapor Sample Location

○ High-Volume Sample Radius of Influence

Notes

TCE - Trichloroethene
All results presented in micrograms per meter-cubed (μg/m^3)

All sample locations are approximate.

School layout drawings provided by Keystone Associates Architects, Engineers and Surveors, LLC (27 March 2009).

30 15 0 30 Feet

High-Volume Sample Locations and Trichloroethene Results

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec consultants

Columbia, Maryland

September 2014

Figure

2-12

Legend

- 🔵 Indoor Air Sample Location
- 🟢 Sub-Slab Soil Vapor Sample Location

Notes

All results presented in micrograms per meter-cubed (µg/m^3)

All sample locations are approximate and results are preliminary.

School layout drawings provided by Keystone Associates Architects, Engineers and Surveors, LLC (27 March 2009).

30 15 0 30 Feet

Observed Concentrations of Freon 12 in Indoor Air and Sub-slab Vapor

Former Sperry Remington - North Portion #808022
Elmira, New York

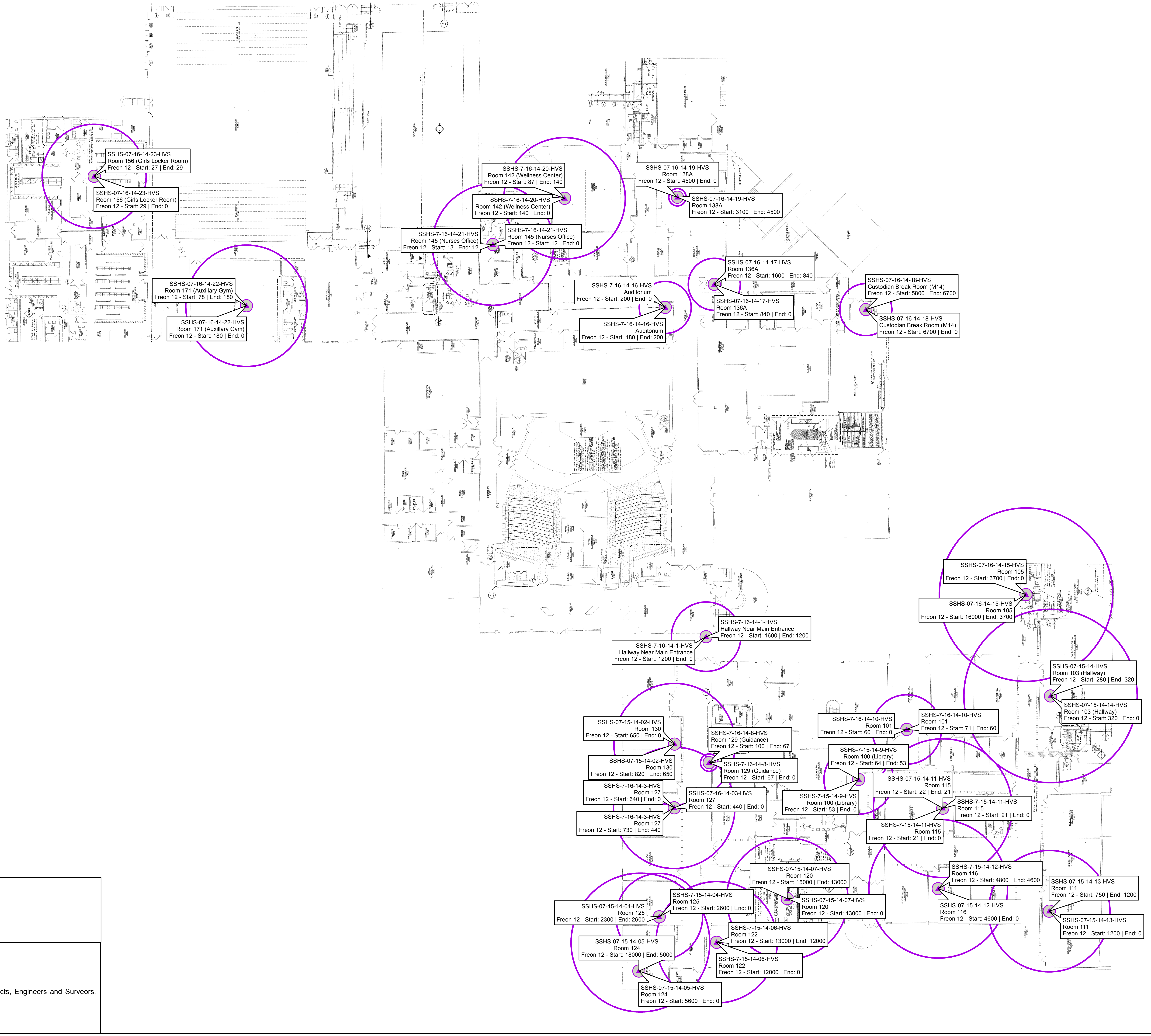
Geosyntec consultants

Columbia, Maryland

September 2014

Figure

2-13



Legend

- ▲ High-Volume Soil Vapor Sample Location
- ○ High-Volume Sample Radius of Influence

Notes

All results presented in micrograms per meter-cubed (µg/m^3)

All sample locations are approximate.

School layout drawings provided by Keystone Associates Architects, Engineers and Surveors, LLC (27 March 2009).

30 15 0 30 Feet

Observed Concentrations of Freon 12 in High Volume Sample Discharge Samples

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec consultants

Columbia, Maryland

September 2014

Figure

2-14

Legend

🟥 Areas with Temporary Cover

Notes

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 03 February 2016. Image is dated 2 June 2010.

Areas with Temporary Cover

Former Sperry Remington - North Portion #808022
Elmira, New York

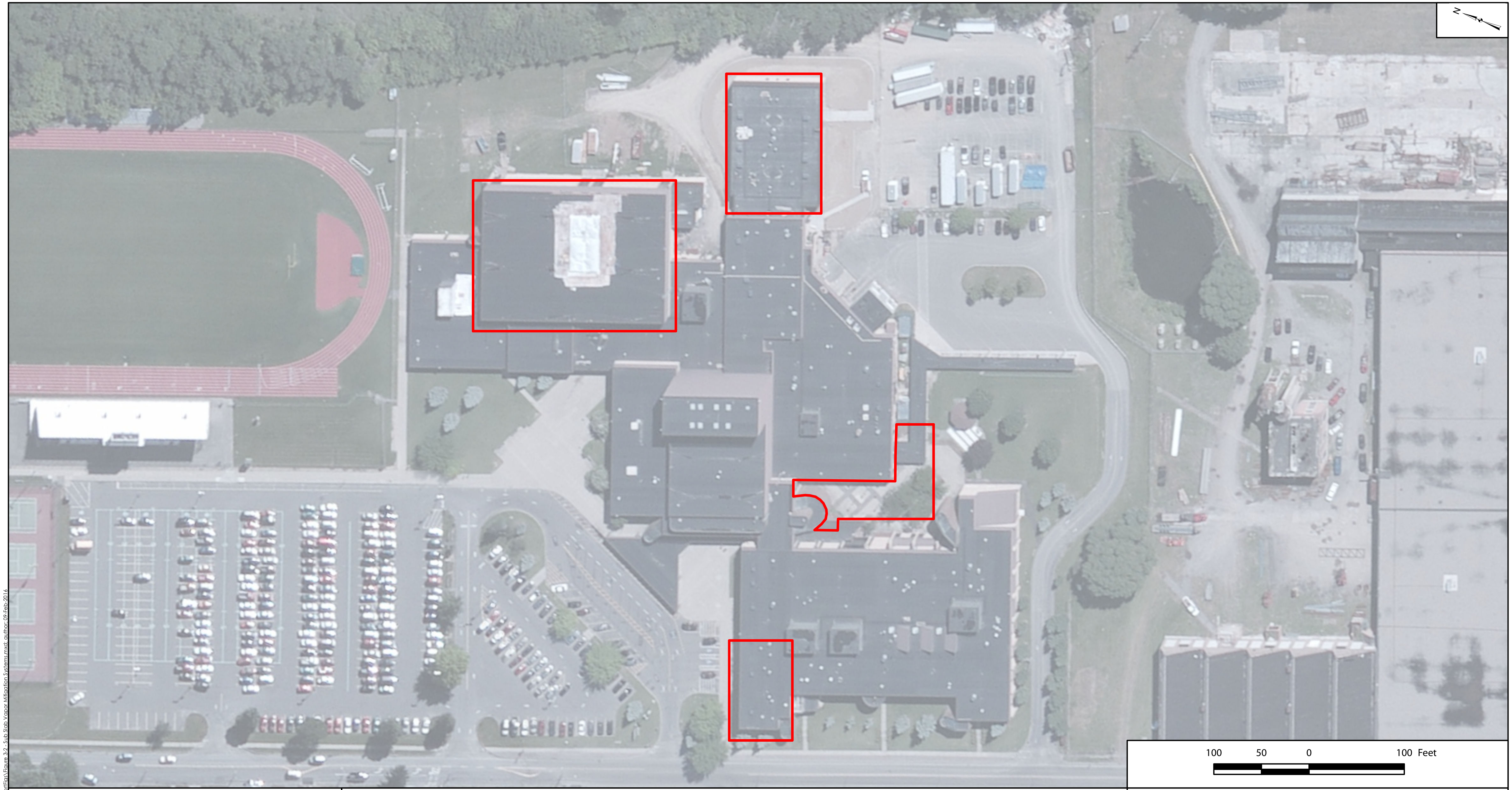
Geosyntec
consultants

Columbia, Maryland

December 2015

Figure
3-1

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 3-1 - Areas with Temporary Cover.mxd; author; 03-Feb-2016



Legend

🟥	Sub-Slab Vapor Mitigation

Notes

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 09 February 2016. Image is dated 2 June 2010.

Sub-Slab Vapor Mitigation Systems

Former Sperry Remington - North Portion #808022
Elmira, New York

Geosyntec
consultants

Columbia, Maryland

February 2016

Figure
3-2

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\SiteCharDataReportFigs\Figure 3-2 - Sub Slab Vapor Mitigation Systems.mxd; author; 09-Feb-2016

APPENDIX A –PROPERTY DESCRIPTION

FORM 556X N. Y. DEED—BARGAIN AND SALE (From a Corporation)

TUTBLANK REGISTERED U S PAT OFFICE
TUTTLE LAW PRINT, PUBLISHERS RUTLAND VT 05701

This Indenture,

LIBER 653 PAGE 925

33.00

Made the 15th *day of* June,

Nineteen Hundred and Seventy-seven.

Between MARINE MIDLAND BANK, formerly known as Marine Midland Bank-Southern

a corporation organized under the laws of the State of New York, with offices at 150 Lake Street, Elmira, New York,

party of the first part, and

CITY SCHOOL DISTRICT OF THE CITY OF ELMIRA, NEW YORK, a school district organized under the Education Law of the State of New York, with its principal office at 951 Hoffman Street, Elmira, New York,

party of the second part,

Witnesseth *that the party of the first part, in consideration of*---ONE-------- and NO/100-------------------------------------*Dollar* ($1.00----) *lawful money of the United States,* and other good and valuable consideration *paid by the party of the second part, does hereby grant and release unto the party of the second part,* its successors *and assigns forever, all* THAT TRACT OR PARCEL OF LAND situate in the City of Elmira, County of Chemung and State of New York, bounded and described as follows:

Beginning at a point in the northerly line of lands formerly belonging to Stephen Keating, which point is one hundred fifty (150) feet easterly from a point marking the northwest corner of said Keating lands located on the easterly line of South Main Street distant northerly four hundred ninety-one and ninety-four hundredths (491.94) feet from the northeasterly corner of South Main Street and O'Gorman Street; from said point of beginning running thence southerly parallel with the easterly line of South Main Street three hundred fifty-one and ninety-four hundredths (351.94) feet to a point; thence easterly parallel with O'Gorman Street one hundred and eighty (180) feet to a point; thence southerly parallel with South Main Street one hundred eighty (180) feet to a point in the southerly line of O'Gorman Street; thence easterly along the southerly line of O'Gorman Street three hundred thirty-three and forty-eight hundredths (333.48) feet to the westerly line of the right-of-way of the Erie Lackawanna Railway Company; thence northerly along said right-of-way five hundred thirty-one and eighty-one hundredths (531.81) feet more or less to a point in the westerly line of the right-of-way of said railroad company, said point marking the northeast corner of said Keating lands; thence westerly along the northerly line of said Keating lands five hundred nine and thirty-five hundredths (509.35) feet to the point of beginning.

Being the same premises conveyed to the party of the first part by Referee's Deed from Vernando J. Bonsignore, Referee, dated October 11, 1974, and recorded October 18, 1974 in Chemung County Clerk's Office in Liber 635 of Deeds at page 47.

The premises herein conveyed does not represent a substantial portion of the assets of the grantor.

The grantor covenants that it has not done or suffered anything which might adversely affect the marketability of the title of the premises.

The grantor also covenants that the grantee shall quietly enjoy the said premises and that the grantor will forever warrant the title to the premises.

Together *with the appurtenances and all the estate and rights of the party of the first part in and to said premises,*

To have and to hold *the premises herein granted unto the part*y *of the second part,* its successors *and assigns forever.*

That, in compliance with Section 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

In Presence of

In Witness Whereof, *the party of the first part has caused its corporate seal to be hereunto affixed, and these presents to be signed by its duly authorized officer this* 15th *day of* June, *Nineteen Hundred and* Seventy-seven.

MARINE MIDLAND BANK

By Paul G. Baxter
Paul G. Baxter, VICE PRESIDENT

ASSESSING OFFICE
ELMIRA, N. Y.
JUN 22 1977
Ruth Goloz
ASSESSOR

RECEIVED
$ 55.00
REAL ESTATE
JUN 15 1977
TRANSFER TAX
CHEMUNG
COUNTY

#2788

State of New York
County of CHEMUNG } ss. *On this* 15th *day of* June, *Nineteen Hundred and* Seventy-seven,
before me personally came PAUL G. BAXTER

to me personally known, who, being by me duly sworn, did depose and say that he *resides in* Town of Southport *that* he *is the* Vice President *of* Marine Midland Bank *the corporation described in, and which executed, the within Instrument; that* he *knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that* he *signed* his *name thereto by like order.*

Richard Denton
Notary Public

RICHARD DENTON 08-5989800
Notary Public, Chemung County
State of New York
Commission Expires 30th March 1978

FILED-RECORDED
JUN 15 4 29 PM 1977
CHEMUNG COUNTY
CLERK'S OFFICE
HARRY C. SHEPARD
COUNTY CLERK

650

THIS INDENTURE made this 21 day of April, 1977, between WESTINGHOUSE ELECTRIC CORPORATION, a Pennsylvania corporation having its principal office and place of business at Westinghouse Building, Gateway Center, Pittsburgh, Pennsylvania, party of the first part and THE CITY SCHOOL DISTRICT OF THE CITY OF ELMIRA, NEW YORK, a municipal corporation of the State of New York having its principal office and place of business at 951 Hoffman Street, Elmira, New York, party of the second part,

WITNESSETH that the party of the first part in consideration of one dollar ($1.00) lawful money of the United States and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, its successors and assigns forever:

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Elmira and Town of Southport, Chemung County, New York, bounded and described as follows:

BEGINNING at an iron pin in the easterly line of South Main Street in the City of Elmira located 60.30 feet southerly along said line from the intersection of the easterly line of South Main Street with the southerly line of O'Gorman Street and running thence north 74° 02' 00" east a distance of 150.00 feet to an iron pin; thence south 15° 03' 00" east a distance of 60.0 feet to an iron pin; thence north 74° 05' 00" east a distance of 112.00 feet to an iron pin; thence north 15° 03' 00" west a distance of 120.40 feet to an iron pin in the south line of O'Gorman Street; thence north 74° 02' 00" east a distance of 68.00 feet along the southerly line of O'Gorman Street to an iron pin; continuing thence north 74° 02' 00" east along a continuation easterly of the southerly line of O'Gorman Street a distance of 333.48 feet to an iron pin in the westerly line of the right-of-way of the former Erie Railroad Company; thence south 15° 46' 00" east along the westerly line of the right-of-way of the Erie Railroad Company a distance of 984.24 feet to an iron pin; thence continuing along the westerly right-of-way of the Erie Railroad Company south 26° 25' 47" east a distance of 635.25 feet to an iron pin; thence continuing along the westerly right-of-way of the Erie Railroad Company south 20° 06' 00" east a distance of 154.93 feet to an iron pin; thence south 73° 37' 30" west a distance of 350.0 feet to an iron pin; thence south 18° 31' 26" west a distance of 73.15 feet to an iron pin; thence south 74° 45' 53" west a distance of 175.46 feet to an iron

APR 21 4 53 PM 1977
CHEMUNG COUNTY CLERK'S OFFICE
FILED-RECORDED

ASSESSOR'S OFFICE
ELMIRA, N.Y.
APR 25 1977
ASSESSOR

2165

RECEIVED
$ Exempt
REAL ESTATE
APR 21 1977
TAX
CHEMUNG COUNTY

pin; thence north 60° 09' 32" west a distance of 118.91 feet to an iron pin; thence south 74° 50' 28" west a distance of 164.62 feet to an iron pin in the easterly line of South Main Street; thence north 15° 03' 00" west a distance of 1676.34 feet along the west line of South Main Street to the place of beginning.

Excepting and reserving an easement ten (10) feet in width running along the westerly line of the above described premises from the southwesterly corner thereof northerly a distance of 548.85 feet to the division line between the City of Elmira and the Town of Southport for the purpose of maintaining, repairing and replacing a sewer main.

Subject to a gas pipeline easement granted by Sperry Rand Corporation to the New York State Electric and Gas Corporation dated April 10, 1969 and recorded in Chemung County Clerk's Office in Liber 601 of Deeds at Page 663 as amended by agreement dated April 12, 1977, to be recorded in Chemung County Clerk's Office and subject to the right reserved to the City of Elmira to maintain a sewer line in what was formerly Scott Street reserved in a quitclaim deed from the City of Elmira to Morrow Manufacturing Company dated October 31, 1916 and recorded in Chemung County Clerk's Office in Liber 182 of Deeds at Page 127.

Being the same premises conveyed by the Chemung County Industrial Development Agency to Westinghouse Electric Corporation by Deed dated April 21, 1977, to be recorded in the Chemung County Clerk's Office.

Together with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

To have and to hold the premises herein granted unto the party of the second part, its successors and assigns forever,

The party of the first part does hereby covenant that it has not done nor suffered anything to be done which will in any way encumber the title to the above described premises.

Pursuant to the Lien Law of the State of New York the party of the first part does hereby covenant and agree that it will hold the consideration received for this conveyance and the right to receive such consideration as a trust fund to be used first for the payment of the cost of any improvements which may have been made on the above described premises within four months preceding the date of this conveyance.

IN WITNESS WHEREOF the party of the first part has caused this deed to be executed by its duly authorized officers and its corporate seal to be affixed as of the day and year first above written.

WESTINGHOUSE ELECTRIC CORPORATION,

By ______________________

Its Vice President

Approved as to form J.D.S.

Attest: ______________________

Its Assistant Secretary

State of Pennsylvania,)
: ss.
County of Allegheny .)

On the 19th day of April, 1977, before me, personally came S. W. Herwald, to me known, who being by me duly sworn, did depose and say that he resides at ______________, in the City of Pittsburgh, Allegheny County, Pennsylvania; that he is the Vice President of Westinghouse Electric Corporation the corporation described in and which executed the foregoing deed; that he knows the seal of said corporation; that the seal affixed to said deed is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation and that he signed his name thereto by like order.

Jeanne F. Kandsberger

Notary Public

JEANNE F. KANDSBERGER, Notary Public
Pittsburgh, Allegheny County, Pa
My Commission Expires
July 27, 1978

Allegheny County,
Commonwealth of Pennsylvania, } ss:

I, John P. Joyce, Prothonotary of the Court of Common Pleas in and for the County of Allegheny, in the Commonwealth of Pennsylvania, the same being a Court of Law and Record, and having a seal, do hereby certify that Jeanne F Kandsberger Esquire, before whom the foregoing ACKNOWLEDGMENT or AFFIDAVIT was taken, and who has thereunto, in his or her own proper handwriting, subscribed his or her name to the certificate of the proof and acknowledgment of the annexed instrument, was at that time and is now a NOTARY PUBLIC in and for the Commonwealth of Pennsylvania, resident of said County aforesaid, duly commissioned and sworn and authorized by law to take and certify affidavits and the acknowledgments and proof of deeds to land, etc., to be recorded, to all whose acts as such due faith and credits are, and of right ought to be, given throughout the United States and elsewhere; and further, that said instrument is executed in accordance with the laws of this Commonwealth, and that I am acquainted with his or her signature and seal, and believe the same to be genuine.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of the said Court, at Pittsburgh, in said County this 19 day of April in the year of our Lord one thousand nine hundred and ....

John P. Joyce .... Prothonotary.

20928 By .... Deputy

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Mike Dunn Representative of ECSD (Site Owner)	Phone: 607-735-3980 Email: mdunn@elmiracityschools.com
Kevin Krueger, PE Representative of Unisys Corporation (Remedial Party)	Phone: 651-687-2210 Email: kevin.krueger@unisys.com
Paul Brookner, PG Geosyntec Consultants, Inc .	Phone: 612-253-8200 Email: pbrookner@geosyntec.com
Aron Krasnopoler, Ph. D., PE Beech and Bonaparte Engineering, PC	Phone: 410-381-4333 Email: akrasnopoler@geosyntec.com
Timothy Schneider, PE NYSDEC DER Project Manager	Phone: 585-226-5480 Email: timothy.schneider@dec.ny.gov
Bernette Schilling, PE NYSDEC Regional HW Engineer	Phone: 585-226-5315 Email: bernette.schilling@dec.ny.gov
Kelly Lewandowski, PE NYSDEC Site Control	Phone: 518-402-9553 Email: kelly.lewandowski@dec.ny.gov

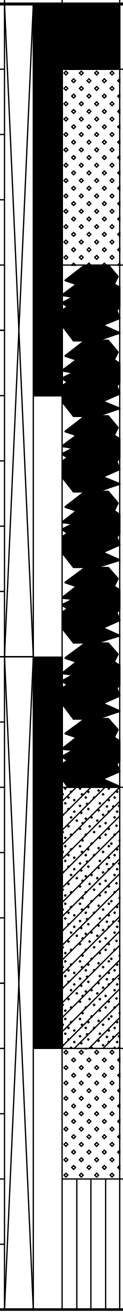
APPENDIX C

HISTORIC SOIL BORING LOGS

BORING B100

PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/15/14 **COMPLETED** 8/15/14
NORTHING 753812 ft **EASTING** 762745 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY A. Wadhawan **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)	
	ASPHALT	0.1	0.0
	WELL GRADED SAND WITH GRAVEL, medium grained, moist, brown to black, fill material	0.1	
		0.3	
		0.1	
	Black, ash like material	0.1	
2.5		0.1	2.5
		0.1	
		0.1	
		0.1	
		0	
5.0		2.3	5.0
		0.3	
	CLAYEY SAND WITH GRAVEL, medium to coarse grained, moist, brown, low plasticity	0.1	
		0.1	
		0.1	
7.5		0.1	7.5
	WELL GRADED SAND WITH GRAVEL, fine to coarse grained, moist, brown	0.1	
		0.1	
	Medium dense, SILT, moist, brown and gray	0.1	
		0.1	

(Continued Next Page)

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BORING B100

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			Medium dense, SILT, moist, brown and gray *(continued)*	0.1
				0.1
			LEAN CLAY, with silt, moist, brown and gray, low plasticity	0.1
				0.1
				0.1
12.5				0.1
			WELL GRADED SAND WITH GRAVEL, medium to coarse grained, wet, brown	0.1
				0.1
				0.1
				0.1
15.0			Bottom of borehole at 15.0 feet.	
17.5				
20.0				

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BORING B101

PAGE 1 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/14/14 **COMPLETED** 8/14/14

NORTHING 753860 ft **EASTING** 762682 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

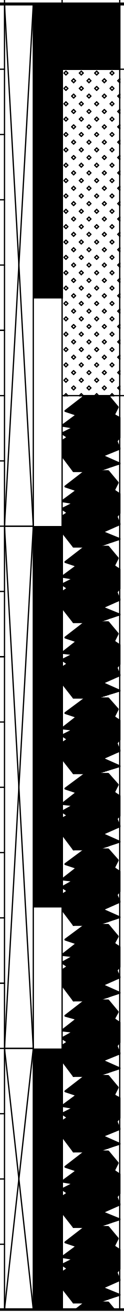
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY N. Gutschow **CHECKED BY** A. Gray

NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	WELL GRADED SAND WITH GRAVEL, fill material	0
		0
2.5		
	Black, ash like material	0
		0
5.0		0
		0
		0
7.5		
		0
		0

(Continued Next Page)

BORING B101

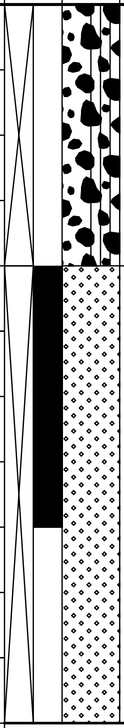
PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Dense, WELL GRADED GRAVEL WITH SILT, fine to medium grained, moist, brown	0
		0
	WELL GRADED SAND WITH GRAVEL, fine to medium grained, moist to wet, gray, some odor	0.1
12.5		
		0.1
		0.1
15.0		0.1

Refusal at 15.5 feet.
Bottom of borehole at 15.5 feet.

17.5

20.0

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BORING B102

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/3/15	**COMPLETED** 8/3/15	**NORTHING** 753682.8316 ft	**EASTING** 762778.2307 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
	SSHS-B102-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	7.7
2.5	SSHS-B102-SUB- 2-4	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown, trace oxidation	0.3
		No Recovery	
		SAND, little fine to coarse gravel, moist, brown with black	
5.0	SSHS-B102-SUB- 4-6	SAND, some fine to coarse gravel, trace silt, moist, brown	1.2
		Moist, Brick	
	SSHS-B102-SUB- 6-8	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	8.2
7.5		No Recovery	
	SSHS-B102-SUB- 8-10	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown with black, trace brick	4.2
		SILT, moist, brown	
		No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B103

PAGE 1 OF 1

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/22/15 **COMPLETED** 7/22/15

NORTHING 753664.2776 ft **EASTING** 762759.7233 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B103-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown with black, little plant matter	5.7
		SAND, some fine to coarse gravel, dry, brown	
2.5	SSHS-B103-SUB- 4-6	SAND, some fine to coarse gravel, few black shiny material (ash), trace silt, moist, black, hydrocarbon odor	15.1
		No Recovery	
5.0	SSHS-B103-SUB- 6-8	SAND, some black shiny material (ash), moist, black	2.6
	SSHS-B103-SUB- 2-4	SAND, some silt, few fine to coarse gravel, moist, yellow with black	0.8
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B104

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/22/15	**COMPLETED**	7/22/15
NORTHING	753651.9221 ft	**EASTING**	762732.0053 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			SAND, some silt, moist, brown, trace organic matter	4
			SAND, few black shiny material (ash), some fine to coarse gravel, moist, dark brown and black, trace brick	
				2.1
2.5				
			SAND, some black shiny material (ash), trace fine gravel, moist, black	3
5.0			SAND, some fine to coarse gravel, moist, yellow with black	
				0.7
7.5				

Bottom of borehole at 8.0 feet.

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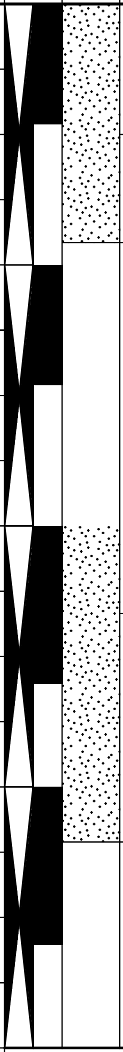
BORING B105

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/22/15 **COMPLETED** 7/22/15
NORTHING 753640.0774 ft **EASTING** 762700.8991 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	SAND, some fine to coarse gravel, moist, brown, trace organic material (roots), little oxidation color	2.8
	SAND, some black shiny material (ash), some fine to coarse gravel, trace silt, moist, brown, little oxidation color	
		1
2.5		
	SAND, some black shiny material (ash), few silt, moist, black	4.1
	SAND, some silt, few fine to coarse gravel, moist, yellow with black	
5.0		
		0.5
7.5		

Bottom of borehole at 8.0 feet.

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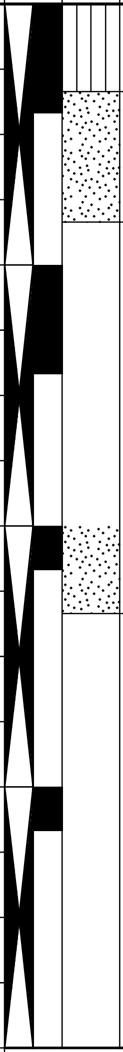
BORING B106

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/22/15 **COMPLETED** 7/22/15	**NORTHING**	753630.0954 ft **EASTING** 762674.4062 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			



DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			SILT, moist, brown, trace organic matter	2.2
			SAND, some fine to coarse gravel, trace silt, moist, brown	
				0.9
2.5				
			SAND, little fine gravel, moist, brown with black	1.3
5.0				
				0.8
7.5				

Bottom of borehole at 8.0 feet.

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BORING B106A

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/3/15 **COMPLETED** 8/3/15

NORTHING 753630.0954 ft **EASTING** 762674.4062 ft

DRILLER Zebra Environmental

GROUND ELEVATION ---

BORING DIAMETER 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna

CHECKED BY J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown, little brick	26.7
2.5		SAND, moist, yellow	21.1
		Becomes black shiny material (ash), moist	
		No Recovery	
5.0		Becomes black shiny material (ash), moist	
		SAND, some fine to coarse gravel, moist, yellowish orange, oxidation color	
7.5		SILT, trace sand, moist, yellow	2.5
		SAND, little silt, moist, yellow	
		Black shiny material (ash), moist	
	SSHS-B106A-SUB- 8-10	SAND, some fine to coarse gravel, little silt, moist, yellow	1.2

(Continued Next Page)

BORING B106A

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING B107

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/22/15 **COMPLETED** 7/22/15
NORTHING 753615.8595 ft **EASTING** 762646.8004 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B107-SUB- 0-2	SILT, trace organic matter	1.7
	SSHS-B107-SUB- 2-4	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	1
2.5		No Recovery	
		SAND, some fine to coarse gravel, little black shiny material (ash), moist, black	
5.0	SSHS-B107-SUB- 4-6	SAND, some fine to coarse gravel, dry, grayish	0.7
	SSHS-B107-SUB- 6-8	SAND, some silt, few fine to coarse gravel, moist, yellow	0.7
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B108

PAGE 1 OF 1

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/22/15	**COMPLETED** 7/22/15	**NORTHING** 753605.8022 ft	**EASTING** 762617.2244 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN	RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			SSHS-B108-SUB-0-2		SILT, moist, brown, trace organic matter	32.6
			SSHS-B108-SUB-2-4		SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown	10.6
2.5					No Recovery	
					SILT, little fine gravel, moist, brown	4.8
5.0			SSHS-B108-SUB-4-6		SAND, some black shiny material (ash), moist, black	0.7
			SSHS-B108-SUB-6-8		SAND, some fine to coarse gravel, moist, brown	
7.5					No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B109

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/21/15	**COMPLETED**	7/21/15
NORTHING	753694.0851 ft	**EASTING**	762766.1624 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B109-SUB- 0-2		SAND, some fine to coarse gravel, trace silt, moist, brown	1.2
		SSHS-B109-SUB- 2-4		SAND, some black shiny material (ash), moist, brown	2.1
2.5				No Recovery	
				SAND, some black shiny material (ash), trace fine gravel, moist, black	
5.0		SSHS-B109-SUB- 4-6		SILT, moist, yellow	2.2
				SAND, trace black shiny material (ash), trace silt, moist, brown, trace brick	
		SSHS-B109-SUB- 6-8		POORLY GRADED GRAVEL WITH SAND, SAND, dry, gray	1.1
7.5				SAND, some fine to coarse gravel, trace silt, moist, yellow	
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B110

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/21/15 **COMPLETED** 7/21/15
NORTHING 753689.0901 ft **EASTING** 762722.5684 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B110-SUB- 0-2	ASPHALT, and gravel	4.3
		SAND, some fine to coarse gravel, moist, brown with black	
	SSHS-B110-SUB- 2-4	SAND, some black shiny material (ash), little fine to coarse gravel, trace silt, moist, black	1.6
2.5		No Recovery	
		SAND, little fine gravel, trace silt, moist, black	
		SAND, some coarse gravel, moist, brown	
5.0	SSHS-B110-SUB- 4-6	Black shiny material (ash), some sand, moist, black	2.8
	SSHS-B110-SUB- 6-8	SILT, little coarse gravel, moist, yellow with black	0.9
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B111

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/21/15	**COMPLETED** 7/21/15	**NORTHING** 753658.5601 ft	**EASTING** 762646.0421 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
		SSHS- B111- SUB- 0-2	■	ASPHALT, and gravel	1.9	0.0
		SSHS- B111- SUB- 2-4	⁘	SAND, some fine to coarse gravel, moist, brown	1.4	
2.5				No Recovery		2.5
			⁘	SAND, some fine to coarse gravel, trace silt, moist, brown with black		
5.0		SSHS- B111- SUB- 4-6	⁘	SAND, some black shiny material (ash), little fine gravel, moist, black	0.9	5.0
		SSHS- B111- SUB- 6-8	⁘	SAND, few black shiny material (ash), little fine to coarse gravel, trace silt, moist, yellow	0.8	
7.5				No Recovery		7.5

Bottom of borehole at 8.0 feet.

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BORING B112

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/22/15 **COMPLETED** 7/22/15
NORTHING 753634.653 ft **EASTING** 762587.6743 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 7' Depth of run

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
	SSHS-B112-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown with black	1.7
2.5	SSHS-B112-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown and black	1.4
		No Recovery	
		SAND, some fine to coarse gravel, wet, brown	
5.0	SSHS-B112-SUB- 4-6	SAND, some fine to coarse gravel, trace silt, moist, brown	1.2
		POORLY GRADED GRAVEL WITH SAND, SAND, dry, grayish	
	SSHS-B112-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown and black	2.5
		No Recovery	
7.5			

Refusal at 7.0 feet.
Bottom of borehole at 7.0 feet.

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BORING B114

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/31/15	**COMPLETED**	7/31/15
NORTHING	753723.5311 ft	**EASTING**	762779.7868 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■	SSHS-B114-SUB- 0-2	■	ASPHALT, and gravel	10.4
	■		░	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown	
	■		░	SAND, moist, yellow	13.9
2.5	■	SSHS-B114-SUB- 2-4	░	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown with black, trace brick	
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B115

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/21/15 **COMPLETED** 7/21/15

NORTHING 753711.3182 ft **EASTING** 762760.3636 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■		■	ASPHALT, and gravel	
	■	SSHS-B115-SUB- 0-2	⁘	SAND, some fine to coarse gravel, moist, brown, trace brick pieces	2.8
2.5	■	SSHS-B115-SUB- 2-4	▩	Black shiny material (ash), trace sand, moist, black	1.5
	☐			No Recovery	
	■		▩	Black shiny material (ash), few gravel, moist, black	
5.0	■	SSHS-B115-SUB- 4-6 SSHS-B115-SUB- 6-8	⁘	SAND, little fine to coarse gravel, trace black shiny material (ash), moist, yellow with black	0.9 0.6
7.5	■		▥	SILT, little fine to coarse gravel, trace sand, moist, yellow	
	☐			No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B116

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/20/15 **COMPLETED** 7/20/15

NORTHING 753719.1621 ft **EASTING** 762746.1929 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■		■	ASPHALT, and gravel, dry	
	■	SSHS-B116-SUB- 0-2	○	POORLY GRADED GRAVEL WITH SAND, dry, brown	0.6
	■		⁘	SAND, some gravel, trace black shiny material (ash), moist, brown with black	
	■	SSHS-B116-SUB- 2-4	⁘	SAND, moist, black, No Recovery	1
2.5	□				
	■		▩	Black shiny material (ash), some fine to coarse gravel, moist	
5.0	■	SSHS-B116-SUB- 4-6	⁘	SAND, some fine to medium gravel, few black shiny material (ash), moist, black	0.6
	■	SSHS-B116-SUB- 6-8	⁘	SAND, moist, yellow	0.6
7.5	□			No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B117

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/20/15	**COMPLETED**	7/20/15
NORTHING	753710.6104 ft	**EASTING**	762722.2448 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel, dry	
		SSHS-B117-SUB- 0-2		POORLY GRADED GRAVEL WITH SAND, dry, brown	0.8
		SSHS-B117-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black, trace brick	0.9
2.5				No Recovery	
				POORLY GRADED GRAVEL WITH SAND, dry, brown	
5.0		SSHS-B117-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black	2.8
		SSHS-B117-SUB- 6-8		SAND, some fine to coarse gravel, few black shiny material (ash), moist, black	1.8
				SILT, trace sand, moist, yellow	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B117A

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753710.6104 ft **EASTING** 762722.2448 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
		SAND, some fine to coarse gravel, moist, brown	34.6
		SAND, few black shiny material (ash), moist, black	
2.5		SAND, some silt, few fine to coarse gravel, moist, brown with yellow, trace brick, trace oxidation color	2.1
		No Recovery	
5.0		SAND, some fine to coarse gravel, moist, brown with black	
7.5		SAND, some black shiny material (ash), little black shiny material (ash), moist, black	6.9
		SILT, little fine gravel, moist, yellow	
		SAND, some black shiny material (ash), little fine to coarse gravel, moist, black	
	SSHS-B117a-SUB- 8-10	SAND, some fine to coarse gravel, few silt, moist, yellow	3.6

(Continued Next Page)

BORING B117A

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
			⁙	SAND, some fine to coarse gravel, few silt, moist, yellow *(continued)*	
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING B118

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/20/15 **COMPLETED** 7/20/15
NORTHING 753708.0079 ft **EASTING** 762697.435 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel, dry	
		SSHS-B118-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	1.5
		SSHS-B118-SUB- 2-4		SAND, some fine to coarse gravel, few silt, moist, brown, hydrocarbon odor	0.9
2.5				SAND, few fine gravel, moist, brown	
				No Recovery	
5.0		SSHS-B118-SUB- 4-6		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	1.8
		SSHS-B118-SUB- 6-8		SAND, some fine to coarse gravel, moist, black	0.8
				SAND, moist, yellow	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B119

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/21/15	**COMPLETED**	7/21/15
NORTHING	753692.2007 ft	**EASTING**	762665.0353 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			■	ASPHALT, and gravel	
		SSHS-B119-SUB- 0-2	▨	SAND, some fine to coarse gravel, moist, brown with red	7
		SSHS-B119-SUB- 2-4	▨	SAND, some fine to coarse gravel, moist, brown	0.8
2.5				No Recovery	
5.0		SSHS-B119-SUB- 4-6 SSHS-B119-SUB- 6-8	▨	SAND, some fine to coarse gravel, little silt, moist, black, trace brick, trace oxidation color	2.8 1
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B119A

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/3/15	**COMPLETED** 8/3/15	**NORTHING** 753692.2007 ft	**EASTING** 762665.0353 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■		■	ASPHALT, and gravel	
	■		⁘	SAND, some fine to coarse gravel, moist, brown	
2.5	■		⁘	SAND, few fine to coarse gravel, little black shiny material (ash), trace silt, moist, brown and black	7.6
				No Recovery	
5.0	■		⁘	SAND, some black shiny material (ash), moist, black	0.9
7.5	■		‖	SILT, few fine to coarse gravel, few sand, moist, yellow	
				No Recovery	
	■		⁘	SAND, some black shiny material (ash), few silt, moist, black	
	■	SSHS-B119a-SUB- 8-10	‖	SILT, few sand, little fine to coarse gravel, moist, yellow	1

(Continued Next Page)

BORING B119A

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
				No Recovery	
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

BORING B120

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/21/15 **COMPLETED** 7/21/15
NORTHING 753690.7996 ft **EASTING** 762630.8366 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B120-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with reddish black	1.8
				SAND, some black shiny material (ash), little fine gravel, moist, black	
		SSHS-B120-SUB- 2-4		SAND, some fine to coarse gravel, trace silt, moist, brown with black	1.3
				Black shiny material (ash), moist	
				No Recovery	
2.5					
				SAND, little fine gravel, trace silt, moist, black	
				SAND, some fine to coarse gravel, moist, brown	
		SSHS-B120-SUB- 4-6		SAND, some black shiny material (ash), moist, black	1.2
5.0					
		SSHS-B120-SUB- 6-8		SAND, some fine to coarse gravel, little black shiny material (ash), moist, yellow with black	2.2
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B121

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/24/15 **COMPLETED** 7/24/15
NORTHING 753673.4165 ft **EASTING** 762602.3815 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 7' Depth of run

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B121-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown and black	22.6
2.5		SSHS-B121-SUB- 2-4		SAND, some fine to coarse gravel, trace silt, moist, black	2.3
				No Recovery	
		SSHS-B121-SUB- 4-6		SAND, few fine gravel, moist, brown	11.6
5.0				SAND, some fine to coarse gravel, trace silt, moist, black	
				SAND, some fine to coarse gravel, moist, brown, trace oxidation like color	
		SSHS-B121-SUB- 6-7		Black shiny material (ash), moist	2.2
7.5					

Refusal at 7.0 feet.
Bottom of borehole at 7.0 feet.

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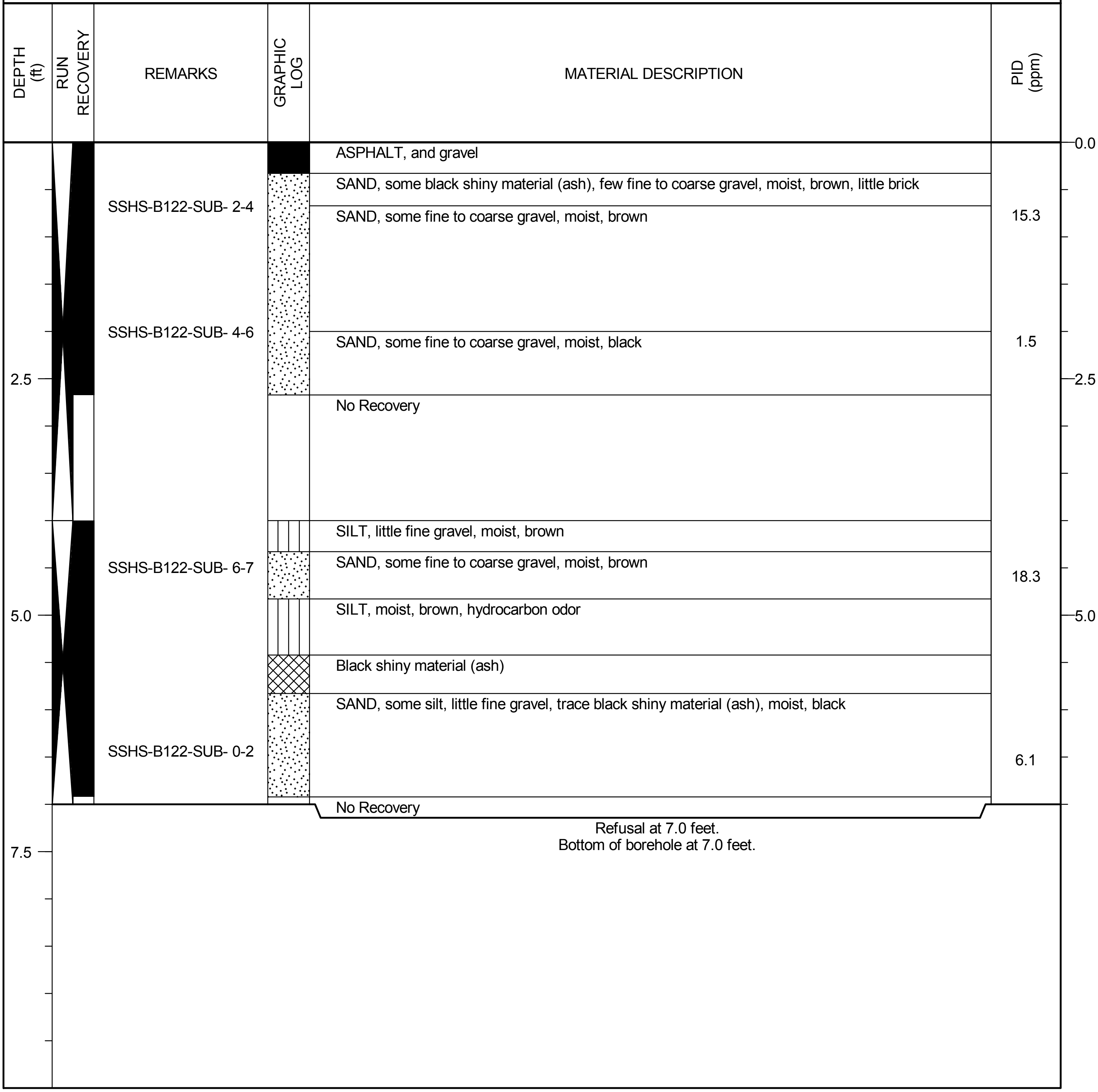
BORING B122

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/22/15 **COMPLETED** 7/22/15
NORTHING 753655.6339 ft **EASTING** 762579.8749 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 7' Depth of run



DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
		SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown, little brick	
	SSHS-B122-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown	15.3
2.5	SSHS-B122-SUB- 4-6	SAND, some fine to coarse gravel, moist, black	1.5
		No Recovery	
		SILT, little fine gravel, moist, brown	
	SSHS-B122-SUB- 6-7	SAND, some fine to coarse gravel, moist, brown	18.3
5.0		SILT, moist, brown, hydrocarbon odor	
		Black shiny material (ash)	
	SSHS-B122-SUB- 0-2	SAND, some silt, little fine gravel, trace black shiny material (ash), moist, black	6.1
		No Recovery	
7.5			

Refusal at 7.0 feet.
Bottom of borehole at 7.0 feet.

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BORING B123
PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/3/15 **COMPLETED** 8/3/15	**NORTHING**	753661.2712 ft **EASTING** 762551.1029 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■		■	ASPHALT, and gravel	
	■	SSHS-B123-SUB- 0-2	⁙	SAND, some fine to coarse gravel, moist, brown	52.3
2.5	■	SSHS-B123-SUB- 2-4	⁙	SAND, trace fine to coarse gravel, moist, brown and black, trace brick	0.6
	□			No Recovery	
	■		⁙	SAND, little fine gravel, moist, brown, some oxidation color	
	■	SSHS-B123-SUB- 4-6	▩	Moist, Brick, red	4.2
5.0	■		⁙	SAND, some coarse gravel, moist, brown with black	
	■		▩	Black shiny material (ash), moist	
	■	SSHS-B123-SUB- 6-8	⁙	SAND, some fine to coarse gravel, moist, brown	0.2
7.5	□			No Recovery	
	■	SSHS-B123-SUB- 8-10	⁙	SAND, some black shiny material (ash), little fine gravel, moist, brown, trace brick	1.7
	■		‖	SILT, little fine gravel, moist, brown	
	□			No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B124

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753772.9467 ft **EASTING** 762726.1287 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B124-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	46
				Moist, Brick, red	
		SSHS-B124-SUB- 2-4		POORLY GRADED GRAVEL WITH SAND, coarse gravel, moist, gray	8.8
2.5				No Recovery	
		SSHS-B124-SUB- 4-6		POORLY GRADED GRAVEL WITH SAND, coarse gravel, moist, brown, some brick	6.5
				SAND, little gravel, moist, brown	
5.0		SSHS-B124-SUB- 6-8		SAND, little fine gravel, moist, black, hydrocarbon odor	51.4
7.5				No Recovery	
		SSHS-B124-SUB- 8-10		SAND, some fine to coarse gravel, little silt, moist, brown, trace brick	29.1
				SILT, moist, black, hydrocarbon odor	
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B125

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/31/15 **COMPLETED** 7/31/15

NORTHING 753753.756 ft **EASTING** 762734.2409 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN	RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				■	ASPHALT, and gravel	
			SSHS-B125-SUB- 0-2 SSHS-B125-SUB- 2-4	░	SAND, some fine to coarse gravel, moist, brown, trace oxidation color	30.2 4.9
2.5					No Recovery	
5.0			SSHS-B125-SUB- 4-6	░	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown, trace oxidation color	19
			SSHS-B125-SUB- 6-8	░	SAND, some fine to coarse gravel, little silt, moist, brown, hydrocarbon odor	17.9
7.5					No Recovery	
			SSHS-B125-SUB- 8-10	░	SAND, some fine to coarse gravel, moist, brown	
				░	SAND, some silt, few fine to coarse gravel, moist, hydrocarbon odor	33.9
					No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B126

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/31/15 **COMPLETED** 7/31/15	**NORTHING**	753738.7133 ft **EASTING** 762706.9466 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B126-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown	
				Black shiny material (ash), moist	23
2.5		SSHS-B126-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black, trace oxidation color	1.1
				No Recovery	
5.0		SSHS-B126-SUB- 4-6 SSHS-B126-SUB- 6-8		SAND, some fine to coarse gravel, trace silt, moist, brown, few oxidation color	2.1 0.4
7.5				SAND, some fine to coarse gravel, few silt, moist, brown	
				No Recovery	
		SSHS-B126-SUB- 8-10		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	17.6
				SAND, some fine to coarse gravel, moist, greenish, hydrocarbon odor	
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B127

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/31/15 **COMPLETED** 7/31/15
NORTHING 753729.7211 ft **EASTING** 762689.0844 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			■	ASPHALT, and gravel	
		SSHS-B127-SUB- 0-2	⋰	SAND, some fine to coarse gravel, moist, brown, trace brick	7.2
		SSHS-B127-SUB- 2-4	▩	Black shiny material (ash), moist	0.9
2.5				No Recovery	
		SSHS-B127-SUB- 4-6	▩	Black shiny material (ash), some fine gravel, moist	5.3
5.0			▥	SILT, moist, yellow	
		SSHS-B127-SUB- 6-8	⋰	SAND, some black shiny material (ash), moist, black SAND, some silt, little fine to coarse gravel, moist, brown	0.4
7.5				No Recovery	
			▩	Black shiny material (ash), some coarse gravel, moist	
		SSHS-B127-SUB- 8-10	⋰	SAND, some fine to coarse gravel, moist, brown	1.2

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BORING B127

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
	■		▨	SAND, some fine to coarse gravel, moist, brown *(continued)*	
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING B129
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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/31/15	**COMPLETED**	7/31/15
NORTHING	753722.1877 ft	**EASTING**	762650.9146 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
2.5	SSHS-B129-SUB- 0-2	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	10.7
	SSHS-B129-SUB- 2-4	SAND, some black shiny material (ash), moist, black	6.9
		No Recovery	
5.0	SSHS-B129-SUB- 4-6	SAND, some black shiny material (ash), little fine to coarse gravel, moist, black	14.2
	SSHS-B129-SUB- 6-8	SAND, some coarse gravel, trace black shiny material (ash), moist, brown	1.4
7.5		No Recovery	
	SSHS-B129-SUB- 8-10	SAND, some black shiny material (ash), little gravel, moist, black	4.7
		SAND, some fine to coarse gravel, moist, brown	
		No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B130

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/21/15 **COMPLETED** 7/21/15
NORTHING 753710.9539 ft **EASTING** 762622.5607 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
	SSHS-B130-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	2
	SSHS-B130-SUB- 0-2	SAND, some fine to coarse gravel, trace silt, trace black shiny material (ash), moist, black	1.6
2.5		SAND, some fine gravel, moist, brown, few brick pieces	
		No Recovery	
		SAND, few silt, little fine gravel, moist, brown	
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B130-SUB- 0-2	SAND, few silt, moist, black	1.2
		SAND, some fine to coarse gravel, moist, black	
	SSHS-B130-SUB- 0-2	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	1.2
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

BORING B131

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/24/15	**COMPLETED**	7/24/15
NORTHING	753704.8425 ft	**EASTING**	762589.8467 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B131-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	2.3
	SSHS-B131-SUB- 2-4	SAND, some fine to coarse gravel, moist, black	2.2
2.5		No Recovery	
		SAND, little fine gravel, moist, black	
5.0	SSHS-B131-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown with black	2.5
	SSHS-B131-SUB- 6-8		4.6
7.5		SAND, some fine to coarse gravel, moist, black	
		No Recovery	

Bottom of borehole at 8.0 feet.

BORING B132

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/22/15	**COMPLETED** 7/22/15	**NORTHING** 753682.0442 ft	**EASTING** 762567.6861 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES Refusal at 7' Depth of run			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
				POORLY GRADED GRAVEL WITH SAND, dry, brown	
		SSHS-B132-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	8
2.5		SSHS-B132-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown and black	6.8
				No Recovery	
		SSHS-B132-SUB- 4-6		SAND, some fine to coarse gravel, few silt, moist, black	61.7
5.0		SSHS-B132-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	9.4
				SAND, some silt, moist, black	
				No Recovery	
7.5				Refusal at 7.0 feet. Bottom of borehole at 7.0 feet.	

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BORING B133

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753685.3606 ft **EASTING** 762542.3865 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B133-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	4.7
2.5		SSHS-B133-SUB- 2-4		SAND, few fine to coarse gravel, moist, brown and black, trace white color	6.1
				POORLY GRADED GRAVEL WITH SAND, coarse gravel, trace black shiny material (ash), dry, whiteish	
				SAND, some fine to coarse gravel, moist, brown with black	
5.0		SSHS-B133-SUB- 4-6		Black shiny material (ash), few coarse gravel, moist	4.8
		SSHS-B133-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	0.4
7.5				POORLY GRADED GRAVEL WITH SAND, coarse gravel, moist, oxidation color	
				No Recovery	
		SSHS-B133-SUB- 8-10		SAND, few fine to coarse gravel, moist, brown and black	4.7
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B135

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/27/15	**COMPLETED**	7/27/15
NORTHING	754428.8943 ft	**EASTING**	762170.4378 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B135-SUB- 0-2		SILT, moist, brown	10
				SAND, little fine gravel, moist, brown	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B138

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/27/15 **COMPLETED** 7/27/15

NORTHING 754407.9232 ft **EASTING** 762164.6273 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B138-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	6.8
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B139

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753752.4189 ft **EASTING** 762678.1346 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			■	ASPHALT, and gravel	
		SSHS-B139-SUB- 0-2	░	SAND, some fine to coarse gravel, moist, brown	64.7
			▩	Black shiny material (ash), little sand, moist	
2.5		SSHS-B139-SUB- 2-4	░	SAND, some fine to coarse gravel, trace silt, moist, yellow	12.7
				No Recovery	
5.0		SSHS-B139-SUB- 4-6	░	SAND, few coarse gravel, little sand, moist, brown with black, some oxidation color	8.4
		SSHS-B139-SUB- 6-8	░	SAND, some gravel, moist, brown	1.5
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

BORING B140

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/30/15 **COMPLETED** 7/30/15

NORTHING 753777.3389 ft **EASTING** 762666.8887 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B140-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown	44
		SSHS-B140-SUB- 2-4			5.1
2.5				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B141

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/21/15 **COMPLETED** 7/21/15

NORTHING 753759.928 ft **EASTING** 762639.2942 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B141-SUB- 0-2		SAND, moist, brown with red	1.4
		SSHS-B141-SUB- 2-4		SAND, trace black shiny material (ash), moist, brown with black, trace brick	1.3
2.5				No Recovery	
		SSHS-B141-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black	1.7
5.0				POORLY GRADED GRAVEL WITH SAND, dry, gray	
		SSHS-B141-SUB- 6-8		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	1
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B142

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/21/15 **COMPLETED** 7/21/15

NORTHING 753755.9743 ft **EASTING** 762626.4253 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B142-SUB- 0-2 SSHS-B142-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown, trace brick	1.4 1.2
2.5				SAND, moist, brown, some oxidation like color	
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown, trace brick	
5.0		SSHS-B142-SUB- 4-6		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown, little oxidation	1.6
		SSHS-B142-SUB- 6-8		SAND, some fine to coarse gravel, trace silt, moist, brown	1.4
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

BORING B143

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/21/15	**COMPLETED**	7/21/15
NORTHING	753770.6009 ft	**EASTING**	762622.894 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	⧗ ■	SSHS-B143-SUB- 0-1	■	ASPHALT, and gravel	
			⛆	SAND, some fine to coarse gravel, moist, brown with black	1.7
				Construction debris	
				Bottom of borehole at 1.0 feet.	
2.5					
5.0					
7.5					

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BORING B144

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/21/15	**COMPLETED** 7/21/15	**NORTHING** 753735.5313 ft	**EASTING** 762613.1371 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
	SSHS-B144-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	
		SAND, some fine to coarse gravel, some black shiny material (ash), moist, black	0.4
	SSHS-B144-SUB- 2-4	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, black	1
2.5		No Recovery	
		SAND, some fine to coarse gravel, moist, black	
	SSHS-B144-SUB- 4-6	SAND, few coarse gravel, moist, brown	
		SAND, some fine to coarse gravel, trace black shiny material (ash), trace silt, moist, brown	2
5.0	SSHS-B144-SUB- 6-8		
		POORLY GRADED GRAVEL WITH SAND, SAND, dry, brown	0.6
		SAND, little fine gravel, moist, brown, trace brick	
		No Recovery	
7.5			

Bottom of borehole at 8.0 feet.

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BORING B145

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/24/15	**COMPLETED** 7/24/15	**NORTHING** 753726.7082 ft	**EASTING** 762583.2426 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B145-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	0.4
		SSHS-B145-SUB- 2-4			1.5
2.5					
				No Recovery	
				SAND, few fine to coarse gravel, dry, brown	
5.0		SSHS-B145-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black	0.5
		SSHS-B145-SUB- 6-8			0.9
				SILT, little fine gravel, moist, brown	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B146

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/22/15 **COMPLETED** 7/22/15

NORTHING 753702.9065 ft **EASTING** 762559.8285 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
		GRAVEL, few sand, dry	
	SSHS-B146-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	2.3
	SSHS-B146-SUB- 2-4	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown	0.9
2.5		SAND, little fine gravel, moist, brown	
		SAND, some fine gravel, moist, brown, No Recovery	
5.0	SSHS-B146-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown with black	3.3
	SSHS-B146-SUB- 6-8	SAND, some black shiny material (ash), few fine to coarse gravel, moist, black	4.2
		SAND, moist, black, some brick pieces	
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B147

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/23/15	**COMPLETED**	7/23/15
NORTHING	753745.9293 ft	**EASTING**	762573.3781 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B147-SUB- 0-2		SILT, moist, brown	3.9
2.5		SSHS-B147-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	4.2
				No Recovery	
5.0		SSHS-B147-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black, trace wood mulch pieces	1.1
		SSHS-B147-SUB- 6-8		SAND, some black shiny material (ash), little fine gravel, moist, black	2.4
				SAND, some fine to coarse gravel, little silt, moist, brown and black	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B148

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/3/15 **COMPLETED** 8/3/15	**NORTHING**	753716.3756 ft **EASTING** 762530.1437 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B148-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	9.9
2.5		SSHS-B148-SUB- 0-2		SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown, pieces of wood	4.4
				No Recovery	
				SAND, moist, black	
		SSHS-B148-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	2
5.0				Black shiny material (ash), moist, trace brick	
		SSHS-B148-SUB- 0-2		POORLY GRADED GRAVEL WITH SAND, coarse gravel, whiteish	0.9
				Moist, Brick, red	
7.5				No Recovery	
		SSHS-B148-SUB- 0-2		SAND, some fine to coarse gravel, moist, black	1
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B149

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/21/15 **COMPLETED** 7/21/15
NORTHING 753736.3758 ft **EASTING** 762543.2412 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT	
				GRAVEL	
		SSHS-B149-SUB-0-2		SAND, some gravel, moist, brown	1.4
				Becomes very light brown	
2.5		SSHS-B149-SUB-2-4		SILT, few gravel, moist, brown with black	1.5
				No Recovery	
		SSHS-B149-SUB-4-6		SAND, some gravel, moist, brown with black	1.4
5.0		SSHS-B149-SUB-6-8			2.1
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B150

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/27/15 **COMPLETED** 7/27/15

NORTHING 754449.5412 ft **EASTING** 762312.4823 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B150-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	5.1
	SSHS-B150-SUB- 2-4		2.1
2.5		SAND, trace fine gravel, moist, yellow with black	
		No Recovery	
5.0	SSHS-B150-SUB- 4-6	SAND, little coarse gravel, trace silt, moist, brown	7
		No Recovery	
		Bottom of borehole at 6.0 feet.	
7.5			

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BORING B151

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/5/15	**COMPLETED** 8/5/15	**NORTHING** 754358.0365 ft	**EASTING** 762149.8986 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Hollow Stem Auger		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Hand Auger		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson

NOTES Refusal at 2' Hand auger could not proceed

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B151-SS		SILT, moist, brown	
				SAND, some fine to coarse gravel, moist, brown	0.3
		SSHS-B151-SUB-0.17-2			0.1
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B156
PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753840.6375 ft **EASTING** 762642.979 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B156-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	18.3
		SSHS-B156-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black, trace brick	6.3
2.5					
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

BORING B157

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/30/15 **COMPLETED** 7/30/15
NORTHING 753792.4902 ft **EASTING** 762645.02 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B157-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	9.1
		SSHS-B157-SUB- 2-4			1.2
2.5				No Recovery	
				SAND, some fine to coarse gravel, moist, brown, trace brick	
		SSHS-B157-SUB- 4-6		POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, moist, brown	1.4
5.0					
		SSHS-B157-SUB- 6-8		SAND, some fine to coarse gravel, little silt, moist, brown	0.6
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B158

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/21/15 **COMPLETED** 7/21/15

NORTHING 753775.2919 ft **EASTING** 762634.2185 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B158-SUB- 0-2	ASPHALT, and gravel	
	SSHS-B158-SUB- 2-4	SAND, trace fine to coarse gravel, moist, brown with black, trace brick pieces	1.4 1.5
2.5		No Recovery	
	SSHS-B158-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown with black	1.4
		Moist, red, Brick	
5.0	SSHS-B158-SUB- 6-8	SAND, some coarse gravel, moist, brown	2.1
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B159

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753774.2157 ft **EASTING** 762601.199 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	9.1
		SSHS-B159-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	
2.5		SSHS-B159-SUB- 2-4		SAND, some fine to coarse gravel, trace silt, moist, brown	3.3
				No Recovery	
5.0		SSHS-B159-SUB- 4-6 Initial refusal		SAND, some fine to coarse gravel, moist, brown	16
		SSHS-B159-SUB- 6-8		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, black	1.7
				SAND, some fine to coarse gravel, moist, brown with black	
7.5		Refusal at 8' after shifting 3' away from the original location. All samples collected from the second location		No Recovery	

Refusal at 8.0 feet.
Bottom of borehole at 8.0 feet.

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BORING B15-AA

PAGE 1 OF 2

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/20/15	**COMPLETED** 7/20/15	**NORTHING** 754126.4271 ft	**EASTING** 762161.8991 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		No sample		SAND, some fine to coarse gravel, moist, brown	3.3
		No sample		POORLY GRADED GRAVEL WITH SAND, dry, brown	0.7
				SAND, some fine to coarse gravel, moist, black	
2.5				No Recovery	
		SSHS-B15-AA-SUB- 4-6		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, black, trace brick	1.6
5.0				SAND, some fine to coarse gravel, moist, brown with black	
		SSHS-B15-AA-SUB- 6-8		No Recovery	0.5
7.5					
		SSHS-B15-AA-SUB-8-10		SAND, some fine to coarse gravel, moist, brown with black	0.8
				SILT, some sand, moist, yellow, trace oxidation color	

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BORING B15-AA

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
				SILT, some sand, moist, yellow, trace oxidation color *(continued)*	
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING B160

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/21/15	**COMPLETED**	7/21/15
NORTHING	753760.0443 ft	**EASTING**	762602.9527 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B160-SUB- 0-2	■	ASPHALT, and gravel	
			▨	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	2.2
				No Recovery	

Refusal at 1.5 feet.
Bottom of borehole at 1.5 feet.

2.5

5.0

7.5

BORING B160A

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/3/15	**COMPLETED**	8/3/15
NORTHING	753760.0443 ft	**EASTING**	762602.9527 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)	
	No Sample	ASPHALT, and gravel		0.0
		SAND, some fine to coarse gravel, moist, brown	14.9	
		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, black		
		No Recovery		
2.5	SSHS-B160a-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown with black	10.1	2.5
	SSHS-B160a-SUB- 4-6		0.7	
5.0				5.0
	SSHS-B160a-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown	4.5	
7.5		No Recovery		7.5
	SSHS-B160a-SUB- 8-10	SAND, some fine to coarse gravel, moist, brown		
		Moist, brick and mortar	1.2	
		No Recovery		

Bottom of borehole at 10.0 feet.

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BORING B161

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753763.2046 ft **EASTING** 762579.0172 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 8' ; Shifted 3' SE of original location; refusal again at 8.5' depth; All samples collected from shifted location; water in liner at 8.5' at first locatio

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B161-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	60
2.5		SSHS-B161-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	12.3
				SAND, some coarse gravel, moist, black	
		SSHS-B161-SUB- 4-6		No recovery	14.5
5.0				SAND, some fine to coarse gravel, moist, brown with black	
		SSHS-B161-SUB- 6-8		SAND, little black shiny material (ash), moist, black	5.6
				SAND, some fine to coarse gravel, moist, brown	
7.5		SSHS-B161-SUB- 8-8.5		SAND, some fine to coarse gravel, moist, brown, trace brick	11.5

Bottom of borehole at 8.5 feet.

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BORING B162

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/3/15 **COMPLETED** 8/3/15	**NORTHING**	753747.3956 ft **EASTING** 762549.2331 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT, and gravel	
		SSHS-B162-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	7.4
2.5		SSHS-B162-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	7.9
				No Recovery	
		SSHS-B162-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	20.9
5.0		SSHS-B162-SUB- 6-8		SAND, some fine to coarse gravel, little silt, moist, black, trace brick	10
7.5				No Recovery	
				SAND, moist, black, trace brick	
		SSHS-B162-SUB- 8-10		SAND, some fine to coarse gravel, moist, brown	57.1
				POORLY GRADED GRAVEL WITH SAND, coarse gravel, dry, whiteish	
				SAND, few black shiny material (ash), few fine to coarse gravel, moist, brown, trace oxidation color	

(Continued Next Page)

BORING B162

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
	■			Moist, brick, red	
				Bottom of borehole at 10.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING B163

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/3/15 **COMPLETED** 8/3/15

NORTHING 753732.7968 ft **EASTING** 762523.9679 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 2'; Shifted 3' to east of original location; refusal again at 2'; All samples collected from shifted location

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B163-SUB- 0-2		ASPHALT, and gravel	0.2
				SAND, some fine to coarse gravel, moist, brown	
				SAND, some fine to coarse gravel, moist, black	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B164

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/27/15 **COMPLETED** 7/27/15	**NORTHING**	754468.9786 ft **EASTING** 762304.9094 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B164-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black, trace brick	8.2
2.5		SSHS-B164-SUB- 2-4		Alternating layers of brick and mortar	2.5
				No Recovery	
		SSHS-B164-SUB- 4-6		Moist, brick	11.3
5.0				SAND, little fine gravel, trace sand, moist, brown with yellow	
				No Recovery	

Bottom of borehole at 6.0 feet.

7.5

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BORING B165

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/27/15	**COMPLETED** 7/27/15	**NORTHING** 754456.3409 ft	**EASTING** 762329.0753 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson

NOTES Refusal at 2' ; stepped off one pace west ; refusal again at 2'

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B165-SUB- 0-2		SILT, moist, brown	16.4
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	
				No Recovery	

Refusal at 2.0 feet.
Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B166

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/27/15	**COMPLETED**	7/27/15
NORTHING	754426.8567 ft	**EASTING**	762156.5218 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B166-SUB- 0-2		SILT, moist, brown	8
				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B168

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/27/15 **COMPLETED** 7/27/15
NORTHING 754475.9189 ft **EASTING** 762321.783 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B168-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown and black, trace brick	0.4
2.5		SSHS-B168-SUB- 2-4			0.5
				SAND, little fine gravel, moist, brown	
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown	
		SSHS-B168-SUB- 4-6		SAND, some fine to coarse gravel, little silt, moist, brown	0.4
5.0					
				No Recovery	

Bottom of borehole at 6.0 feet.

7.5

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BORING B169

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/28/15	**COMPLETED**	7/28/15
NORTHING	754361.9232 ft	**EASTING**	762165.3519 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		Collected sample with gloved hand		SILT, moist, brown, trace plant matter (roots)	5.4
		SSHS-B169-SS		SILT, moist, brown	
		SSHS-B169-SUB-0.17-2		SAND, few fine to coarse gravel, moist, brown	60
				Brick	
				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B170

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/27/15 **COMPLETED** 7/27/15

NORTHING 754415.7683 ft **EASTING** 762183.04 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B170-SUB- 0-2		SILT, moist, brown	11.5
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B173

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/5/15 **COMPLETED** 8/5/15

NORTHING 754378.5386 ft **EASTING** 762141.9739 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Hollow Stem Auger

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Hand Auger

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 2'; hand auger could not proceed

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B173-SS		SILT, moist, brown	0.1
		SSHS-B173-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	0.2
				POORLY GRADED GRAVEL WITH SAND, BOULDERS, sand, moist, brown	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B174

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/4/15	**COMPLETED** 8/4/15	**NORTHING** 754008.919187657 ft	**EASTING** 762501.39900133 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B174-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown	14.1
2.5		SSHS-B174-SUB- 2-4			2.2
				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B175

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/28/15 **COMPLETED** 7/28/15

NORTHING 754382.563 ft **EASTING** 762161.1678 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B175-SS		SILT, moist, brown, trace organic matter (plant roots)	0
				SILT, moist, brown	
		SSHS-B175-SUB-0.17-2		SAND, few fine to coarse gravel, little black shiny material (ash), moist, black	10.3

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B176

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754021.7603 ft	**EASTING**	762509.9256 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
				SILT, moist, brown		0.0
		SSHS-B176-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	31.7	
2.5		SSHS-B176-SUB- 2-4			2.7	2.5
				No Recovery		

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B177

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754018.191150739 ft **EASTING** 762497.652945827 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	9.1
		SSHS-B177-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

BORING B177A

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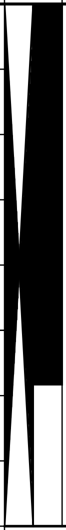
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754018.191150739 ft	**EASTING**	762497.652945827 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			



DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			▒	SAND, some fine to coarse gravel, moist, brown	
		No Sample	▒		52.6
		SSHS-B177A-SUB-2-4	▒		20.3
2.5			▒		
				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754031.20916932 ft **EASTING** 762503.178853411 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	14.5
		SSHS-B178-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

BORING B179

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754044.3696 ft	**EASTING**	762520.6141 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B179-SUB- 0-2		SILT, moist, brown	11
				SAND, some fine to coarse gravel, moist, brown	
				SAND, some fine to coarse gravel, moist, black	
2.5		SSHS-B179-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	4.3
				No Recovery	
5.0		SSHS-B179-SUB- 0-2 SSHS-B179-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	1.5 0.5
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

BORING B180

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/23/15 **COMPLETED** 7/23/15
NORTHING 754058.599206402 ft **EASTING** 762498.186081245 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B180-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	8
		SSHS-B180-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown with black	19.6
2.5				No Recovery	
5.0		SSHS-B180-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black, trace brick	5.5
		SSHS-B180-SUB- 0-2			3.5
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

PAULS BH / TP / WELL - DEFAULT.GDT - 2/4/16 00:18 - P:\GINT\PROJECTS\ELMIRA - MN0832.GPJ

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754075.9527 ft **EASTING** 762508.3155 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B181-SUB- 0-2		SILT, moist, brown	30.3
		SSHS-B181-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	27.8
				No Recovery	
2.5					
		SSHS-B181-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with reddish black	13.6
5.0					
		SSHS-B181-SUB- 6-8			3.6
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

PAULS BH / TP / WELL - DEFAULT.GDT - 2/4/16 00:18 - P:\GINT\PROJECTS\ELMIRA - MN0832.GPJ

BORING B182

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754077.142804488 ft **EASTING** 762490.693970244 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B182-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	18.2
		SSHS-B182-SUB- 2-4			4.2
				No Recovery	
2.5					
				SAND, some fine to coarse gravel, moist, brown with red	
		SSHS-B182-SUB- 4-6			43.2
5.0					
		SSHS-B182-SUB- 6-8			2.8
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B183

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754092.5677 ft	**EASTING**	762512.2056 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B183-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	11.3
2.5	SSHS-B183-SUB- 2-4		6.4
		No Recovery	
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B183-SUB- 4-6	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	7.6
	SSHS-B183-SUB- 6-8	SAND, some fine to coarse gravel, trace silt, moist, brown	0.7
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B184

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/4/15 **COMPLETED** 8/4/15

NORTHING 754091.5559 ft **EASTING** 762498.3141 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B184-SUB- 0-2 SSHS-B184-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown	3.6 8.2
2.5		SAND, some fine to coarse gravel, moist, black	
		No Recovery	
5.0	SSHS-B184-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown with black	4
	SSHS-B184-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown	1
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B185

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/23/15	**COMPLETED**	7/23/15
NORTHING	754110.603039406 ft	**EASTING**	762480.123125243 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B185-SUB- 0-2		SILT, moist, brown	1.3
				SAND, some fine to coarse gravel, moist, brown, little red brick	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B186

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754128.3924 ft	**EASTING**	762502.243 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown, little organic matter	
		SSHS-B186-SUB- 0-2		SAND, moist, brown	3.5
		SSHS-B186-SUB- 2-4		SAND, little fine gravel, moist, brown	0.5
				SAND, some fine to coarse gravel, moist, brown	
2.5				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B187

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754127.459 ft **EASTING** 762487.6738 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B187-SUB- 0-2		SILT, moist, brown	3.7
				SAND, some fine to coarse gravel, moist, brown, trace brick	
				Some black shiny material (ash), organic odor	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B187A

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/4/15 **COMPLETED** 8/4/15

NORTHING 754127.459 ft **EASTING** 762487.6738 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		No Sample		SILT, moist, brown	
				SAND, some fine to coarse gravel, moist, brown	24.5
				No Recovery	
2.5		SSHS-B187a-SUB- 2-4		SAND, some fine to coarse gravel, moist, black	5.5
		SSHS-B187a-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	0.5
5.0				No Recovery	

Bottom of borehole at 6.0 feet.

7.5

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BORING B188

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754129.14696557 ft **EASTING** 762472.631014246 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B188-SUB- 0-2		SILT, moist, brown	5.1
				SAND, some fine to coarse gravel, moist, brown	
				SAND, some coarse gravel, moist, brown	
				SAND, some coarse gravel, few silt, moist, brown	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B189

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754153.182 ft **EASTING** 762492.8454 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
				SILT, moist, brown		0.0
		SSHS-B189-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	17.3	
				SILT, trace sand, moist, brown		
				SAND, moist, brown		
		SSHS-B189-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	3.6	
2.5						2.5
				No Recovery		
				SAND, some fine to coarse gravel, moist, brown		
5.0		SSHS-B189-SUB- 4-6			9	5.0
		SSHS-B189-SUB- 6-8			1	
7.5				No Recovery		7.5

Bottom of borehole at 8.0 feet.

BORING B190

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/23/15	**COMPLETED**	7/23/15
NORTHING	754165.3743 ft	**EASTING**	762476.9116 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B190-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	10.8
		SAND, some fine to coarse gravel, moist, brown and black	
2.5	SSHS-B190-SUB- 2-4	SAND, some silt, little fine gravel, moist, brown	2.6
		No Recovery	
5.0	SSHS-B190-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown	12.6
		SAND, little fine gravel, moist, brown	
	SSHS-B190-SUB- 6-8	SAND, some coarse gravel, moist, brown	1
		SILT, moist, brown	
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/23/15 **COMPLETED** 7/23/15
NORTHING 754169.4021 ft **EASTING** 762481.2143 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B191-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with red	5.1
				SAND, some black shiny material (ash), moist, brown and black	
2.5		SSHS-B191-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	5.2
				No Recovery	
5.0		SSHS-B191-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black	0.9
				SILT, little coarse gravel, moist, brown	
		SSHS-B191-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	5.5
				SILT, moist, brown	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B192

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754163.724980406 ft **EASTING** 762465.507012747 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B192-SUB- 0-2		SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown	4.1
		SSHS-B192-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	2.5
2.5				No Recovery	
5.0		SSHS-B192-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	1.6
		SSHS-B192-SUB- 6-8		SAND, some fine gravel, moist, brown	0.3
7.5				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	

Bottom of borehole at 8.0 feet.

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/23/15	**COMPLETED**	7/23/15
NORTHING	754173.0327 ft	**EASTING**	762469.5486 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B193-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	8.3
				SAND, some black shiny material (ash), moist, brown	
2.5		SSHS-B193-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	9.4
				No Recovery	
5.0		SSHS-B193-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	11.7
				SILT, moist, brown	
7.5		SSHS-B193-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	0.4
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B194
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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754186.0439 ft **EASTING** 762477.0141 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B194-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	15.3
2.5		SSHS-B194-SUB- 2-4			6.2
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown	
5.0		SSHS-B194-SUB- 4-6			33.2
		SSHS-B194-SUB- 6-8			0.7
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754177.239389069 ft **EASTING** 762451.766226578 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B195-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	28.4
		SSHS-B195-SUB- 2-4			9.9
2.5				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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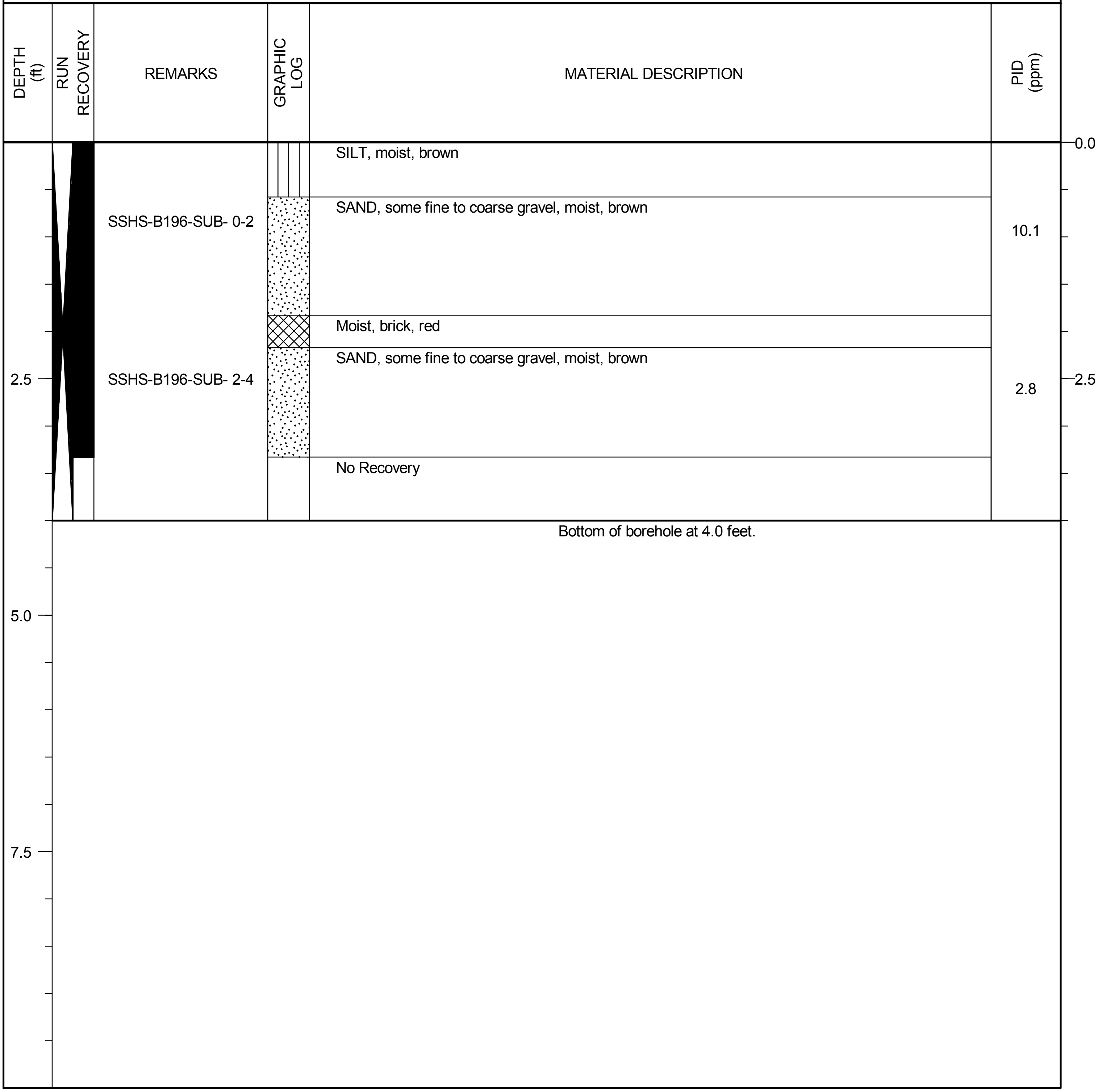
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754256.7228 ft	**EASTING**	762462.2301 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			



DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B196-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	10.1
				Moist, brick, red	
2.5		SSHS-B196-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	2.8
				No Recovery	

Bottom of borehole at 4.0 feet.

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/23/15 **COMPLETED** 7/23/15
NORTHING 754248.8658 ft **EASTING** 762450.7136 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B197-SUB- 0-2		SILT, moist, brown	2.7
				SAND, some fine to coarse gravel, moist, brown with black	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B198

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/4/15	**COMPLETED** 8/4/15	**NORTHING** 754234.16 ft	**EASTING** 762432.7344 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown, mulch pieces	
		SSHS-B198-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown, some organic matter (plant)	41.6
		SSHS-B198-SUB- 2-4			14.1
2.5					
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/23/15 **COMPLETED** 7/23/15

NORTHING 754267.7651 ft **EASTING** 762459.0985 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B199-SUB- 0-2		SAND, moist, brown	4
				SAND, some fine to coarse gravel, moist, brown, trace brick	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B199A

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/4/15 **COMPLETED** 8/4/15

NORTHING 754267.7651 ft **EASTING** 762459.0985 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B199a-SUB- 0-2		SAND, some fine to coarse gravel, trace silt, moist, brown	8.8
		SSHS-B199a-SUB- 2-4			3.9
2.5					
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B200

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/23/15 **COMPLETED** 7/23/15
NORTHING 754253.2048 ft **EASTING** 762437.4965 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B200-SUB- 0-2		SILT, moist, brown	0.2
				SAND, some fine to coarse gravel, moist, brown, trace brick	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B201

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754281.4095 ft **EASTING** 762451.3782 ft
DRILLER Zebra Environmental
GROUND ELEVATION ---
BORING DIAMETER 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B201-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	0.6
2.5		SSHS-B201-SUB- 2-4			0.7
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B202

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754262.6887 ft	**EASTING**	762422.2747 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B202-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown, trace brick	16
2.5		SSHS-B202-SUB- 2-4			7.4
				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B203

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/23/15	**COMPLETED**	7/23/15
NORTHING	754270.3443 ft	**EASTING**	762441.2016 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	3
		SSHS-B203-SUB- 0-2		SAND, some fine to coarse gravel, few black shiny material (ash), moist, brown	
2.5				Bottom of borehole at 2.0 feet.	
5.0					
7.5					

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BORING B204

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754225.035 ft	**EASTING**	762419.157 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B204-SUB- 0-2		SILT, moist, brown	0.5
				SAND, some fine to coarse gravel, moist, brown with black	
2.5		SSHS-B204-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	0.5
				No Recovery	
5.0		SSHS-B204-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	1.1
		SSHS-B204-SUB- 6-8		SAND, moist, brown	0.3
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/22/15	**COMPLETED**	7/22/15
NORTHING	754215.2753 ft	**EASTING**	762391.5934 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B205-SUB- 0-2	SILT, moist, brown	0.8
	SSHS-B205-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown No Recovery	1.4
2.5			
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B205-SUB- 4-6	SAND, some fine to coarse gravel, moist, yellow, trace oxidation color	1
		No Recovery	
7.5			

Refusal at 6.0 feet.
Bottom of borehole at 6.0 feet.

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BORING B206

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754203.7664 ft **EASTING** 762394.9014 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B206-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	45.2
2.5		SSHS-B206-SUB- 2-4			3.9
				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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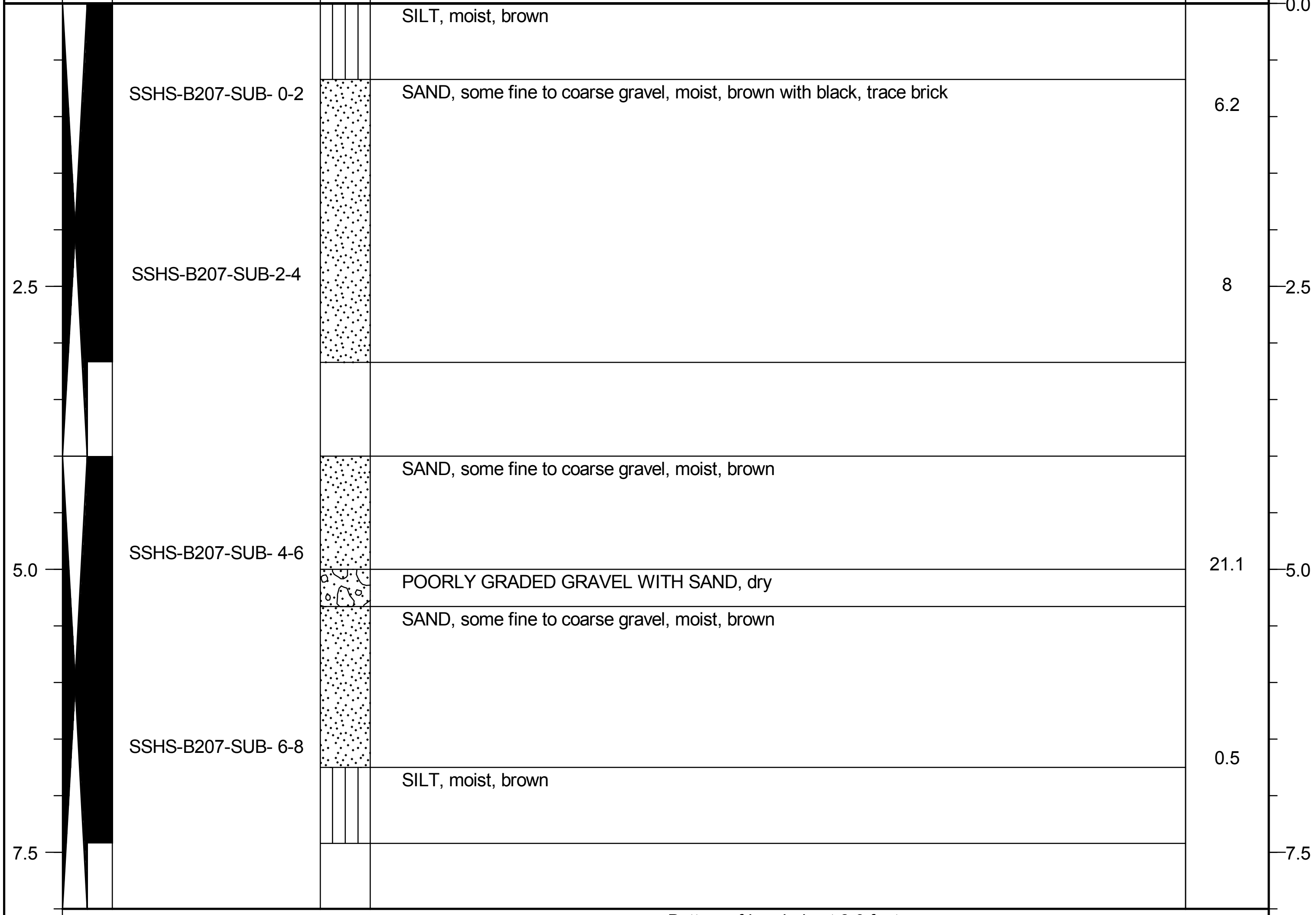
BORING B207

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/22/15 **COMPLETED** 7/22/15
NORTHING 754227.6538 ft **EASTING** 762397.5072 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES



DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B207-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown with black, trace brick	6.2
2.5	SSHS-B207-SUB-2-4		8
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B207-SUB- 4-6		21.1
		POORLY GRADED GRAVEL WITH SAND, dry	
		SAND, some fine to coarse gravel, moist, brown	
	SSHS-B207-SUB- 6-8		0.5
		SILT, moist, brown	
7.5			

Bottom of borehole at 8.0 feet.

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BORING B208

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/22/15 **COMPLETED** 7/22/15

NORTHING 754221.3119 ft **EASTING** 762379.6078 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B208-SUB- 0-2		SILT, moist, brown	6.5
		SSHS-B208-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	3
2.5				No Recovery	
5.0		SSHS-B208-SUB- 4-6 SSHS-B208-SUB- 6-8		SAND, some fine to coarse gravel, moist, black, trace brick	3 6
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B209

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/4/15 **COMPLETED** 8/4/15
NORTHING 754255.4946 ft **EASTING** 762408.9033 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B209-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	19.6
2.5		SSHS-B209-SUB- 2-4			1.9
				SAND, some fine to coarse gravel, moist, brown	
5.0		SSHS-B209-SUB- 4-6			3.7
		SSHS-B209-SUB- 6-8		SAND, moist, brown	0.6
7.5					

Bottom of borehole at 8.0 feet.

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BORING B210

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/22/15 **COMPLETED** 7/22/15

NORTHING 754241.2113 ft **EASTING** 762377.4443 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B210-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	11.7
2.5		SSHS-B210-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	3.1
				No Recovery	
5.0		SSHS-B210-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	2.8
		SSHS-B210-SUB- 6-8		SILT, moist, brown	0.7
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B211

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/4/15	**COMPLETED**	8/4/15
NORTHING	754252.8793 ft	**EASTING**	762370.3409 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B211-SUB- 0-2	SILT, moist, brown	13.7
		SAND, some fine to coarse gravel, moist, brown with black	
2.5	SSHS-B211-SUB- 2-4		1.7
		SILT, moist, brown	
		SAND, some fine to coarse gravel, moist, brown	
		No Recovery	
		Bottom of borehole at 4.0 feet.	
5.0			
7.5			

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BORING B212

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/28/15 **COMPLETED** 7/28/15
NORTHING 754385.257 ft **EASTING** 762351.6803 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	36
2.5	SSHS-B212-SUB- 0-2 SSHS-B212-SUB- 2-4	SAND, some fine to coarse gravel, few black shiny material (ash), moist, black	5.5
		SAND, some fine to coarse gravel, trace silt, moist, brown	
		No Recovery	
		SAND, moist, brown and black	22.3
5.0	SSHS-B212-SUB- 4-6 SSHS-B212-SUB- 6-8	SAND, few fine to coarse gravel, moist, brown	4
		SAND, little black shiny material (ash), little fine gravel, trace silt, moist, brown	
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B214

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/28/15 **COMPLETED** 7/28/15	**NORTHING**	754346.3079 ft **EASTING** 762299.6919 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B214-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	13.4
2.5		SSHS-B214-SUB- 2-4			7.2
				No Recovery	
		SSHS-B214-SUB- 4-6		SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown	18.1
5.0				SAND, some silt, few fine to coarse gravel, moist, black, hydrocarbon odor	
		SSHS-B214-SUB- 6-8			70.2
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B216

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/16/15 **COMPLETED** 7/16/15
NORTHING 754390.7813 ft **EASTING** 762329.102 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B216-SUB- 0-2	SILT, moist, brown	1.3
		POORLY GRADED GRAVEL WITH SAND, moist, brown	
2.5	SSHS-B216-SUB- 2-4	SAND, few fine to coarse gravel, trace black shiny material (ash), moist, dark brown, trace black shiny material	1.3
		No Recovery	
		SILT, moist, dark brown	
		SAND, trace fine gravel, trace black shiny material (ash), moist, brown, trace shiny black material (ash)	
	SSHS-B216-SUB- 4-6	SAND, moist, yellow	17.3
5.0	SSHS-B216-SUB- 6-8	Moist black shiny medium grained material (ash)	18.5
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B217

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/16/15 **COMPLETED** 7/16/15	**NORTHING**	754383.1928 ft **EASTING** 762307.4282 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B217-SUB- 0-2	SILT, SILT, moist, brown	1.2
		SAND, few fine to coarse gravel, trace silt, moist, brown	
		POORLY GRADED GRAVEL WITH SAND, moist, white	
	SSHS-B217-SUB- 2-4	SAND, little fine to coarse gravel, trace black shiny material (ash), moist, brown with black	1.4
2.5		No Recovery	
		SILT, moist, brown	
		POORLY GRADED GRAVEL WITH SAND, dry, brown	
5.0	SSHS-B217-SUB- 4-6 SSHS-B217-SUB- 6-8	SAND, trace fine gravel, moist, brown and black	2.2 1.5
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B218

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/16/15 **COMPLETED** 7/16/15

NORTHING 754372.5813 ft **EASTING** 762281.7883 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B218-SUB- 0-2		SILT, moist, brown	1.5
				SAND, few fine to coarse gravel, little silt, moist, brown	
				POORLY GRADED SAND WITH GRAVEL, moist, brown	
2.5		SSHS-B218-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	1
				No Recovery	
				SAND, few fine gravel, little silt, little black shiny material (ash), moist, brown, hydrocarbon odor	
5.0		SSHS-B218-SUB- 4-6		SAND, few coarse gravel, moist, brown with black, hydrocarbon odor	24.5
		SSHS-B218-SUB- 6-8		SAND, few fine to coarse gravel, trace silt, moist, brown, hydrocarbon odor	30.4
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

BORING B220

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/28/15 **COMPLETED** 7/28/15
NORTHING 754412.7975 ft **EASTING** 762339.9674 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B220-SUB- 0-2	SILT, moist, brown	
		SAND, some fine to coarse gravel, moist, brown	28.1
	SSHS-B220-SUB- 2-4	SAND, some silt, little black shiny material (ash), moist, black, trace brick	
2.5		SAND, few fine to coarse gravel, moist, brown	2.3
		No Recovery	
5.0	SSHS-B220-SUB- 4-6 SSHS-B220-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown with black	16.7 0.6
		SAND, some fine to coarse gravel, little silt, moist, brown	
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B221

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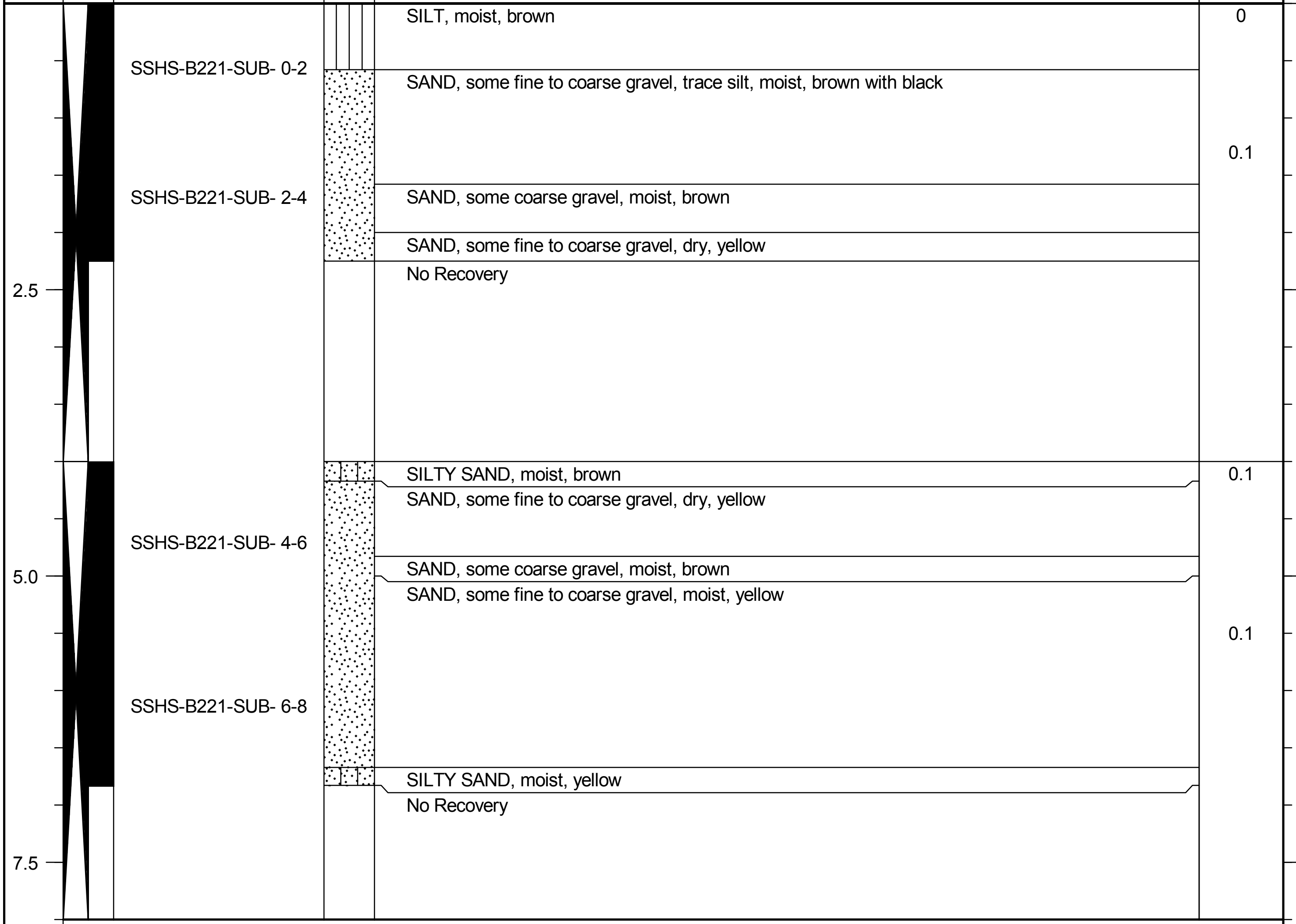
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/15/15 **COMPLETED** 7/15/15	**NORTHING**	754414.6016 ft **EASTING** 762317.356 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			



DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	0
	SSHS-B221-SUB- 0-2	SAND, some fine to coarse gravel, trace silt, moist, brown with black	0.1
	SSHS-B221-SUB- 2-4	SAND, some coarse gravel, moist, brown	
		SAND, some fine to coarse gravel, dry, yellow	
2.5		No Recovery	
		SILTY SAND, moist, brown	0.1
	SSHS-B221-SUB- 4-6	SAND, some fine to coarse gravel, dry, yellow	
5.0		SAND, some coarse gravel, moist, brown	
	SSHS-B221-SUB- 6-8	SAND, some fine to coarse gravel, moist, yellow	0.1
		SILTY SAND, moist, yellow	
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B222

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/16/15	**COMPLETED**	7/16/15
NORTHING	754390.6091 ft	**EASTING**	762266.3449 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B222-SUB- 0-2	SILT, moist, brown	
		SAND, some fine to coarse gravel, moist, brown	0.4
2.5	SSHS-B222-SUB- 2-4	SAND, some fine to coarse gravel, few black shiny material (ash), moist, brown	0.5
		No Recovery	
		SAND, some silt, few fine gravel, few black shiny material (ash), moist, brown	
	SSHS-B222-SUB- 4-6	SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown	1.6
5.0		SAND, some coarse gravel, moist, brown	
	SSHS-B222-SUB- 6-8	SAND, some fine to coarse gravel, few black shiny material (ash), moist, brown, little oxidation color	1.7
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B223

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/28/15 **COMPLETED** 7/28/15
NORTHING 754382.2904 ft **EASTING** 762249.7436 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B223-SUB- 0-2		SILT, moist, brown	43
				Brick	
		SSHS-B223-SUB- 2-4		SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown, trace brick	7
2.5				No Recovery	
5.0		SSHS-B223-SUB- 4-6		SAND, some fine to coarse gravel, trace sand, moist, brown with black	5.2
		SSHS-B223-SUB- 6-8			3.2
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B225
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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/28/15 **COMPLETED** 7/28/15
NORTHING 754437.3145 ft **EASTING** 762307.8977 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 5'; Shifted 3' to NW of original location; All samples collected from new location

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B225-SUB- 0-2	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	3.4
2.5	SSHS-B225-SUB- 2-4	SAND, moist, brown	1.7
		No Recovery	
		SAND, some coarse gravel, moist, brown	
5.0	SSHS-B225-SUB- 4-6	SAND, little fine gravel, moist, black, hydrocarbon odor	12
		No Recovery	

Bottom of borehole at 6.0 feet.

7.5

BORING B226A

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/5/15 **COMPLETED** 8/5/15	**NORTHING**	754440.4902 ft **EASTING** 762286.7919 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 2.5' shifted 3' to NE of original position, refusal again at 2.5';

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B226a-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	0.3
		SSHS-B226a-SUB- 2-2.5			0.3
				No Recovery	
2.5					

Refusal at 2.5 feet.
Bottom of borehole at 2.5 feet.

5.0

7.5

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BORING B227

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/15/15	**COMPLETED** 7/15/15	**NORTHING** 754429.1875 ft	**EASTING** 762268.8672 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■	SSHS-B227-SUB-0-2	▥	SILT, moist, brown	0.1
	■		▥	SILT, some fine gravel, moist, brown	0.2
	■	SSHS-B227-SUB-2-4	░	SAND, some fine to coarse gravel, few silt, moist, brown	
2.5	☐			No Recovery	
	■		░	SAND, some fine gravel, moist, yellow	0.5
	■		▩	Moist Brick	
	■	SSHS-B227-SUB-4-6	░	SAND, some fine to coarse gravel, moist, black	
5.0	■		░	SAND, some fine to coarse gravel, dry, brown	
	■		░	SAND, some fine gravel, moist, yellow, Few brick	7.1
	■	SSHS-B227-SUB-6-8	░	SAND, some black shiny material (ash), few fine gravel, moist, black, Some cinders	
7.5	☐			No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B227A

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/27/15 **COMPLETED** 7/27/15
NORTHING 754429.1875 ft **EASTING** 762268.8672 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	No samples collected 0'-8'	SILT, moist, brown	8.5
		SAND, some fine to coarse gravel, moist, brown, some white material (bentonite)	10.6
2.5		SAND, little fine to coarse gravel, moist, brown, some brick	
		No Recovery	13
5.0		SAND, some fine to coarse gravel, moist, brown, some white material (bentonite)	9.4
		SAND, some black shiny material (ash), moist, black	
7.5			
		SAND, little fine gravel, moist, black, hydrocarbon odor	17.3
		SAND, some fine to coarse gravel, moist, brown	
		SILT, some sand, few coarse gravel, moist, brown	
		No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B228

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/15/15 **COMPLETED** 7/15/15

NORTHING 754421.6614 ft **EASTING** 762252.8775 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B228-SUB-0-2	SAND, with fine to coarse gravel, trace silt, moist, black	0
	SSHS-B228-SUB-2-4	SAND, dry, black, Trace Red	0.1
2.5			
5.0		SAND, dry, yellow, No Recovery	
		SAND, some gravel, dry, black	
	SSHS-B228-SUB-4-6	SAND, moist, yellow	0.7
		SAND, some fine to coarse gravel, moist, black	
7.5	SSHS-B228-SUB-6-8	SAND, moist, yellow	0.1
		SAND, some silt, moist, brown	

Bottom of borehole at 8.0 feet.

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BORING B229

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/15/15 **COMPLETED** 7/15/15

NORTHING 754404.5458 ft **EASTING** 762259.8782 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B229-SUB- 0-2	SAND, some fine to coarse gravel, few silt, moist, brown	2.3
	SSHS-B229-SUB- 2-4		1.7
2.5		No Recovery	
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B229-SUB- 4-6	Moist, Red Brick Material	2.3
		SAND, some silt, moist, yellow	
	SSHS-B229-SUB- 6-8	SAND, some fine to coarse gravel, moist, yellow with black, little brick pieces	7.9
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B230

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/28/15	**COMPLETED** 7/28/15	**NORTHING** 754406.1424 ft	**EASTING** 762242.6923 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson

NOTES Refusal occured at 4.5' depth of run, Shifted 2' to the south of original location, All samples collected from new location.

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B230-SUB- 0-2			
				SAND, some fine to coarse gravel, moist, brown	2.7
				SAND, some black shiny material (ash), few fine to coarse gravel, moist, black	
2.5		SSHS-B230-SUB- 0-2			1.7
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown with black	
5.0		SSHS-B230-SUB- 0-2			41.4
				SAND, moist, yellow	
				SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown	
		SSHS-B230-SUB- 0-2			13.2
7.5					
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B231

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/27/15 **COMPLETED** 7/27/15

NORTHING 754445.9653 ft **EASTING** 762298.3923 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B231-SUB- 0-2		SAND, some fine to coarse gravel, little silt, trace black shiny material (ash), moist, brown	6.6
		SSHS-B231-SUB- 2-4		SAND, moist, yellow and black	3.3
2.5				No Recovery	
				SAND, moist, yellowish orange	
		SSHS-B231-SUB- 4-6			4.5
5.0				SAND, little fine gravel, moist, black	
		SSHS-B231-SUB- 6-8			3.4
				SAND, some fine to coarse gravel, little silt, moist, brown	
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B232

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/27/15 **COMPLETED** 7/27/15
NORTHING 754449.3104 ft **EASTING** 762281.9869 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B232-SUB- 0-2	SAND, little fine to coarse gravel, moist, brown	2.5
		SAND, some fine to coarse gravel, trace silt, moist, black	
2.5	SSHS-B232-SUB- 2-4	Trace gray silt stuck to the inside surface of the tube	2.2
	SSHS-B232-SUB- 4-6	SAND, moist, grayish	0.3
5.0		SAND, moist, yellow	
		SAND, moist, brown	
	SSHS-B232-SUB- 6-8	SAND, moist, black	2.7
		SAND, some coarse gravel, moist, black	
7.5		No Recovery	
		SAND, moist, black	
	SSHS-B232-SUB- 8-10	SAND, some fine to coarse gravel, moist, brown with black	5.4
		No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B233

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/28/15 **COMPLETED** 7/28/15

NORTHING 754437.8051 ft **EASTING** 762254.2631 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B233-SUB- 0-2 SSHS-B233-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	65 4.5
2.5				No Recovery	
				SAND, few fine to coarse gravel, moist, brown, some brick	
5.0		SSHS-B233-SUB- 4-6		SAND, little black shiny material (ash), moist, yellow with black, trace brick	1.2
				SILT, moist, brown	
		SSHS-B233-SUB- 6-8		SAND, some black shiny material (ash), few silt, moist, yellow	0.3
7.5				No Recovery	
		SSHS-B233-SUB- 8-10		SAND, some fine to coarse gravel, moist, brown	5.6
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B234A

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/28/15 **COMPLETED** 7/28/15
NORTHING 754428.6394 ft **EASTING** 762230.7163 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 6'; shifted north 3', all samples collected from new location

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B234a-SUB- 0-2	SILT, moist, brown	24.6
	SSHS-B234a-SUB- 2-4	SAND, some fine to coarse gravel, moist, brown	7.3
2.5		No Recovery	
	SSHS-B234a-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown, trace brick	4.1
5.0	SSHS-B234a-SUB- 6-8	SAND, few fine to coarse gravel, moist, black, some wood material	7.4
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B236

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/14/15	**COMPLETED**	7/14/15
NORTHING	754470.2002 ft	**EASTING**	762258.1369 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	A. Gray
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B236-SUB-0-2		SILT, SILT, dry, brown	0.4
				POORLY GRADED SAND, SAND, trace gravel, moist, dark brown, Trace red color	
				POORLY GRADED SAND WITH GRAVEL, SAND, with gravel, dry, brown	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B237

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/27/15 **COMPLETED** 7/27/15
NORTHING 754459.7353 ft **EASTING** 762249.5735 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B237-SUB- 0-2		SILT, moist, brown	25.7
		SSHS-B237-SUB- 2-4		SAND, few coarse gravel, trace black shiny material (ash), moist, brown	7.5
2.5				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

BORING B238

PAGE 1 OF 1

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/14/15	**COMPLETED** 7/14/15	**NORTHING** 754484.2389 ft	**EASTING** 762264.0622 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** A. Gray
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B238-SUB-0-2		SILT, SILT, dry, brown	0.4
				POORLY GRADED SAND WITH GRAVEL, SAND, some fine to coarse gravel, dry, brown, Trace red color, Trace oxidation	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B239

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/14/15 **COMPLETED** 7/14/15

NORTHING 754477.1474 ft **EASTING** 762245.5381 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** A. Gray

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B239-SUB-0-2		SILT, SILT, dry, brown	0.3
				POORLY GRADED SAND WITH GRAVEL, SAND, some fine to coarse gravel, moist, brown, Trace red color	
				POORLY GRADED SAND WITH GRAVEL, SAND, some fine to coarse gravel, dry, brown	
				POORLY GRADED SAND WITH GRAVEL, SAND, some fine to coarse gravel, moist, dark brown, Subangular gravel	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

BORING B239A

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/27/15	**COMPLETED**	7/27/15
NORTHING	754476.958933986 ft	**EASTING**	762248.033038247 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		No sample		SAND, few fine to coarse gravel, moist, brown and black	
				No Recovery	
2.5		SSHS-B239a-SUB-0-2		SAND, some fine to coarse gravel, few silt, few black shiny material (ash), moist, brown with black	1.8
		SSHS-B239a-SUB-4-6		POORLY GRADED GRAVEL WITH CLAY AND SAND, moist, brown	0.9
5.0				No Recovery	

Bottom of borehole at 6.0 feet.

7.5

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BORING B240

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/27/15 **COMPLETED** 7/27/15

NORTHING 754473.1355 ft **EASTING** 762232.7685 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B240-SUB- 0-2		SILT, moist, brown	
				SAND, few coarse gravel, little black shiny material (ash), moist, brown and black	13.8
		SSHS-B240-SUB- 2-4		SILT, moist, yellow and black	2.3
2.5				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

BORING B241

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/14/15	**COMPLETED**	7/14/15
NORTHING	754489.1067 ft	**EASTING**	762251.4415 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	A. Gray
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B241-SUB-0-2		SILT, dry, brown	0.3
				SAND, some fine to coarse gravel, moist, brown	
				Red brick at base	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B242

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/27/15	**COMPLETED**	7/27/15
NORTHING	754488.8162 ft	**EASTING**	762237.1528 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B242-SUB- 0-2		SILT, moist, brown	1.1
		SSHS-B242-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black, trace brick pieces	1
2.5				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B243

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/30/15	**COMPLETED** 7/30/15	**NORTHING** 754095.4276 ft	**EASTING** 762185.8727 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B243-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	8
				SAND, some black shiny material (ash), moist, black, trace brick	
		SSHS-B243-SUB- 2-4		SAND, few coarse gravel, moist, brown	0.4
2.5				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

BORING B246

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/30/15 **COMPLETED** 7/30/15

NORTHING 754122.2791 ft **EASTING** 762196.7823 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B246-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	10.4
		SSHS-B246-SUB- 2-4			8.4
				SAND, little fine to coarse gravel, moist, brown	
2.5				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B247

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/20/15 **COMPLETED** 7/20/15
NORTHING 754094.219 ft **EASTING** 762164.3877 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B247-SUB- 0-2		SILT, moist, brown, trace wood	
				SAND, some fine to coarse gravel, moist, brown	7.8
				POORLY GRADED GRAVEL WITH SAND, dry, brown	
2.5		SSHS-B247-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	1.5
				No Recovery	
		SSHS-B247-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black, trace mulch wood pieces	0.7
5.0		SSHS-B247-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	0.8
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

BORING B248

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/20/15 **COMPLETED** 7/20/15
NORTHING 754105.1438 ft **EASTING** 762144.042 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B248-SUB- 0-2		SILT, moist, brown, trace plant matter	7.4
		SSHS-B248-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	0.9
2.5				No Recovery	
		SSHS-B248-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown with black	1.4
5.0 7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B249

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/30/15 **COMPLETED** 7/30/15	**NORTHING**	754099.5988 ft **EASTING** 762138.6164 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B249-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	14
2.5		SSHS-B249-SUB- 2-4			3
				No Recovery	
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B250

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/30/15	**COMPLETED**	7/30/15
NORTHING	754139.1017 ft	**EASTING**	762185.228 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**TOP OF CASING ELEVATION**	---
DRILLING METHOD	Direct Push	**UTILITY CONTRACTOR**	---
SAMPLING METHOD	2" x 2' Macrocore	**LOGGED BY**	A. Ranna
RIG TYPE	Geoprobe	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B250-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown with black	53.1
2.5					
		SSHS-B250-SUB- 2-4			5.5
				Bottom of borehole at 4.0 feet.	
5.0					
7.5					

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BORING B251

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/20/15 **COMPLETED** 7/20/15

NORTHING 754134.7572 ft **EASTING** 762175.5226 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 3' depth of run

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B251-SUB- 0-2		SILT, moist, brown	13.3
		SSHS-B251-SUB- 2-3		SAND, some fine to coarse gravel, moist, brown with black	0.6
2.5				No Recovery	

Refusal at 3.0 feet.
Bottom of borehole at 3.0 feet.

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BORING B252

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/20/15	**COMPLETED** 7/20/15	**NORTHING** 754122.9511 ft	**EASTING** 762147.8262 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B252-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown and black	1.2
				SAND, dry, yellow	
		SSHS-B252-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, black	0.8
2.5				No Recovery	
		SSHS-B252-SUB- 4-6		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	1
5.0		SSHS-B252-SUB- 6-8			1.2
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B253

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/30/15 **COMPLETED** 7/30/15

NORTHING 754118.8817 ft **EASTING** 762137.8708 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B253-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	21.9
2.5		SSHS-B253-SUB- 2-4			2.7
				No Recovery	
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	
5.0		SSHS-B253-SUB- 4-6			4.9
		SSHS-B253-SUB- 6-8			0.6
				POORLY GRADED GRAVEL WITH SAND, coarse gravel, moist, brown	
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

BORING B254

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/30/15	**COMPLETED**	7/30/15
NORTHING	754163.2956 ft	**EASTING**	762187.4683 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B254-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	37.1
2.5		SSHS-B254-SUB- 2-4			8.5
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING B255

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/30/15	**COMPLETED**	7/30/15
NORTHING	754158.5279 ft	**EASTING**	762164.1826 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B255-SUB- 0-2		SILT, moist, brown	3.5
		SSHS-B255-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black	0.9
2.5				No Recovery	
		SSHS-B255-SUB- 4-6		SAND, some fine to coarse gravel, moist, brown	4.5
		SSHS-B255-SUB- 6-8		POORLY GRADED GRAVEL WITH SAND, SAND, coarse gravel, brown	0.3
5.0 7.5				No Recovery	
		SSHS-B255-SUB- 8-10		SAND, some fine to coarse gravel, moist, brown	0.3

Bottom of borehole at 10.0 feet.

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BORING B256

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/20/15 **COMPLETED** 7/20/15
NORTHING 754143.6437 ft **EASTING** 762158.0557 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B256-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown, trace pieces of wood	1.3
2.5		SSHS-B256-SUB- 2-4		SAND, some fine to coarse gravel, moist, black	0.6
				No Recovery	
		SSHS-B256-SUB- 4-6		SAND, some fine to coarse gravel, few black shiny material (ash), moist, black	1.4
5.0		SSHS-B256-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown	0.8
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B257

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/30/15 **COMPLETED** 7/30/15	**NORTHING**	754148.1902 ft **EASTING** 762142.4441 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B257-SUB- 0-2		SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown, little brick	34.5
2.5		SSHS-B257-SUB- 2-4			8.1
				No Recovery	
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	
		SSHS-B257-SUB- 4-6			6.3
5.0					
		SSHS-B257-SUB- 6-8			1.4
				No Recovery	
7.5					
				SAND, some fine to coarse gravel, moist, brown	
		SSHS-B257-SUB- 8-10			0.9
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B259

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754188.6559 ft **EASTING** 762123.8544 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, some coarse gravel, moist, brown	
		SSHS-B259-SUB- 0-2		SAND, some coarse gravel, moist, brown with black	16
2.5		SSHS-B259-SUB- 2-4		SAND, some black shiny material (ash), moist, black	0.9
				No Recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

BORING B260

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754187.7633 ft **EASTING** 762100.1626 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, black	
	SSHS-B260-SUB- 0-2	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	32.2
		Moist, Brick	
2.5	SSHS-B260-SUB- 2-4	SAND, some coarse gravel, moist, brown	3.2
		POORLY GRADED GRAVEL WITH SAND, coarse gravel, dry, brown	
		SAND, few black shiny material (ash), moist, brown	
		No Recovery	
5.0	SSHS-B260-SUB- 4-6	SAND, some coarse gravel, moist, brown with black	17.7
	SSHS-B260-SUB- 6-8	SAND, some fine to coarse gravel, few silt, moist, brown	2.5
		POORLY GRADED GRAVEL WITH SAND, SAND, dry, brown	
7.5		SAND, some fine to coarse gravel, some silt, moist, brown	
		No Recovery	

Bottom of borehole at 8.0 feet.

BORING B261

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/17/15 **COMPLETED** 7/17/15	**NORTHING**	754200.6826 ft **EASTING** 762118.6449 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B261-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black	4.2
2.5		SSHS-B261-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	3.6
				No Recovery	
				SAND, few fine gravel, moist, dark brown	
5.0		SSHS-B261-SUB- 4-6		SAND, moist, yellow with black	5.2
		SSHS-B261-SUB- 6-8		SILT, moist, yellow	2.4
7.5				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B262

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/29/15 **COMPLETED** 7/29/15

NORTHING 754209.2767 ft **EASTING** 762141.3185 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		SILT, moist, brown	
	SSHS-B262-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown, trace brick	27.2
2.5	SSHS-B262-SUB- 2-4	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black, trace oxidation	3.6
		No Recovery	
		SAND, some fine to coarse gravel, moist, brown	
5.0	SSHS-B262-SUB- 4-6	SAND, some silt, few fine to coarse gravel, moist, brown	7.7
		SAND, some silt, moist, brown	
	SSHS-B262-SUB- 6-8	SAND, some fine to coarse gravel, trace silt, moist, brown	1.1
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B264

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CLIENT Unisys	**PROJECT NAME** Former Sperry Remington North
PROJECT NUMBER MN0832	**PROJECT LOCATION** Elmira, New York
DATE STARTED 7/17/15 **COMPLETED** 7/17/15	**NORTHING** 754246.8513 ft **EASTING** 762115.4009 ft
DRILLER Zebra Environmental	**GROUND ELEVATION** --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push	**TOP OF CASING ELEVATION** ---
SAMPLING METHOD 2" x 2' Macrocore	**UTILITY CONTRACTOR** ---
RIG TYPE Geoprobe	**LOGGED BY** A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 3' depth of run

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B264-SUB- 0-2		SILT, moist, brown	0.8
				SAND, some fine to coarse gravel, moist, brown and black, trace brick	
		SSHS-B264-SUB- 2-3		SAND, some fine to coarse gravel, dry, brown	0.9
2.5				SAND, some black shiny material (ash), moist, brown	
				No Recovery	

Refusal at 3.0 feet.
Bottom of borehole at 3.0 feet.

5.0

7.5

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BORING B265

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/17/15 **COMPLETED** 7/17/15

NORTHING 754220.0951 ft **EASTING** 762128.7268 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B265-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	2.2
2.5		SSHS-B265-SUB- 2-4			3.6
				No Recovery	
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	
				SAND, little fine to coarse gravel, trace black shiny material (ash), moist, brown	
5.0		SSHS-B265-SUB- 4-6			2.8
				SILT, moist, yellow	
		SSHS-B265-SUB- 6-8			2.1
7.5				SAND, few coarse gravel, moist, brown	

Bottom of borehole at 8.0 feet.

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BORING B266

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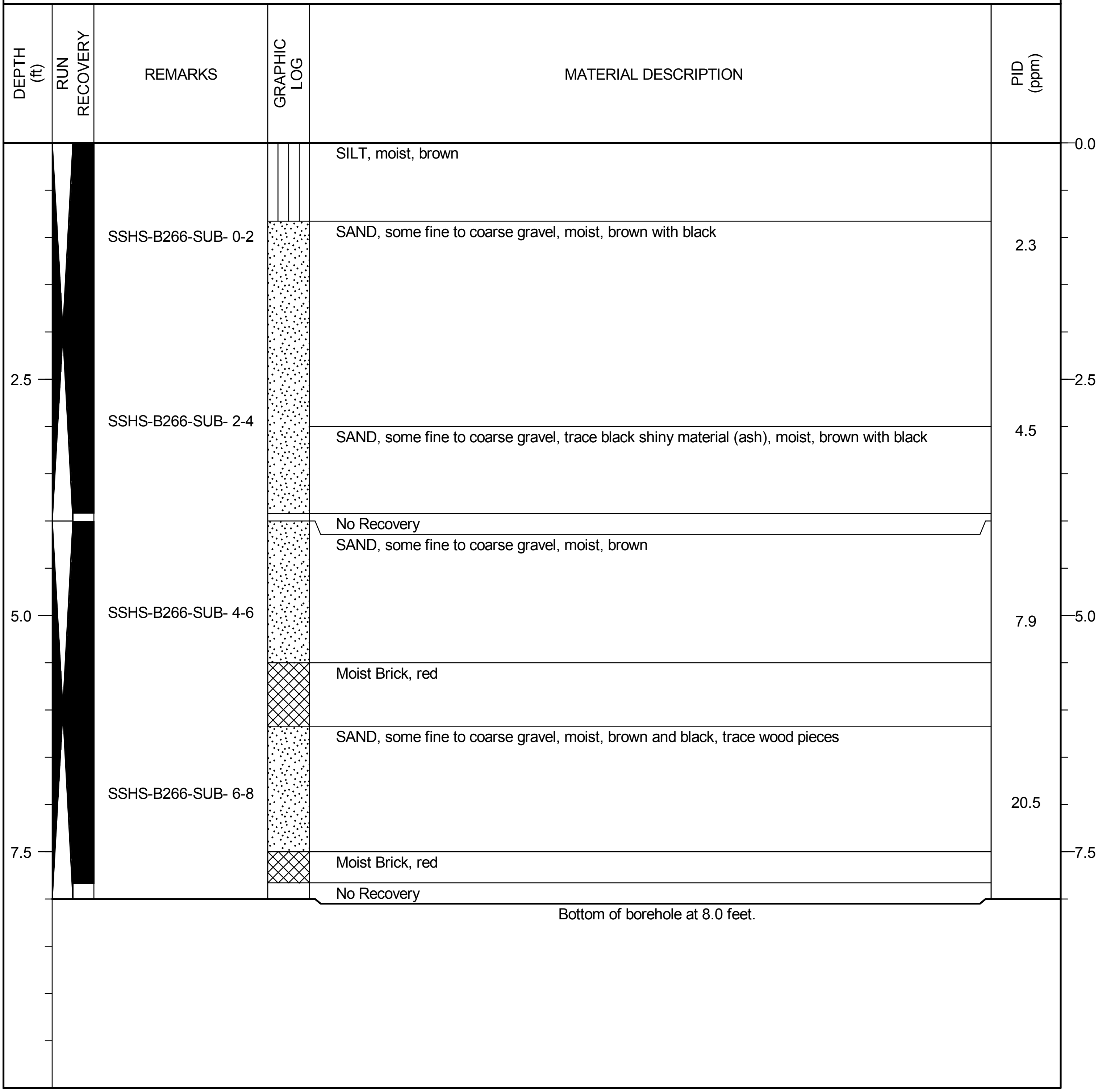
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/17/15	**COMPLETED**	7/17/15
NORTHING	754213.7314 ft	**EASTING**	762102.4675 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			



REMARKS	MATERIAL DESCRIPTION	PID (ppm)
	SILT, moist, brown	
SSHS-B266-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown with black	2.3
SSHS-B266-SUB- 2-4	SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	4.5
	No Recovery	
SSHS-B266-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown	7.9
	Moist Brick, red	
SSHS-B266-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown and black, trace wood pieces	20.5
	Moist Brick, red	
	No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B266A

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754213.7314 ft **EASTING** 762102.4675 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		No Sample		SAND, some coarse gravel, moist, brown	0.1
2.5		No Sample		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	0.1
				No Recovery	
5.0				SAND, some fine to coarse gravel, moist, brown and black	
		No Sample		Moist, Brick	30
				SAND, some black shiny material (ash), few fine to coarse gravel, moist, brown with black	
				Moist, Brick	
7.5				SAND, trace black shiny material (ash), moist, brown	
		SSHS-B266a-SUB- 8-10		SAND, little fine to coarse gravel, moist, brown, some brick	
				SAND, few silt, trace black shiny material (ash), moist, brown	1.5
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B267
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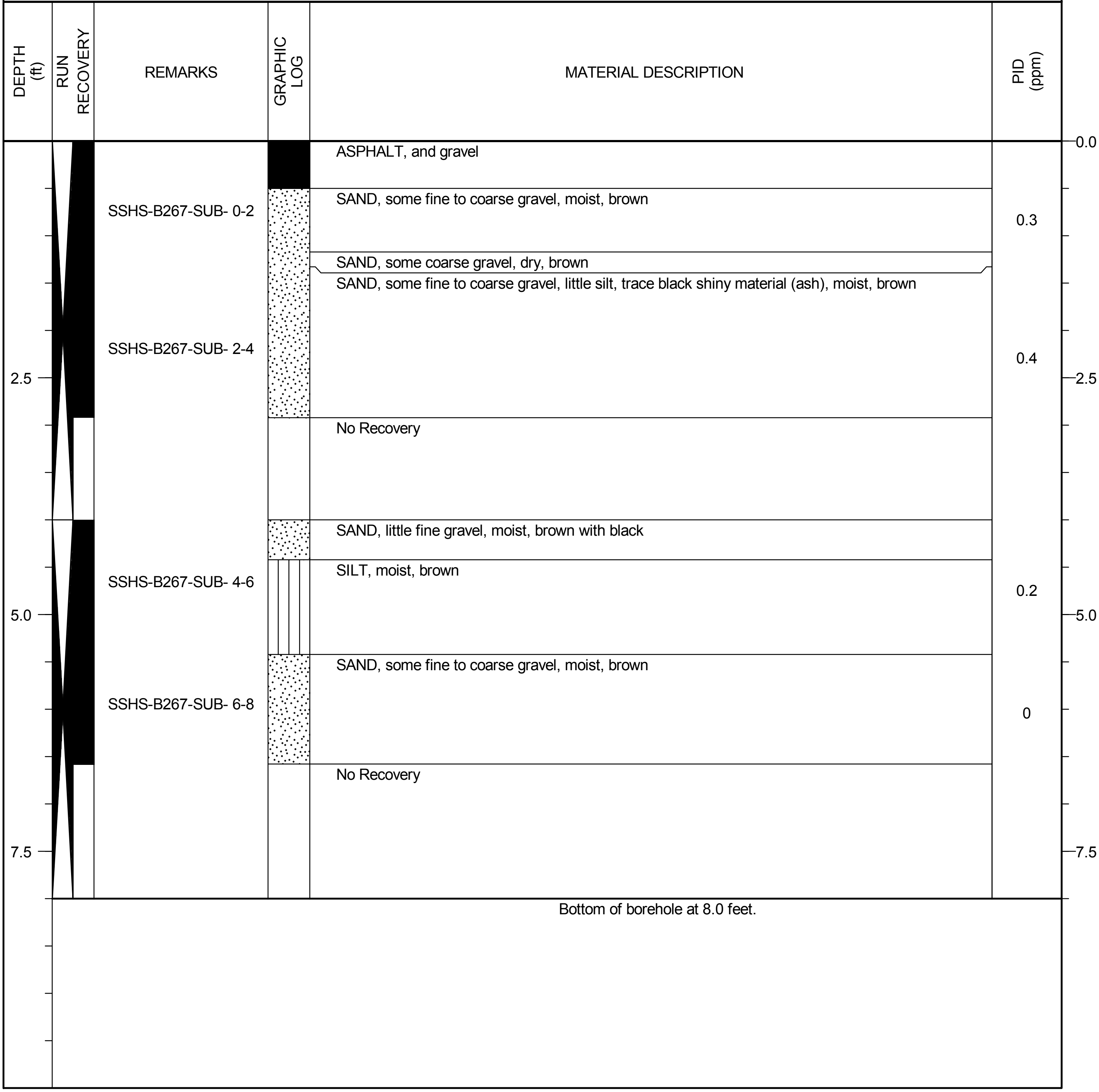
CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/30/15 **COMPLETED** 7/30/15
NORTHING 754201.5246 ft **EASTING** 762074.9829 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES



REMARKS	MATERIAL DESCRIPTION	PID (ppm)
	ASPHALT, and gravel	
SSHS-B267-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	0.3
	SAND, some coarse gravel, dry, brown	
SSHS-B267-SUB- 2-4	SAND, some fine to coarse gravel, little silt, trace black shiny material (ash), moist, brown	0.4
	No Recovery	
	SAND, little fine gravel, moist, brown with black	
SSHS-B267-SUB- 4-6	SILT, moist, brown	0.2
SSHS-B267-SUB- 6-8	SAND, some fine to coarse gravel, moist, brown	0
	No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B268

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754244.745 ft **EASTING** 762144.202 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B268-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black, trace brick	51.2
2.5		SSHS-B268-SUB- 2-4			11.1
				No Recovery	
				SAND, some fine to coarse gravel, little silt, moist, brown	
5.0		SSHS-B268-SUB- 4-6		SAND, some silt, trace coarse gravel, moist, brown	4
		SSHS-B268-SUB- 6-8		SAND, few silt, few coarse gravel, moist, brown	1.6
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B269

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/17/15 **COMPLETED** 7/17/15
NORTHING 754229.9706 ft **EASTING** 762133.9977 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 3' depth of run

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
				SILT, moist, brown		0.0
		SSHS-B269-SUB- 0-2		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black, trace brick	2.3	
		SSHS-B269-SUB- 0-2			0.6	
2.5						2.5
				No Recovery		

Refusal at 3.0 feet.
Bottom of borehole at 3.0 feet.

5.0

7.5

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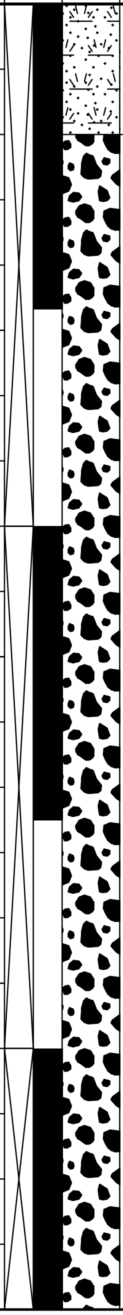
BORING B26A

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14 **COMPLETED** 8/14/14	**NORTHING**	754068 ft **EASTING** 762494 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	M. Bauer **CHECKED BY** A. Gray

NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	1.1
		0.8
	Dense, WELL GRADED GRAVEL WITH SAND, trace silt, fine to coarse grained, moist, brown	0.3
		0.3
		0.2
2.5		0.1
		0.1
		0.1
		0
		0
5.0		0
		0.2
		0.3
		0.3
		0.2
7.5		0.2
		0
		0
		0
		0

(Continued Next Page)

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BORING B26A

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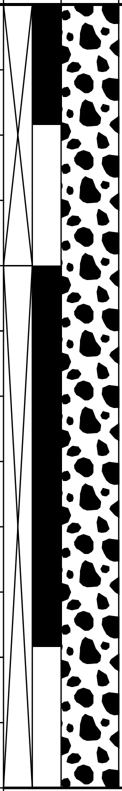
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Dense, WELL GRADED GRAVEL WITH SAND, trace silt, fine to coarse grained, moist, brown *(continued)*	0
10.5		0.1
11.0		0
11.5		0
12.0		0
12.5		0
13.0		0
13.5		0
14.0		0
14.5		0
15.0	Becomes wet	0
15.5		0

Bottom of borehole at 16.0 feet.

17.5

20.0

BORING B270

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/17/15 **COMPLETED** 7/17/15	**NORTHING**	754225.1571 ft **EASTING** 762108.3677 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 5' depth of run

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B270-SUB- 0-2		SILT, moist, brown	
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	1.6
2.5		SSHS-B270-SUB- 2-4			2.8
				BOULDERS, dry, red, fractured	
				No Recovery	
		SSHS-B270-SUB- 4-6		SAND, little fine gravel, moist, brown	4.2
				No Recovery	
5.0				Bottom of borehole at 5.0 feet.	
7.5					

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BORING B271

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/17/15	**COMPLETED** 7/17/15	**NORTHING** 754220.9224 ft	**EASTING** 762088.0161 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
				SILT, moist, brown		0.0
		SSHS-B271-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown with black, trace brick	1.7	
2.5		SSHS-B271-SUB- 2-4			2.3	2.5
				No Recovery		
				SAND, few fine to coarse gravel, moist, brown		
5.0		SSHS-B271-SUB- 4-6		SAND, some fine to coarse gravel, trace silt, trace black shiny material (ash), moist, black green, trace brick	5.6	5.0
7.5		SSHS-B271-SUB- 6-8		POORLY GRADED GRAVEL WITH SAND, dry, light brown	3	7.5
				Bottom of borehole at 8.0 feet.		

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BORING B273

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/29/15 **COMPLETED** 7/29/15

NORTHING 754253.9644 ft **EASTING** 762114.3901 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN	RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			SSHS-B273-SUB- 0-2		SILT, moist, brown	
					SAND, some fine to coarse gravel, moist, brown, trace brick	17.1
2.5			SSHS-B273-SUB- 2-4		SAND, few fine gravel, moist, brown and black, trace brick	3
					No Recovery	
					POORLY GRADED SAND WITH GRAVEL, dry	
					SAND, some fine to coarse gravel, few silt, trace black shiny material (ash), moist, brown	
5.0			SSHS-B273-SUB- 4-6			5.5
			SSHS-B273-SUB- 6-8			0.5
7.5						
					No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B274

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/29/15	**COMPLETED**	7/29/15
NORTHING	754245.0085 ft	**EASTING**	762093.9773 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B274-SUB- 0-2	▥	SILT, moist, brown	
			░	SAND, some fine to coarse gravel, moist, brown with black	27.2
2.5		SSHS-B274-SUB- 2-4	░	SAND, few fine to coarse gravel, trace black shiny material (ash), moist, brown and black, trace brick	5.1
			▩	Concrete	
				No Recovery	
			░	SAND, few fine to coarse gravel, moist, brown, little concrete	
5.0		SSHS-B274-SUB- 4-6	░	SAND, some fine to coarse gravel, moist, brown with black	6.7
			▥	SILT, little sand, moist, brown with black	
7.5		SSHS-B274-SUB- 6-8	░	SAND, some fine to coarse gravel, moist, brown	0.7
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B275

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/17/15	**COMPLETED** 7/17/15	**NORTHING** 754239.1041 ft	**EASTING** 762089.7242 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B275-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	1.2
				POORLY GRADED GRAVEL WITH SAND, moist, brown	
		SSHS-B275-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown with black, little brick	2.4
				POORLY GRADED GRAVEL WITH SAND, moist	
2.5				No Recovery	
5.0		SSHS-B275-SUB- 4- 5.5		SAND, some fine to coarse gravel, moist, brown with black, trace brick	1.4
				No Recovery	

Refusal at 5.5 feet.
Bottom of borehole at 5.5 feet.

7.5

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BORING B276

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754239.6936 ft **EASTING** 762079.3141 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
2.5		SSHS-B276-SUB- 0-2 SSHS-B276-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	10.1 1.3
				No Recovery	
				SAND, some coarse gravel, moist, brown	
5.0		SSHS-B276-SUB- 4-6		SAND, some fine to coarse gravel, few silt, moist, black, trace brick	7.9
				POORLY GRADED GRAVEL WITH SAND, dry, brown	
7.5		SSHS-B276-SUB- 6-8		SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown with black	0.5
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B277
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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/29/15	**COMPLETED**	7/29/15
NORTHING	754297.1657 ft	**EASTING**	762106.3472 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B277-SUB- 0-2	SILT, moist, brown	17.9
2.5	SSHS-B277-SUB- 2-4	SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown	5.2
		No Recovery	
5.0	SSHS-B277-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown, pieces of wood, trace brick	4.3
	SSHS-B277-SUB- 6-8	Moist, red brick	2.2
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B278

PAGE 1 OF 1

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/16/15	**COMPLETED** 7/16/15	**NORTHING** 754295.6839 ft	**EASTING** 762099.3355 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B278-SUB- 0-2		SILT, moist, brown	1
		SSHS-B278-SUB- 2-4		SAND, few fine to coarse gravel, trace silt, moist, brown with black, trace black color	1.4
2.5				No Recovery	
5.0		SSHS-B278-SUB- 4-6 SSHS-B278-SUB- 6-8		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown to black, trace pieces of wood towards bottom of core	2.1 3.8
7.5				Moist Brick	
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B278A

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/29/15	**COMPLETED**	7/29/15
NORTHING	754295.6839 ft	**EASTING**	762099.3355 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	No Sample	SILT, moist, brown	16.9
		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	
2.5	No Sample		2.6
		No Recovery	
		SAND, some fine to coarse gravel, trace silt, moist, brown with black, trace brick	
5.0	No Sample		1.3
7.5		No Recovery	
		SAND, some fine to coarse gravel, moist, brown, trace brick	
	SSHS-B278a-SUB- 8-10	Brick and mortar	3.1

Bottom of borehole at 10.0 feet.

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BORING B279

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/29/15	**COMPLETED** 7/29/15	**NORTHING** 754284.5739 ft	**EASTING** 762079.2603 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Geoprobe		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B279-SUB- 0-2		SAND, some fine to coarse gravel, little silt, moist, brown, trace brick	42.5
2.5		SSHS-B279-SUB- 2-4			5.4
				Moist, brick	
				No Recovery	
				SAND, some fine to coarse gravel, little black shiny material (ash), moist, brown, trace glass pieces	
5.0		SSHS-B279-SUB- 4-6			10.2
				SAND, some fine to coarse gravel, moist, brown with black, pieces of wood	
		SSHS-B279-SUB- 6-8		SAND, some fine to coarse gravel, moist, brown, trace brick	19.6
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B280

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/16/15	**COMPLETED**	7/16/15
NORTHING	754305.8188 ft	**EASTING**	762096.579 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B280-SUB- 0-2		SILT, moist, brown	0.8
		SSHS-B280-SUB- 2-4		SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown	1.9
2.5				No Recovery	
				SAND, few fine to coarse gravel, moist, brown	
5.0		SSHS-B280-SUB- 4-6		SAND, some fine to coarse gravel, moist, dark brown and black, trace brick	7.8
		SSHS-B280-SUB- 6-8		SAND, some fine to coarse gravel, dry, brown	17.2
7.5				Moist Brick	
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B281

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/17/15 **COMPLETED** 7/17/15

NORTHING 754295.8931 ft **EASTING** 762074.7638 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B281-SUB-0-2		SAND, some fine to coarse gravel, moist, brown with black	1.3
2.5		SSHS-B281-SUB-2-4		SAND, some fine to coarse gravel, few silt, moist, brown	1.6
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown	
5.0		SSHS-B281-SUB-4-6		SAND, few fine to coarse gravel, trace black shiny material (ash), moist, brown with black, hydrocarbon odor, trace brick	1
		SSHS-B281-SUB-6-8		SILT, trace coarse gravel, moist, green with black	20.2
7.5				SAND, few fine to coarse gravel, trace silt, moist, brown	
				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B282

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754322.2856 ft **EASTING** 762099.4919 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES Refusal at 5' depth of run, Shifted 2' to SE of original location, very low recovery in shifted location, Brick in shoe. Samples collected from original locatio

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
2.5		SSHS-B282-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	10.1
		SSHS-B282-SUB- 2-4			1.3
5.0		SSHS-B282-SUB- 4-5		SAND, some fine to coarse gravel, moist, brown, few brick	5.6
7.5				Refusal at 5.0 feet. Bottom of borehole at 5.0 feet.	

BORING B283

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/16/15 **COMPLETED** 7/16/15	**NORTHING**	754311.4969 ft **EASTING** 762088.7929 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B283-SUB- 0-2		LEAN CLAY, moist, brown	1.7
				SAND, few fine to coarse gravel, moist, brown	
				POORLY GRADED GRAVEL WITH SAND	
2.5		SSHS-B283-SUB- 2-4		SAND, little fine to coarse gravel, moist, brown	0.7
				SAND, little black shiny material (ash), trace fine gravel, moist, brown, little black shiny material (ash)	
				No Recovery	
		SSHS-B283-SUB- 4-6		SAND, little fine gravel, moist, brown with black, trace black color	
5.0				SAND, some fine to coarse gravel, trace sand, moist, black light yellow	1.7
		SSHS-B283-SUB- 6-8		SAND, some gravel, moist, brown, few brick	1.4
				Concrete pieces	
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B283A

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/29/15	**COMPLETED**	7/29/15
NORTHING	754311.4969 ft	**EASTING**	762088.7929 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown, some bentonite	
2.5		No Sample No Sample		SAND, some fine to coarse gravel, moist, brown, few bentonite	8.4 1.3
				SAND, some fine to coarse gravel, moist, brown with black, few bentonite	
				No Recovery	
				SILT, moist, brown	
5.0 7.5		No Sample		SAND, some fine to coarse gravel, moist, brown with black, few bentonite	2.1
				No Recovery	
		SSHS-B283a-SUB- 8-10		SAND, some silt, few fine to coarse gravel, trace black shiny material (ash), moist, brown	6.1
				Moist, brick	
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING B284

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/29/15 **COMPLETED** 7/29/15
NORTHING 754311.4237 ft **EASTING** 762070.7539 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B284-SUB- 0-2		SILT, moist, brown	
2.5		SSHS-B284-SUB- 2-4		SAND, some fine to coarse gravel, moist, brown	30.1 9.1
				No Recovery	
5.0		SSHS-B284-SUB- 4-6 SSHS-B284-SUB- 6-8		SAND, some fine to coarse gravel, trace silt, moist, brown	18 4
7.5				No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B285

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/14/15 **COMPLETED** 7/14/15
NORTHING 754723.3338 ft **EASTING** 761866.6771 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** Adam Gray
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B285-SUB-0-2		SILT, dry, brown	
				SAND, trace silt, moist, brown	
				POORLY GRADED GRAVEL WITH SAND, GRAVEL, with sand, trace silt, dry, brown	
				No Recovery	
				Bottom of borehole at 2.0 feet.	0.6
2.5					
5.0					
7.5					

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BORING B286

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/14/15 **COMPLETED** 7/14/15

NORTHING 754713.4056 ft **EASTING** 761839.0905 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** A. Gray

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B286-SUB-0-2		SILT, dry, brown	0.4
				SAND, trace fine to coarse gravel, dry, dark brown	
				SAND, some coarse gravel, moist, dark brown to black	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B287

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/14/15 **COMPLETED** 7/14/15

NORTHING 754727.3406 ft **EASTING** 761846.6646 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** A. Gray

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B287-SUB-0-2		SILT, moist, brown	0.4
				SAND, with fine to coarse gravel, dry, brown	
				SAND, with coarse gravel, moist to wet, light brown to black, Alternating bands of light brown to black colors	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B288
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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/24/15	**COMPLETED**	7/24/15
NORTHING	754709.5742 ft	**EASTING**	761828.7158 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B288-SUB- 0-2		SILT, moist, brown	26.2
				SAND, some fine to coarse gravel, moist, brown and black	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

BORING B289

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CLIENT	Unisys		**PROJECT NAME**	Former Sperry Remington North	
PROJECT NUMBER	MN0832		**PROJECT LOCATION**	Elmira, New York	
DATE STARTED	7/24/15	**COMPLETED** 7/24/15	**NORTHING**	754723.7573 ft	**EASTING** 761828.0918 ft
DRILLER	Zebra Environmental		**GROUND ELEVATION**	---	**BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push		**TOP OF CASING ELEVATION**	---	
SAMPLING METHOD	2" x 2' Macrocore		**UTILITY CONTRACTOR**	---	
RIG TYPE	Geoprobe		**LOGGED BY**	A. Ranna	**CHECKED BY** J. Thompson
NOTES					

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B289-SUB- 0-2		SILT, moist, brown	6
				SAND, some fine to coarse gravel, moist, brown and black	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B290

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/24/15 **COMPLETED** 7/24/15
NORTHING 754737.8652 ft **EASTING** 761855.5022 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B290-SUB- 0-2		SILT, moist, brown	10
				SAND, some fine to coarse gravel, trace black shiny material (ash), moist, brown with black	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B295

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/24/15 **COMPLETED** 7/24/15
NORTHING 753781.5925 ft **EASTING** 762563.3259 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD
TOP OF CASING ELEVATION ---
SAMPLING METHOD Hand Auger
UTILITY CONTRACTOR ---
RIG TYPE Hand Auger
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■	SSHS-B295-SS		SILT, moist, brown, trace plant matter	0.5
				Bottom of borehole at 0.2 feet.	
2.5					
5.0					
7.5					

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BORING B296

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 7/21/15	**COMPLETED** 7/21/15	**NORTHING** 753655.2164 ft	**EASTING** 762522.5741 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD Hand Auger		**UTILITY CONTRACTOR** ---	
RIG TYPE Hand Auger		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■	SSHS-B296-SS		SILT, moist, brown	0.5
				Bottom of borehole at 0.2 feet.	
2.5					
5.0					
7.5					

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BORING B297

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/3/15 **COMPLETED** 8/3/15
NORTHING 753527.3098 ft **EASTING** 762409.7069 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES refusal at 1'; shifted 3' to the north of original location; refusal again at 1'; all samples collected from new location

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B297-SS Sample collected by gloved hand		SILT, dry, brown, trace organic material	0.3
				SILT, dry, brown	
		SSHS-B297-SUB-0.17-1		SAND, some fine to coarse gravel, dry, brown	
					0.5
				Refusal at 1.0 feet. Bottom of borehole at 1.0 feet.	
2.5					
5.0					
7.5					

BORING B298

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/3/15 **COMPLETED** 8/3/15	**NORTHING**	753604.2091 ft **EASTING** 762420.1713 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 2' Macrocore	**UTILITY CONTRACTOR**	---
RIG TYPE	Geoprobe	**LOGGED BY**	A. Ranna **CHECKED BY** J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B298-SS Sample collected by gloved hand	▥	SILT, dry, brown, trace organic material (grass roots)	0.1
			▥	SILT, moist, brown	
		SSHS-B298-SUB-0.17-2	░	SAND, some fine to coarse gravel, moist, brown with black	27.5
			▩	Moist, Brick	
				No Recovery	
				Bottom of borehole at 2.0 feet.	
2.5					
5.0					
7.5					

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BORING B299

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/24/15 **COMPLETED** 7/24/15

NORTHING 753920.2177 ft **EASTING** 762667.4469 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN	RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				▥	SILT, moist, brown	
			SSHS-B299-SUB- 0-2	░	SAND, some fine to coarse gravel, moist, brown with red	5.2
2.5			SSHS-B299-SUB- 2-4	░	SAND, some fine to coarse gravel, moist, black	3.1
				░	SAND, some fine to coarse gravel, moist, brown with red	
					No Recovery	
5.0			SSHS-B299-SUB- 4-6	░	SAND, some fine to coarse gravel, moist, brown	5.1
			SSHS-B299-SUB- 6-8	▥	SAND, some sand, little fine gravel, moist, brown	7.2
				░	SAND, some fine to coarse gravel, moist, brown	
7.5					No Recovery	

Bottom of borehole at 8.0 feet.

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BORING B29A

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/13/14 **COMPLETED** 8/13/14

NORTHING 754120 ft **EASTING** 762476 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

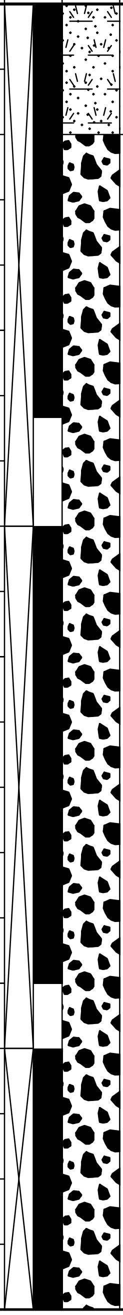
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY M. Bauer **CHECKED BY** A. Gray

NOTES PID: ambient air 0.5 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	0.6
		0.5
	Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown	0.5
		0.6
		0.5
2.5		0.5
		0.5
		0.6
	Becomes medium to coarse sand, silt	0.8
		0.7
5.0		0.6
		0.6
		0.7
		0.9
		1
7.5		1
		1.1
		0.9
		0.9
		1

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BORING B29A

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			Becomes medium to coarse sand, silt *(continued)*	1
				1
			Loose, POORLY GRADED SAND, medium grained, moist, gray, some odor	1.1
				4.6
			No recovery	23
12.5				
15.0				
			Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, wet, dark gray, some odor, staining	85.2
				60
17.5				
			Bottom of borehole at 18.0 feet.	32
20.0				

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BORING B300

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CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/24/15	**COMPLETED**	7/24/15
NORTHING	754018.1734 ft	**EASTING**	762629.2768 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0		ASPHALT, and gravel	
	SSHS-B300-SUB- 0-2	SAND, some fine to coarse gravel, moist, brown	2
		SAND, some black shiny material (ash), little fine gravel, moist, black	
2.5		SAND, some fine to coarse gravel, moist, brown	
	SSHS-B300-SUB- 2-4		2
		No Recovery	
		SAND, some fine to coarse gravel, moist, brown	
		SAND, few fine gravel, moist, black	
		SAND, some fine gravel, moist, brown	
5.0	SSHS-B300-SUB- 4-6	SILT, few sand, little fine gravel, moist, brown	1.1
		SAND, some fine to coarse gravel, moist, brown	
	SSHS-B300-SUB- 6-8	SILT, some sand, little fine gravel, moist, brown	2
7.5			

Bottom of borehole at 8.0 feet.

BORING B301

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/24/15 **COMPLETED** 7/24/15

NORTHING 754082.5247 ft **EASTING** 762583.9421 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	REMARKS	MATERIAL DESCRIPTION	PID (ppm)
0.0	SSHS-B301-SUB- 0-2	SILT, moist, brown	0.5
	SSHS-B301-SUB- 2-4	SAND, some fine to coarse gravel, few black shiny material (ash), moist, dark black	3.6
2.5		No Recovery	
		SAND, some fine to coarse gravel, moist, brown	
		SAND, some coarse gravel, moist, black	
5.0	SSHS-B301-SUB- 4-6	SAND, some fine to coarse gravel, moist, brown	431
		SILT, some coarse gravel, moist, brown	
	SSHS-B301-SUB- 6-8	SILT, moist, black, hydrocarbon odor	644.4
7.5		No Recovery	

Bottom of borehole at 8.0 feet.

BORING B302

CLIENT Unisys	**PROJECT NAME** Former Sperry Remington North
PROJECT NUMBER MN0832	**PROJECT LOCATION** Elmira, New York
DATE STARTED 7/24/15 **COMPLETED** 7/24/15	**NORTHING** 754289.7657 ft **EASTING** 762475.339 ft
DRILLER Zebra Environmental	**GROUND ELEVATION** --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push	**TOP OF CASING ELEVATION** ---
SAMPLING METHOD 2" x 2' Macrocore	**UTILITY CONTRACTOR** ---
RIG TYPE Geoprobe	**LOGGED BY** A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-B302-SUB- 0-2		SAND, some fine to coarse gravel, moist, brown	20.4
2.5		SSHS-B302-SUB- 2-4			4
				No Recovery	
				SAND, some fine to coarse gravel, moist, brown	
5.0		SSHS-B302-SUB- 4-6			37
		SSHS-B302-SUB- 6-8			0.8
				SILT, some coarse gravel, moist, brown	
				SAND, some fine to coarse gravel, moist, brown	
				No Recovery	
7.5					

Bottom of borehole at 8.0 feet.

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BORING B303

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CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/5/15	**COMPLETED** 8/5/15	**NORTHING** 754426.8404 ft	**EASTING** 762417.3729 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Hollow Stem Auger		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 2' Macrocore		**UTILITY CONTRACTOR** ---	
RIG TYPE Hand Auger		**LOGGED BY** A. Ranna	**CHECKED BY** J. Thompson

NOTES Refusal at 1'; shifted 3' to south of original position; refusal at 1' again, rock at base of borehole, all samples collected from new location

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
	▮	SSHS-B303-SUB- 0-2	▨	SAND, some fine to coarse gravel, moist, brown	1.2	0.0

Refusal at 1.0 feet.
Bottom of borehole at 1.0 feet.

2.5

5.0

7.5

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BORING B304

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/5/15 **COMPLETED** 8/5/15

NORTHING 754498.4748 ft **EASTING** 762385.0613 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Hollow Stem Auger

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Hand Auger

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■	SSHS-B304-SUB- 0-1	▨	SAND, some fine to coarse gravel, few silt, moist, brown	0
				No Recovery	

Refusal at 1.0 feet.
Bottom of borehole at 1.0 feet.

2.5

5.0

7.5

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BORING B305

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/14/15 **COMPLETED** 7/14/15

NORTHING 754805.0156 ft **EASTING** 762068.5608 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** A. Gray

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		SSHS-B305-SS		SILT, dry, brown	0.3
		SSHS-B205-SUB-0.17-2		SAND, some fine to coarse gravel, moist, brown	0.4
				GRAVEL, some sand, dry, brown	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING B40A

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CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/14/15 **COMPLETED** 7/14/15
NORTHING 754982.265 ft **EASTING** 761853.1613 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** A. Gray
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, trace gravel, trace sand, dry, brown	
		SSHS-B40-A-SUB-0-2		SILT, trace fine to coarse gravel, trace sand, dry, brown	0.3
				SAND, trace fine to coarse gravel, trace silt, moist, brown	
				Wood in the bottom	
				No Recovery	

Bottom of borehole at 2.0 feet.

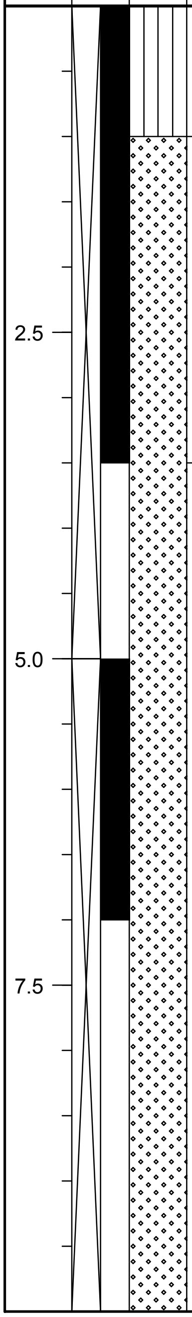
2.5

5.0

7.5

BORING B42A

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/15/14	**COMPLETED**	8/15/14
NORTHING	755282 ft	**EASTING**	761737 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	A. Wadhawan	**CHECKED BY**	A. Gray
NOTES	PID: ambient air 0.1 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	SANDY SILT, fine grained, moist, brown	0
		0
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, dry to moist, brown and black	0.3
		0.3
		0
2.5		0
		0
	WELL GRADED SAND WITH SILT, fine to coarse grained, moist, brown	0
		0
		0
5.0		0.1
		0.1
		0.1
		0.1
		0.1
7.5		0.1
		0.1
		0.1
		0.1
		0.1

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BORING B42A

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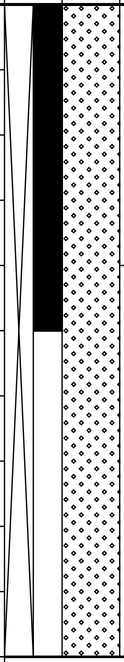
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH SILT, fine to coarse grained, moist, brown *(continued)*	0
		0
		0.1
		0
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.1
12.5		0
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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BORING B43A

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/15/14 **COMPLETED** 8/15/14	**NORTHING**	755390 ft **EASTING** 761687 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	A. Wadhawan **CHECKED BY** A. Gray

NOTES PID: ambient air 0.1 ppm

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			POORLY GRADED SAND WITH SILT, fine grained, moist, brown	0.1
				7.1
			WELL GRADED SAND WITH GRAVEL, medium to coarse grained, dry, brown and black	3.5
				2.3
				2.3
2.5				0.8
				0.7
			SANDY LEAN CLAY, trace gravel, trace cobbles, moist, gray and brown, medium plasticity	0.4
				0.7
			POORLY GRADED SAND, fine to coarse grained, moist, brown	0.7
5.0				0.5
				0.1
			WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.1
				0.1
			POORLY GRADED SAND, trace gravel, medium to coarse grained, moist, brown	0.1
7.5				0.1
				0.1
				0.1
				0.1
				0.1

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BORING B43A

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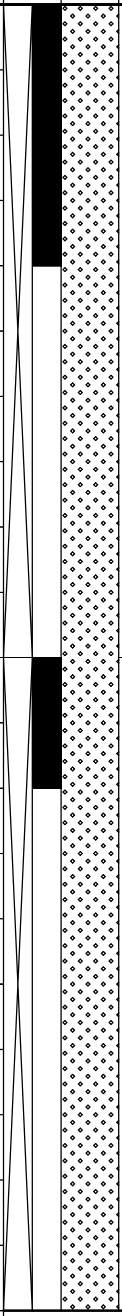
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

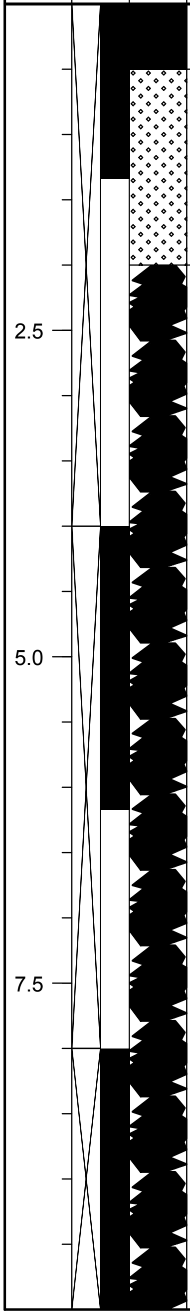
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
		0.1
12.5		0.1
		0.1
		0.1
		0.1
		0.1
15.0	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, saturated, brown	
17.5		
20.0	Bottom of borehole at 20.0 feet.	

BORING B64

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 753799 ft **EASTING** 762703 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



MATERIAL DESCRIPTION	PID (ppm)
ASPHALT	0
WELL GRADED SAND WITH GRAVEL, dry to moist, brown, fill material	0
Black, ash like material	0
	0
	0
	0
	0
	0
	0
	0.1

(Continued Next Page)

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BORING B64

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				Soft, SILT, moist, brown	0
					0
				Dense, WELL GRADED GRAVEL WITH SAND, trace silt, wet, light brown	0
12.5					
					0
					0
15.0					0
				Bottom of borehole at 16.0 feet.	
17.5					
20.0					

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BORING B65

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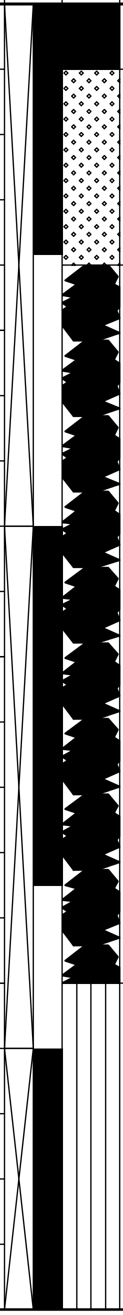
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14	**COMPLETED**	8/14/14
NORTHING	753702 ft	**EASTING**	762742 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in		
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	M. Bauer
CHECKED BY	A. Gray		
NOTES	PID: ambient air 0.0 ppm		



DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				ASPHALT	0.1
				WELL GRADED SAND WITH GRAVEL, fill material	0.2
				Black, ash like material	0.1
2.5					
					0
					0.6
5.0					0.3
					0
					0
7.5				Dense, SANDY SILT, moist, light brown	
					0
					0

(Continued Next Page)

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BORING B65

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			Dense, SANDY SILT, moist, light brown *(continued)*	0
				0
			Loose, GRAVELLY SILT, some sand, fine grained, light brown	0
12.5				
				0
				0
15.0				0
			Bottom of borehole at 16.0 feet.	
17.5				
20.0				

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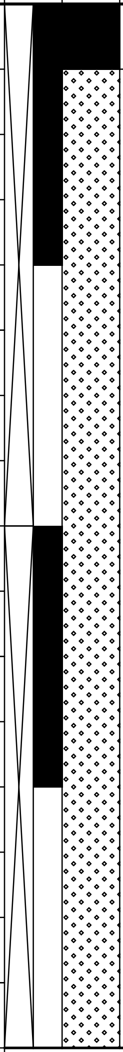
BORING B66

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 753769 ft **EASTING** 762634 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm

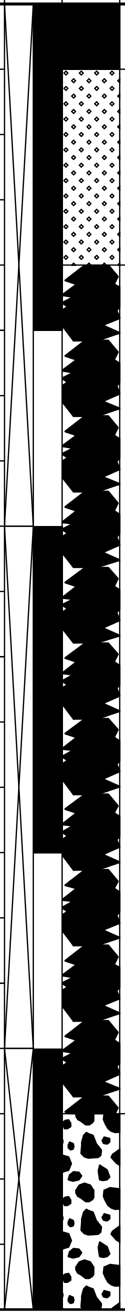


DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH GRAVEL, fill material	
		0.1
2.5		0.1
		0.1
		0
5.0		0
		0
7.5		0

Refusal at 8.0 feet.
Bottom of borehole at 8.0 feet.

BORING B67
PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 753674 ft **EASTING** 762684 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	WELL GRADED SAND WITH GRAVEL, fill material	
		0
	Black, fill material, ash like material	0
2.5		
		0
		0.1
5.0		0
		0
		0
7.5		
		0.1
	Very dense, WELL GRADED GRAVEL WITH SAND, trace silt, fine to medium grained, moist, orangeish brown	
		0.1

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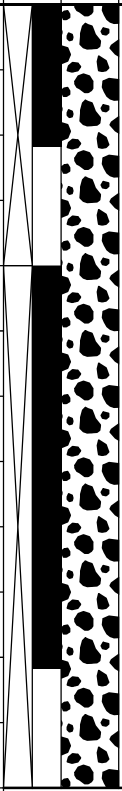
BORING B67

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Very dense, WELL GRADED GRAVEL WITH SAND, trace silt, fine to medium grained, moist, orangeish brown *(continued)*	0.1
		0.1
		0
12.5		
		0
	Becomes wet	
		0
15.0		0
	Bottom of borehole at 16.0 feet.	
17.5		
20.0		

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BORING B68

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/14/14 **COMPLETED** 8/14/14

NORTHING 753740 ft **EASTING** 762578 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

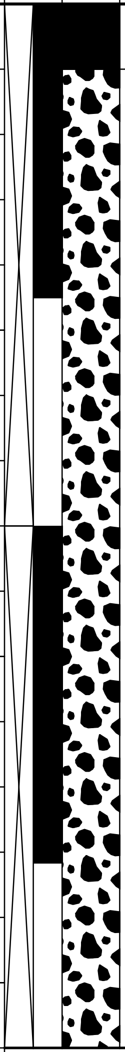
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY M. Bauer **CHECKED BY** A. Gray

NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.2
	WELL GRADED GRAVEL WITH SAND, fill material, bricks	
		0.1
		0.1
2.5		
		0.1
		0
		0
5.0		0.8
		0.2
		2.5
		2.1
		0.7
7.5		0.8

Refusal at 8.0 feet.
Bottom of borehole at 8.0 feet.

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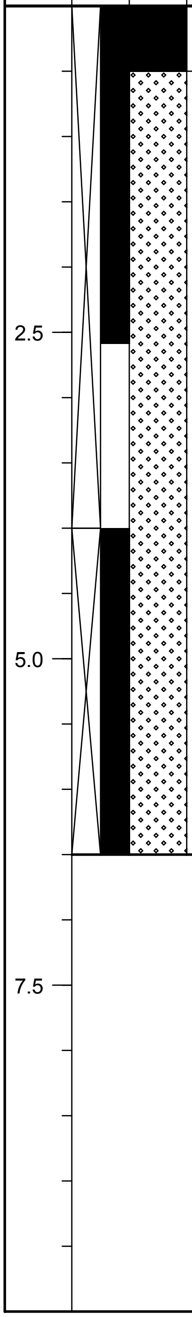
BORING B69

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 753646 ft **EASTING** 762614 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



MATERIAL DESCRIPTION	PID (ppm)
ASPHALT	0.1
WELL GRADED SAND WITH GRAVEL, brown to black, fill material, wood and debris	0.1
	0
	0
	0.1
	0.1
	0.1
	0.1
	0.3
	0.1
	0.2
	0.1
	0
Refusal at 6.5 feet. Bottom of borehole at 6.5 feet.	0.1

0.0
2.5
5.0

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BORING B70

PAGE 1 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/14/14 **COMPLETED** 8/14/14

NORTHING 754303 ft **EASTING** 762090 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

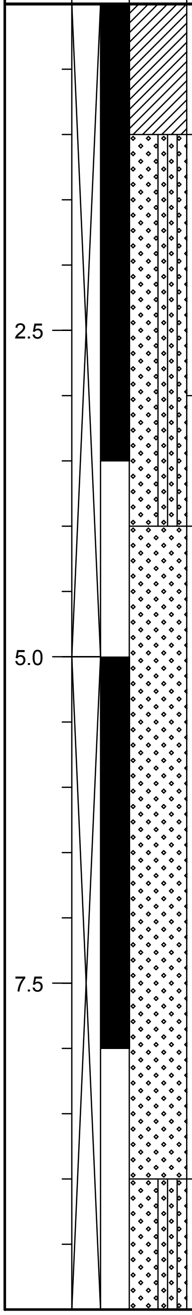
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY N. Gutschow **CHECKED BY** A. Gray

NOTES PID: ambient air 0.1 - 0.4 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	LEAN CLAY, moist, brown, low plasticity	0.1
		0.1
	WELL GRADED SAND WITH SILT AND GRAVEL, fine to coarse grained, moist, brown	0.1
		0.1
		0.1
2.5		0.2
	WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, brown	0.4
		0.5
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, black and brown	0.8
		1.1
5.0		1.2
		1.2
		1.1
		1.1
		1.3
7.5		1.5
		2.1
		2.4
	WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, black and gray	1.9
		1.7

(Continued Next Page)

BORING B70

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, black and gray *(continued)*	1.8
				1.2
				1.1
				1.2
				1.3
12.5				1.4
				1.5
			POORLY GRADED SAND, fine grained, black	1.6
			WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, black and gray	1.3
				1.1
15.0			Bottom of borehole at 15.0 feet.	
17.5				
20.0				

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BORING B71

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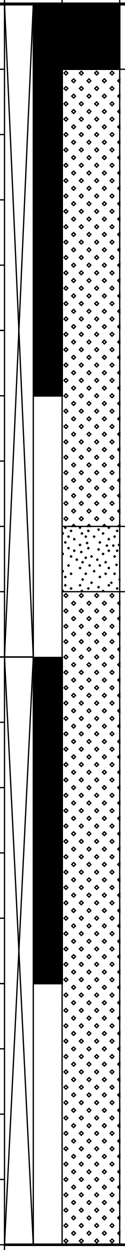
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/15/14	**COMPLETED**	8/15/14
NORTHING	754671 ft	**EASTING**	761629 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	A. Wadhawan	**CHECKED BY**	A. Gray
NOTES	PID: ambient air 0.0 - 0.1 ppm		



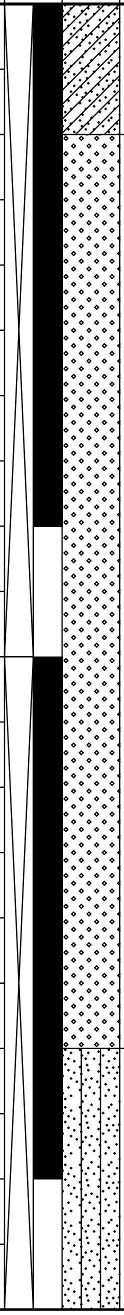
DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.2
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.2
		0.8
		0.5
		0.5
2.5		1.1
		1.1
		0.5
	POORLY GRADED SAND, fine grained, moist, brown	0.3
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.3
5.0		0.1
		0.1
		0.1
		0.6
		0.6
7.5		0.5
		0.5
		0.3
		0.6

Refusal at 9.5 feet.
Bottom of borehole at 9.5 feet.

BORING B72

PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/15/14 **COMPLETED** 8/15/14
NORTHING 754608 ft **EASTING** 761648 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY A. Wadhawan **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	CLAYEY SAND, fine grained, moist, brown, low plasticity	0
		0
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, dry, brown	0
		0
		0.1
2.5		0
		0
		0
		0.1
		0.1
5.0		0.1
		0.1
		0.1
		0
		0.1
7.5		0.1
	SILTY SAND, trace gravel, fine grained, moist, brown	0.1
		0.2
		0.1
		0.1

(Continued Next Page)

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BORING B72

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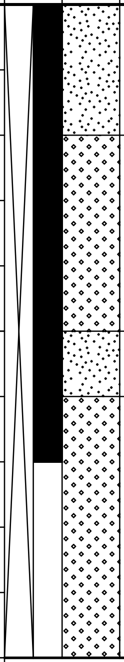
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	POORLY GRADED SAND, medium grained, saturated, brown	0.1
		0.1
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.1
		0.1
		0.1
12.5	POORLY GRADED SAND, medium grained, moist, brown	0.1
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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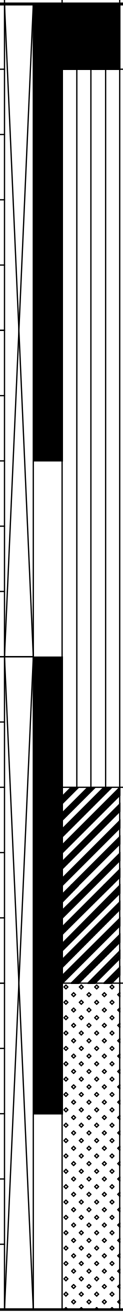
BORING B73
PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 753905 ft **EASTING** 761917 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm

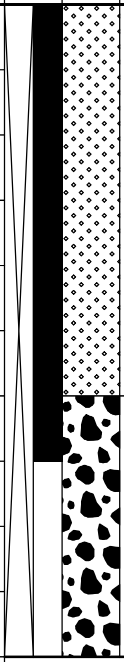


DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	Medium dense, SILT WITH SAND, with gravel, medium grained, moist, brown and gray	0.1
		0.1
		0.1
		0.1
2.5		0.1
		0.1
		0.1
		0.1
		0.1
5.0		0.1
		0.1
	Soft, LEAN CLAY WITH SAND, some silt, wet, gray, low to medium plasticity	0.1
		0.1
		0.1
7.5	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
		0.1

(Continued Next Page)

BORING B73

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown *(continued)*	0.1
		0.1
		0.1
		0.1
		0.1
12.5		0.1
	WELL GRADED GRAVEL WITH SAND, coarse grained, moist, brown	0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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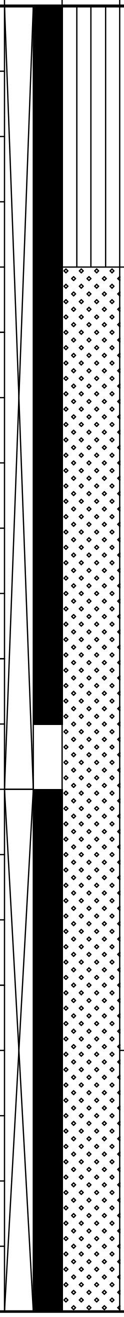
BORING B74

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 753853 ft **EASTING** 761935 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Medium dense, GRAVELLY SILT WITH SAND, trace gravel, fine grained, dry, brown	0
		0.1
		0.1
		0.2
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown and white	0.2
2.5		0.3
		0.2
		0.1
		0.2
		0.3
5.0		0.3
		0.2
		0.2
		0.1
		0.2
7.5		0.1
	WELL GRADED SAND WITH GRAVEL, with gravel, coarse grained, moist, brown	0.1
		0.2
		0.1
		0.1

(Continued Next Page)

BORING B74

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			WELL GRADED SAND WITH GRAVEL, with gravel, coarse grained, moist, brown *(continued)*	0.2
				0.1
			WELL GRADED SAND, coarse grained, moist to wet, brown	0.1
				0.1
				0.1
12.5				0.1
				0.2
				0.1
				0.1
			Becomes wet	0.1
15.0				0.1
				0.1

Bottom of borehole at 16.0 feet.

17.5

20.0

BORING B75

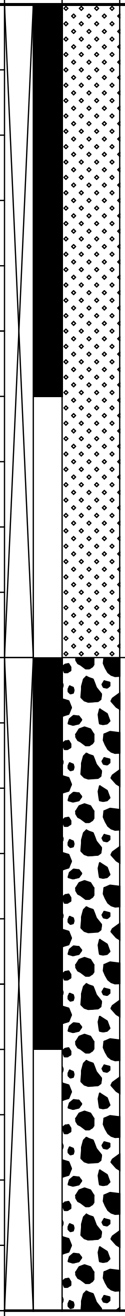
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14	**COMPLETED**	8/14/14
NORTHING	754721 ft	**EASTING**	761851 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	N. Gutschow	**CHECKED BY**	A. Gray
NOTES	PID: ambient air 0.0 ppm		

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0			LEAN CLAY, moist, brown, medium plasticity	1.2
				1.3
			CLAYEY SAND WITH GRAVEL, medium grained, moist, brown	1.5
				1.9
			Medium dense, GRAVELLY SILT WITH SAND, moist, black	2
2.5				2.3
			Medium dense, SILTY GRAVEL WITH SAND, moist, white and brown	1.7
				1.4
				1.3
				1.1
5.0				1.1
				1.3
			WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	1.7
				2
				2.1
7.5				2
				1.9
				0.9
				0.7
				0.5

(Continued Next Page)

BORING B75

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown *(continued)*	1.9
		2
		2.1
		2.3
		2.1
12.5		1.9
		2
		1.8
		1.9
		1.8
15.0	WELL GRADED GRAVEL WITH SAND, medium to coarse grained, saturated, brown	1.4
		1.3
		0.9
		0.6
		0.7
17.5		0.8
		1
		0.9
		0.8
		0.6
20.0	Bottom of borehole at 20.0 feet.	

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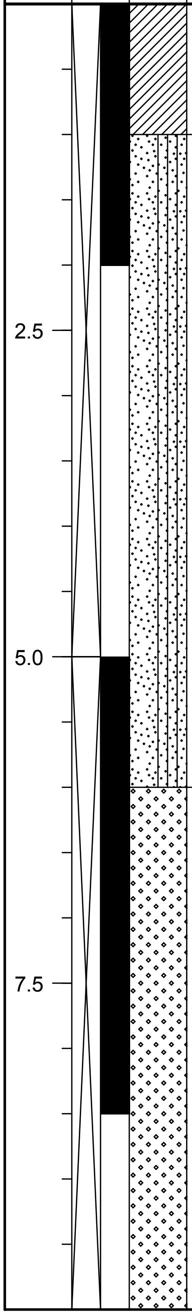
BORING B76

PAGE 1 OF 2

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14	**NORTHING**	754690 ft
COMPLETED	8/14/14	**EASTING**	761775 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
		BORING DIAMETER	2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	N. Gutschow
		CHECKED BY	A. Gray
NOTES	PID: ambient air 0.0 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	GRAVELLY LEAN CLAY, moist, brown, low plasticity	0.3
		0.3
	POORLY GRADED SAND WITH SILT, fine to coarse grained, moist, brown	0
		0
		0.2
2.5		0.3
		0.2
		0.1
		0
		0
5.0		0
		0
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown to gray	0
		0.3
		0.5
7.5		0.1
		0
		0
		0
		0

(Continued Next Page)

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BORING B76

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown to gray *(continued)*	0
					0
					0
					0
					0
12.5					0
					0
					0
					0
				Becomes wet	0
15.0				Bottom of borehole at 15.0 feet.	
17.5					
20.0					

BORING B77

PAGE 1 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/14/14 **COMPLETED** 8/14/14

NORTHING 754662 ft **EASTING** 761701 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

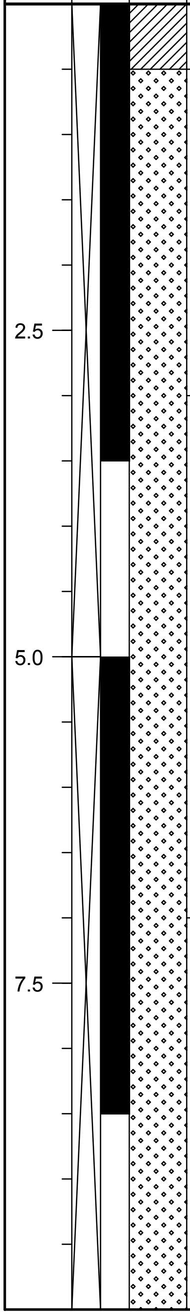
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY N. Gutschow **CHECKED BY** A. Gray

NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	LEAN CLAY, trace gravel, moist, brown, medium plasticity	0
	WELL GRADED SAND WITH GRAVEL, with silt, medium to coarse grained, moist, brown	0
		0
		0
		0
2.5		0
	WELL GRADED SAND WITH GRAVEL, with silt, fine to coarse grained, moist, brown	0
		0
		0
		0
5.0		0
		0
		0
		0
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown to gray	0
7.5		0
		0
		0
		0
		0

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BORING B77

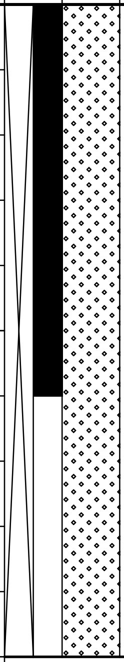
PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown to gray *(continued)*	0
		0
		0
		0
		0
12.5		0
		0
		0
		0
	Becomes wet	0
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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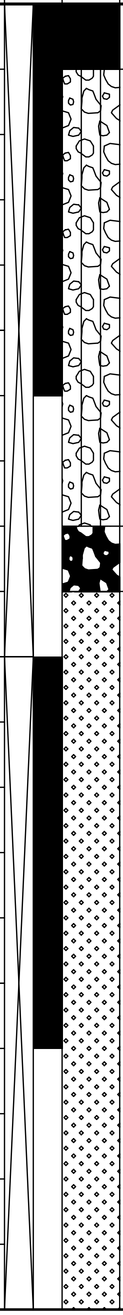
BORING B78

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 754446 ft **EASTING** 761926 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	SILTY GRAVEL WITH SAND, brown and black, some brick pieces	0
		0
		0
		0
2.5		0
		0
		0
	GRAVEL, dry, white	0
	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0
5.0		0
		0
		0
		0
		0
7.5		0
		0
		0
		0
		0

(Continued Next Page)

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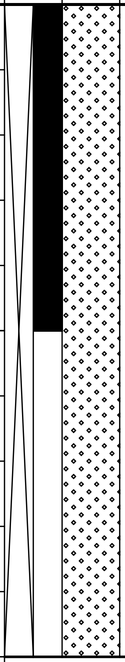
BORING B78

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

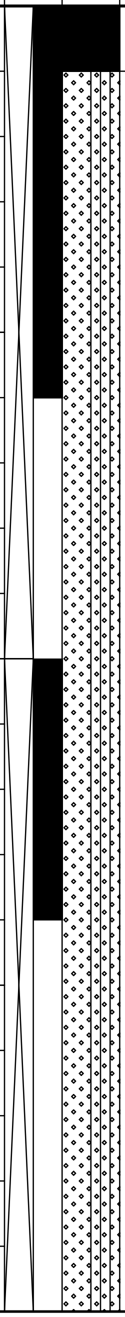
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, fine to coarse grained, brown and whiteish gray	0
		0
		0
		0
		0
12.5		0
		0
		0
		0
	Becomes wet	0
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

BORING B79

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 754421 ft **EASTING** 761854 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, brown and black	0
		0
		0
		0
2.5		0
		0
		0
		0
		0
5.0		0
		0
		0
		0
		0
7.5		0
		0
		0
		0
		0

(Continued Next Page)

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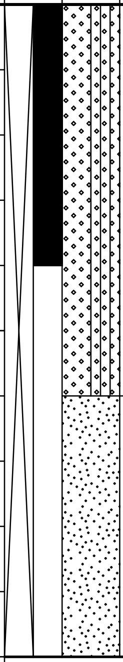
BORING B79
PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH SILT AND GRAVEL, medium to coarse grained, moist, brown and black *(continued)*	0
		0
		0
		0
		0
12.5		0
	POORLY GRADED SAND, coarse grained, moist, brown	0
		0
		0
	Becomes wet	0
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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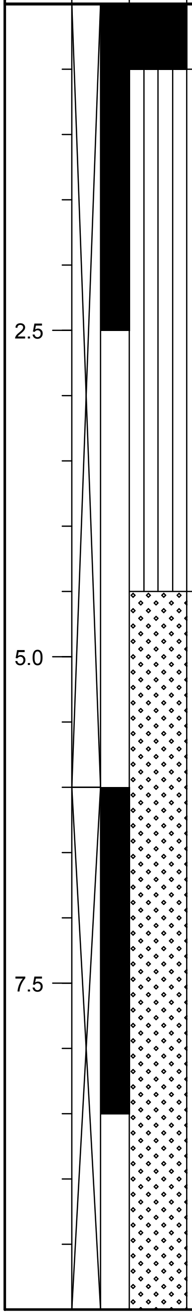
BORING B80
PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/14/14 **COMPLETED** 8/14/14
NORTHING 754391 ft **EASTING** 761776 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 - 0.2 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	Medium dense, GRAVELLY SILT WITH SAND, moist, brown	0
		0
		0
		0
2.5		0
		0
		0
		0
	WELL GRADED SAND WITH GRAVEL, dry, brown and whiteish gray	0
5.0		0
		0
		0
		0
		0
7.5		0
		0
		0
		0
		0

(Continued Next Page)

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BORING B80

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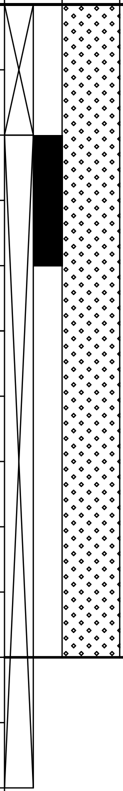
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, dry, brown and whiteish gray *(continued)*	0
		0
		0
		0
		0
12.5		0
		0.8
		1
	Becomes wet	0.5
		0
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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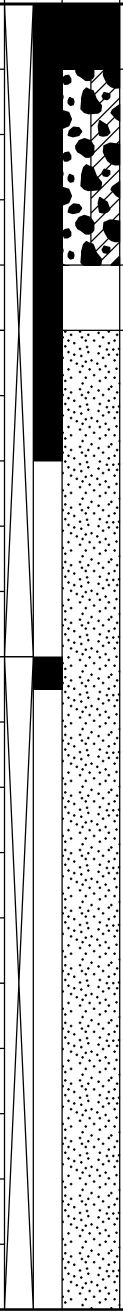
BORING B81

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14 **COMPLETED** 8/14/14	**NORTHING**	754348 ft **EASTING** 761969 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	N. Gutschow **CHECKED BY** A. Gray
NOTES	PID: ambient air 1.1 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	1.1
	WELL GRADED GRAVEL WITH CLAY, medium to coarse grained, moist, brown	1.1
		1.1
		1.1
	Wood construction debris, unknown odor	1.1
2.5	POORLY GRADED SAND WITH GRAVEL, medium to coarse grained, moist, black and brown	1.1
		1.1
		1.1
		1.1
		1.1
5.0		1.1
		1.1
		1.1
		1.1
		1.1
7.5		1.1
		1.1
		1.1
		1.1
		1.1

(Continued Next Page)

BORING B81

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

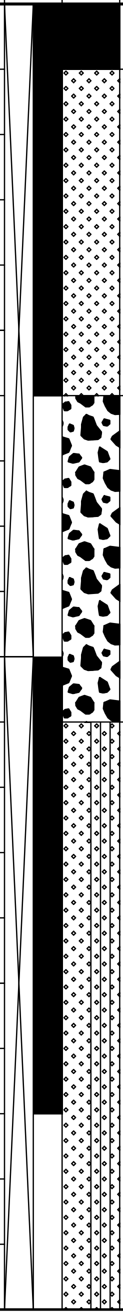
PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				POORLY GRADED SAND WITH GRAVEL, medium to coarse grained, moist, black and brown *(continued)*	1.1
					1.1
					1.1
					1.1
					1.1
12.5					1.1
				Becomes wet	1.1
					1.1
					1.1
					1.1
15.0				Bottom of borehole at 15.0 feet.	
17.5					
20.0					

BORING B82

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 754313 ft **EASTING** 761894 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 - 0.2 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH SILT, medium to coarse grained, moist, brown	0.1
		0.2
		0.1
		0.1
2.5		0.1
	WELL GRADED GRAVEL WITH SAND, dry, gray	0.1
		0.2
		0.1
		0.1
5.0		0.1
	WELL GRADED SAND WITH SILT, medium to coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
7.5		0.1
		0.1
		0.1
		0.1
		0.1

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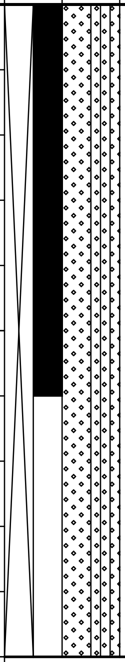
CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Becomes gray	0.1
		0.1
		0.1
		0.1
		0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0		

Bottom of borehole at 15.0 feet.

17.5

20.0

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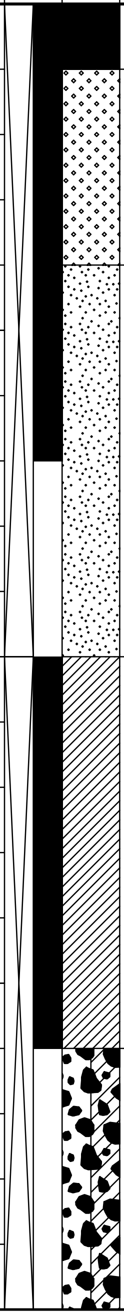
BORING B83

PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 754285 ft **EASTING** 761818 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown	0.1
		0.1
		0.1
	POORLY GRADED SAND WITH GRAVEL, fine grained, moist, brown	0.1
2.5		0.1
		0.1
		0.1
		0.1
		0.1
5.0	LEAN CLAY, trace gravel, moist, brown and gray, medium plasticity	0.1
		0.1
		0.1
		0.1
		0.1
7.5		0.1
	WELL GRADED GRAVEL WITH CLAY, with sand, moist, gray, medium plasticity	0.1
		0.1
		0.1
		0.1

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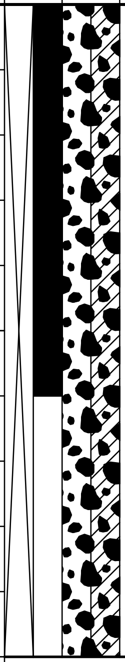
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

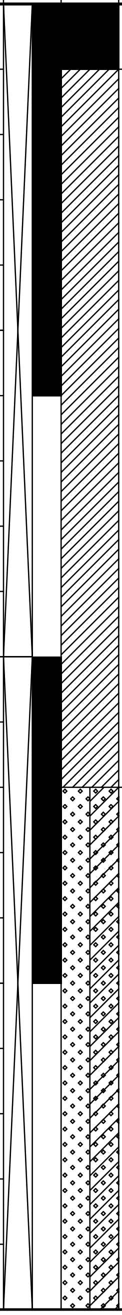


DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				WELL GRADED GRAVEL WITH CLAY, with sand, moist, gray, medium plasticity *(continued)*	0.1
					0.1
					0.1
					0.1
					0.1
12.5					0.1
					0.1
					0.1
				Becomes wet	0.1
					0.1
15.0				Bottom of borehole at 15.0 feet.	
17.5					
20.0					

BORING B84

PAGE 1 OF 2

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14 **COMPLETED** 8/14/14	**NORTHING**	754282 ft **EASTING** 762004 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	N. Gutschow **CHECKED BY** A. Gray
NOTES	PID: ambient air 1.0 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	1
	GRAVELLY LEAN CLAY WITH SAND, moist, brown and black, low plasticity	1
		1
		1
		1
2.5		1
		1
		1
		1
		1
5.0		1
		1
	WELL GRADED SAND WITH CLAY, coarse grained, moist, brown	1
		1
		1
7.5		1
		1
		1
		1
		1

(Continued Next Page)

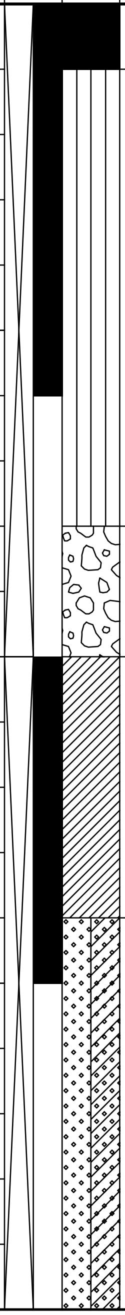
BORING B84

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				WELL GRADED SAND WITH CLAY, coarse grained, moist, brown *(continued)*	1
				WELL GRADED SAND WITH GRAVEL, fine to coarse grained, dry, brown and white	1
					1
					1
					1
12.5					1
					1
				Becomes wet	1
					1
					1
15.0				Bottom of borehole at 15.0 feet.	
17.5					
20.0					

BORING B85

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/13/14 **COMPLETED** 8/13/14	**NORTHING**	754222 ft **EASTING** 761929 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	--- **BORING DIAMETER** 2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	N. Gutschow **CHECKED BY** A. Gray
NOTES	PID: ambient air 0.1 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	Medium dense, GRAVELLY SILT, trace sand, moist, brown	0.1
		0.1
		0.2
		0.2
2.5		0.1
		0.2
		0.1
	POORLY GRADED GRAVEL, trace sand, moist, black, ash-like appearance	0.1
		0.1
5.0	LEAN CLAY WITH SAND, trace gravel, moist, brown, medium plasticity	0.1
		0.1
		0.1
		0.1
	WELL GRADED SAND WITH CLAY AND GRAVEL, medium grained, moist, brown	0.1
7.5		0.2
		0.1
		0.1
		0.2
		0.1

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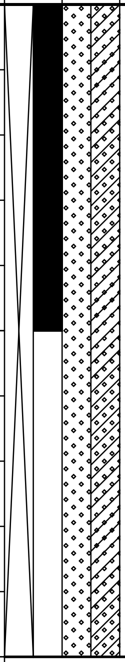
BORING B85

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH CLAY AND GRAVEL, medium grained, moist, brown *(continued)*	0.1
		0.1
		0.1
		0.2
		0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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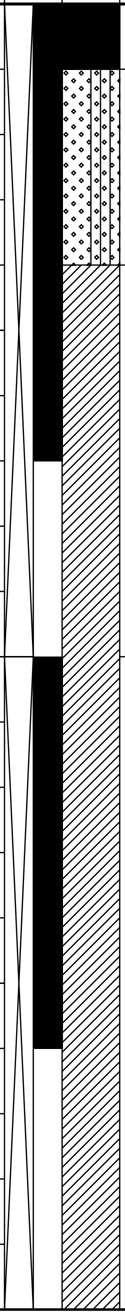
BORING B86

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 754195 ft **EASTING** 761853 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 - 0.2 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH SILT AND GRAVEL, coarse grained, moist, brown	0.1
		0.2
		0.1
	LEAN CLAY WITH SAND, trace gravel, gray, medium plasticity	0.1
2.5		0.1
		0.1
		0.1
		0.2
		0.1
5.0	GRAVELLY LEAN CLAY, with sand, moist, brown, low plasticity	0.1
		0.2
		0.1
		0.1
		0.1
7.5		0.2
		0.2
		0.2
		0.2
		0.2

(Continued Next Page)

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BORING B86

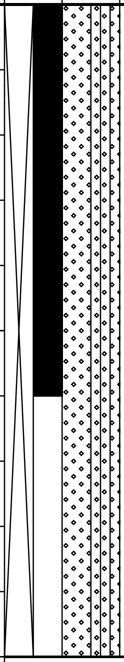
PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

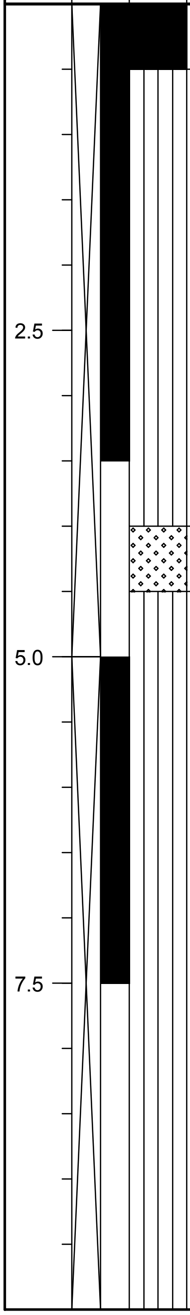
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH SILT, with gravel, fine grained, moist, brown	0.1
		0.1
		0.2
		0.1
		0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

BORING B87

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/14/14	**NORTHING**	754220 ft
COMPLETED	8/14/14	**EASTING**	762039 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
		BORING DIAMETER	2 in
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	N. Gutschow
		CHECKED BY	A. Gray
NOTES	PID: ambient air 0.0 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0
	Medium dense, GRAVELLY SILT WITH SAND, and coal, moist, brown and black	0
		0
		0
		0
2.5		0
		0
		0
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, black, ash like material	0
	Medium dense, GRAVELLY SILT WITH SAND, moist, brown	0
5.0		0
		0
		0
		0
		0
7.5		0
		0
		0
		0
		0

(Continued Next Page)

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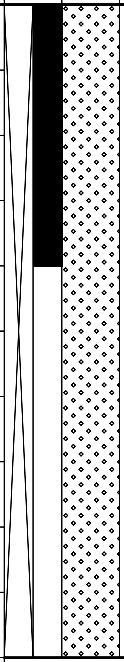
BORING B87

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED SAND WITH GRAVEL, medium to coarse grained, moist, brown	0
		0
		0
		0
		0
12.5		0
		0
		0
		0
	Becomes wet	0
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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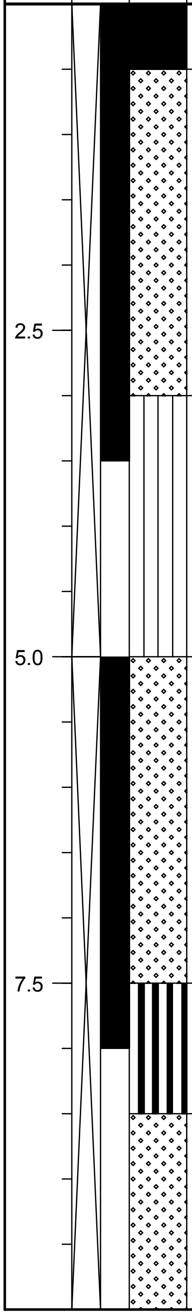
BORING B88

PAGE 1 OF 2

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/13/14	**COMPLETED**	8/13/14
NORTHING	754144 ft	**EASTING**	761960 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	N. Gutschow	**CHECKED BY**	A. Gray
NOTES	PID: ambient air 0.1 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
2.5		0.1
	Dense, SILT, trace sand, trace gravel, moist, brown and gray	0.1
		0.1
		0.1
		0.1
5.0	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, gray and brown	0.1
		0.1
		0.1
		0.1
		0.1
7.5	SILTY GRAVEL, with sand, with gravel, moist, gray and brown, low plasticity	0.1
		0.1
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, gray and brown	0.1
		0.1
		0.1

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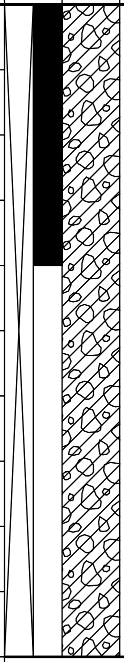
BORING B88

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	CLAYEY GRAVEL WITH SAND, coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
		0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0		

Bottom of borehole at 15.0 feet.

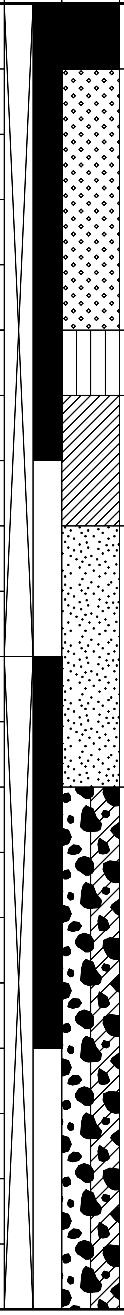
17.5

20.0

BORING B89

PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 754116 ft **EASTING** 761885 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY N. Gutschow **CHECKED BY** A. Gray
NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH GRAVEL, coarse grained, moist, brown	0.1
		0.1
		0.1
		0.1
2.5	Medium dense, GRAVELLY SILT, moist, brown	0.1
	LEAN CLAY WITH GRAVEL, moist, brown, medium plasticity	0.1
		0.1
	POORLY GRADED SAND, medium to coarse grained, moist, brown	0.1
		0.1
5.0		0.1
		0.1
	WELL GRADED GRAVEL WITH CLAY AND SAND, moist, brown	0.1
		0.2
		0.1
7.5		0.2
		0.1
		0.1
		0.2
		0.1

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BORING B89

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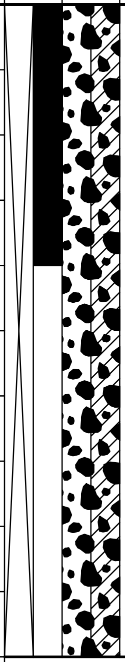
CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED GRAVEL WITH CLAY AND SAND, moist, brown *(continued)*	0.1
		0.1
		0.1
		0.2
		0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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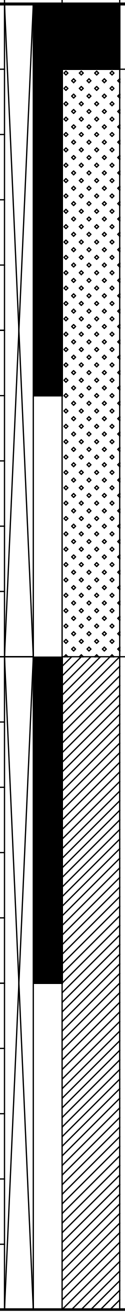
BORING B90

PAGE 1 OF 2

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/13/14	**COMPLETED**	8/13/14
NORTHING	754030 ft	**EASTING**	762009 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	N. Gutschow	**CHECKED BY**	A. Gray
NOTES	PID: ambient air 0.1 - 0.2 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	Dense, WELL GRADED SAND WITH GRAVEL, fine grained, moist, dark brown	0.1
		0.1
		0.1
		0.1
2.5		0.2
		0.1
		0.1
		0.1
		0.2
5.0	LEAN CLAY WITH SAND, with silt, with gravel, moist, gray, medium plasticity	0.1
		0.2
		0.3
		0.3
		0.3
7.5		0.3
		0.3
		0.3
		0.4
		0.4

(Continued Next Page)

BORING B90

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0		■	▨	LEAN CLAY WITH SAND, with silt, with gravel, moist, gray, medium plasticity *(continued)*	0.2
		■	▨		0.2
			▨		0.2
			▨		0.2
			▨		0.1
12.5			▨		0.2
			●	WELL GRADED GRAVEL WITH SAND, coarse grained, moist to wet, brown	0.2
			●		0.2
			●		0.2
			●	Becomes wet	0.2
15.0				Bottom of borehole at 15.0 feet.	
17.5					
20.0					

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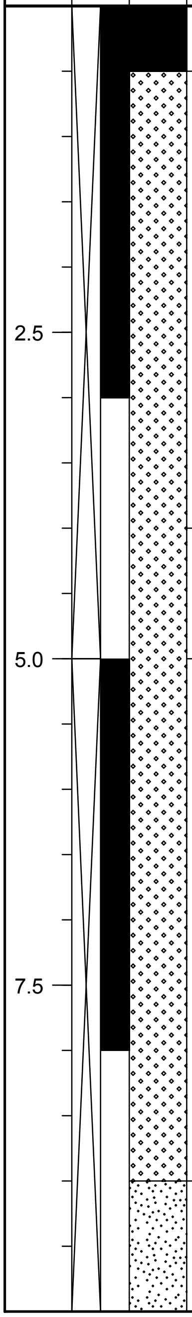
BORING B91

PAGE 1 OF 2

CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/13/14	**COMPLETED** 8/13/14	**NORTHING** 754051 ft	**EASTING** 761937 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 5' Macrocore		**UTILITY CONTRACTOR** New York Leak Detection	
RIG TYPE Geoprobe		**LOGGED BY** N. Gutschow	**CHECKED BY** A. Gray

NOTES PID: ambient air 0.1 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	ASPHALT	0.1
	WELL GRADED SAND WITH SILT AND GRAVEL, fine grained, moist, brown	0.1
		0.1
		0.1
		0.3
2.5		0.8
		1.5
		1.7
	WELL GRADED SAND WITH GRAVEL, fine grained, moist, black	2.3
		1.8
5.0	WELL GRADED SAND WITH GRAVEL, medium grained, dry, white and brown	2.7
		3.6
		2.8
		1.7
		1.1
7.5		1.2
		1
		0.7
	POORLY GRADED SAND WITH GRAVEL, fine to coarse grained, moist, dark brown	0.5
		0.3

(Continued Next Page)

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BORING B91

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	POORLY GRADED SAND WITH GRAVEL, fine to coarse grained, moist, dark brown *(continued)*	0.1
		0.1
		0.1
		0.1
	POORLY GRADED SAND WITH GRAVEL, and rock fragments, fine to coarse grained, moist, dark brown	0.1
12.5		0.1
		0.1
		0.1
		0.1
	Becomes wet	0.1
15.0	Bottom of borehole at 15.0 feet.	
17.5		
20.0		

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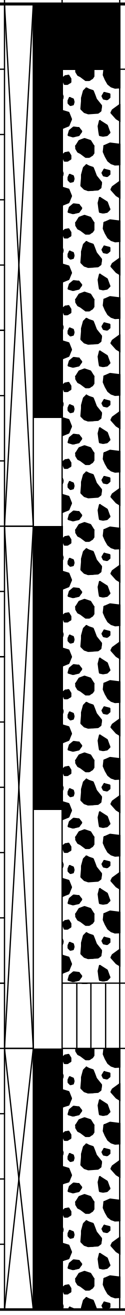
BORING B92

PAGE 1 OF 2

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/12/14 **COMPLETED** 8/12/14
NORTHING 753791 ft **EASTING** 762120 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm, 7.1 ppm deeper than 4 ft



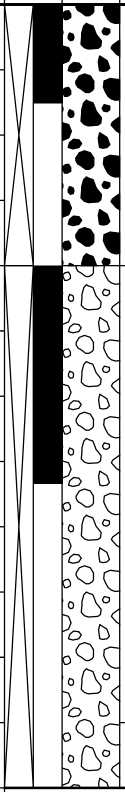
DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	0
	Very dense, WELL GRADED GRAVEL WITH SAND, fine to coarse grained, moist, dark brown, 2" black layer at 6 ft	0
		0
		0
		3.8
2.5		5.2
		23.5
		2.6
		8.6
		8.8
5.0		8.7
		9.2
		9
		8.1
		7.8
7.5	SANDY SILT, brown	7.8
	WELL GRADED GRAVEL WITH SAND, fine to coarse grained, dark brown	8.8
		8.7
		9.2
		9

(Continued Next Page)

BORING B92

PAGE 2 OF 2

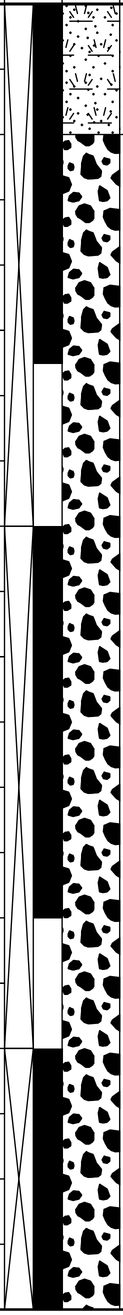
CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	WELL GRADED GRAVEL WITH SAND, fine to coarse grained, dark brown *(continued)*	8.8
		8.9
		9.2
		9.2
	Very dense, POORLY GRADED GRAVEL, moist, brown	8.2
12.5		
		8.8
		8.1
15.0	Becomes wet	8.2
	Very dense, POORLY GRADED GRAVEL, saturated, brown	
	Bottom of borehole at 16.0 feet.	
17.5		
20.0		

BORING B93

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/12/14 **COMPLETED** 8/12/14
NORTHING 753765 ft **EASTING** 762049 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 2.3 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	4.8
		4.9
	Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown	5
		5.8
		5
2.5		4.3
		5.2
		5.2
		7
		7.6
5.0		7.5
		6.5
		6.6
		6.8
		6.9
7.5		5.6
		5.7
		5.8
		6.1
		6.1

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BORING B93

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown *(continued)*	5
					5.6
					5.6
					6.1
12.5					
					6
				Very dense, WELL GRADED GRAVEL WITH SAND, trace silt, fine to coarse grained, moist, brown	6.4
15.0					6.1
				Becomes wet	
				Bottom of borehole at 16.0 feet.	
17.5					
20.0					

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BORING B94

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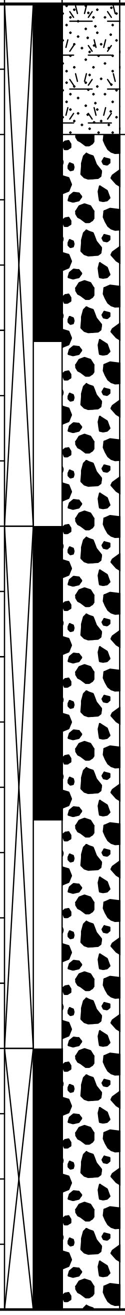
CLIENT Unisys		**PROJECT NAME** Former Sperry Remington North	
PROJECT NUMBER MN0832		**PROJECT LOCATION** Elmira, New York	
DATE STARTED 8/12/14	**COMPLETED** 8/12/14	**NORTHING** 753769 ft	**EASTING** 762084 ft
DRILLER Zebra Environmental		**GROUND ELEVATION** ---	**BORING DIAMETER** 2 in
DRILLING METHOD Direct Push		**TOP OF CASING ELEVATION** ---	
SAMPLING METHOD 2" x 5' Macrocore		**UTILITY CONTRACTOR** New York Leak Detection	
RIG TYPE Geoprobe		**LOGGED BY** M. Bauer	**CHECKED BY** A. Gray
NOTES PID: ambient air 5.7 ppm			



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	5.8
		6
	Very dense, WELL GRADED GRAVEL WITH SAND, fine grained, moist, brown	6.1
		6.1
		6.3
2.5		6.4
		6.5
		6.5
		6.6
		6.6
5.0		6.6
		6.6
		7.3
		6.8
		6.6
7.5		6.6
		6
		6.1
		6
		6.2

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BORING B94

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CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				Very dense, WELL GRADED GRAVEL WITH SAND, fine grained, moist, brown *(continued)*	6
					6.1
					6.2
					6.2
					6
12.5					6.1
					6.4
					6
					6.1
15.0					6.2
				Becomes wet	
				Bottom of borehole at 16.0 feet.	
17.5					
20.0					

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BORING B95

PAGE 1 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/12/14 **COMPLETED** 8/12/14

NORTHING 753746 ft **EASTING** 762018 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

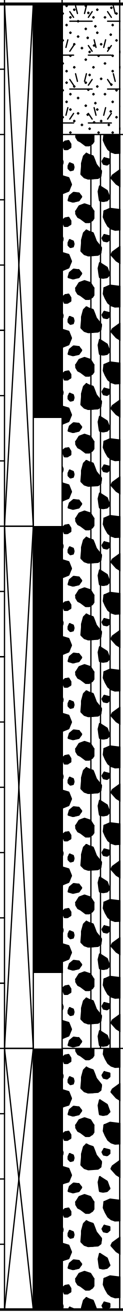
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY M. Bauer **CHECKED BY** A. Gray

NOTES PID: ambient air 5.6 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	6.1
		6
	Dense, WELL GRADED GRAVEL WITH SILT, fine to medium grained, moist, brown	6.4
		6.2
		6.2
2.5		6.2
		6.2
		5.2
		6.2
		5.8
5.0		6
		6.1
		6.4
		6.3
		6.3
7.5		6.5
	Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained	5.8
		5.8
		5.8
		5.8

(Continued Next Page)

BORING B95

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained *(continued)*	5.8
					5.8
					5.8
					6.1
					6.1
12.5					6
					5.8
					5.6
					5.7
				Becomes wet	6
15.0					

Bottom of borehole at 16.0 feet.

17.5

20.0

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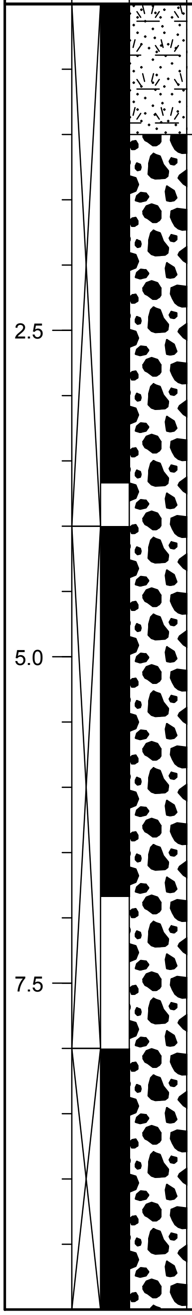
BORING B96

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/12/14	**COMPLETED**	8/12/14
NORTHING	753722 ft	**EASTING**	762005 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in		
DRILLING METHOD	Direct Push	**TOP OF CASING ELEVATION**	---
SAMPLING METHOD	2" x 5' Macrocore	**UTILITY CONTRACTOR**	New York Leak Detection
RIG TYPE	Geoprobe	**LOGGED BY**	M. Bauer
CHECKED BY	A. Gray		
NOTES	PID: ambient air 5.7 ppm		



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	9.7
		5.2
	Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, dark brown	6.6
		5.7
		6
2.5		5.9
		5.8
		5.8
		19
		9.8
5.0		6.3
		6.3
		6.4
		6.3
		6.3
7.5		6.3
		11.6
		8.5
		13.1
		9.6

(Continued Next Page)

BORING B96

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, dark brown *(continued)*	8.2
		7.6
		7.6
		7.6
		14.7
12.5		
		9.5
		7.5
15.0	Becomes wet	7.4

Bottom of borehole at 16.0 feet.

17.5

20.0

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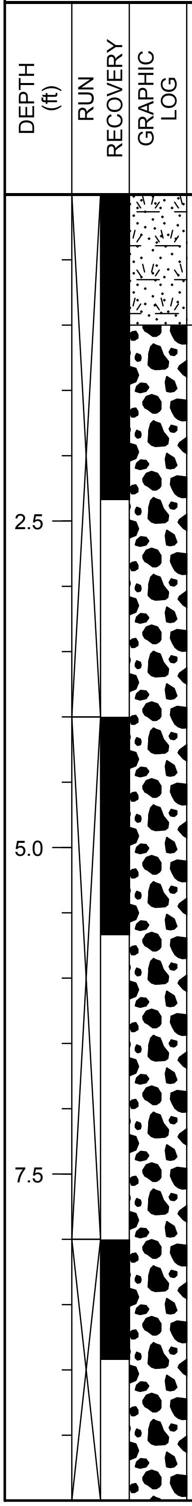
BORING B97

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	8/13/14	**COMPLETED**	8/13/14
NORTHING	753658 ft	**EASTING**	762074 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 5' Macrocore
UTILITY CONTRACTOR	New York Leak Detection	**RIG TYPE**	Geoprobe
LOGGED BY	M. Bauer	**CHECKED BY**	A. Gray

NOTES PID: ambient air 0.0 ppm



MATERIAL DESCRIPTION	PID (ppm)
Topsoil	0.4
	0.3
Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown	0.1
	0
	0
	0
	0
	0
	0.1
	0
	0
	0
	0
	0

0.0
2.5
5.0
7.5

(Continued Next Page)

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0			Dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown *(continued)*	0
				0
				0
12.5				0
				0
15.0				0
			Becomes wet	0

Bottom of borehole at 16.0 feet.

17.5

20.0

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BORING B98

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 8/13/14 **COMPLETED** 8/13/14

NORTHING 753480 ft **EASTING** 762235 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

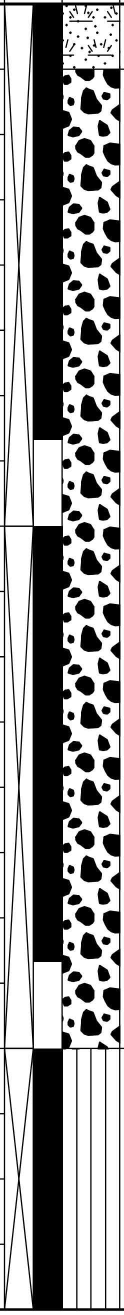
SAMPLING METHOD 2" x 5' Macrocore

UTILITY CONTRACTOR New York Leak Detection

RIG TYPE Geoprobe

LOGGED BY M. Bauer **CHECKED BY** A. Gray

NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	2.5
	WELL GRADED GRAVEL WITH SILT AND SAND, fill material, some bricks	31.1
		10.1
		1.2
		1.2
2.5		1.2
		1.3
		1.2
		0
		0
5.0		0
		0
		0
		0
		0
7.5	Black staining at 7.5 ft	0
	Dense, GRAVELLY SILT, fine to medium grained, moist, brown	0
		0
		0
		0

(Continued Next Page)

BORING B98

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York

DEPTH (ft)	RUN	RECOVERY	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0				Dense, GRAVELLY SILT, fine to medium grained, moist, brown *(continued)*	0
					0
					0
					0
					1
12.5					0.9
					0.9
					0.4
					0.4
					0.4
15.0					0.4
					0.4

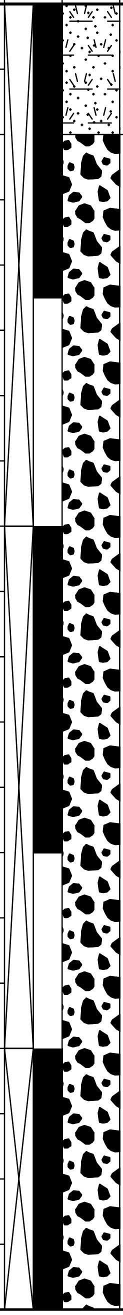
Bottom of borehole at 16.0 feet.

17.5

20.0

BORING B99

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 8/13/14 **COMPLETED** 8/13/14
NORTHING 754027 ft **EASTING** 762494 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR New York Leak Detection
RIG TYPE Geoprobe
LOGGED BY M. Bauer **CHECKED BY** A. Gray
NOTES PID: ambient air 0.0 ppm



DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
0.0	Topsoil	0
		0
	Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown	0
		0
		0
2.5		0
		0
		0.2
		0
		0
5.0		0
		0
		0
		0
		0
7.5		0
		0
		0
		0
		0

(Continued Next Page)

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BORING B99

PAGE 2 OF 2

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DEPTH (ft)	MATERIAL DESCRIPTION	PID (ppm)
10.0	Very dense, WELL GRADED GRAVEL WITH SAND, some silt, fine to coarse grained, moist, brown *(continued)*	0
		0
		0
		0
		0
12.5		0
		0
		0
	Becomes wet	0
		0
15.0		0
		0

Bottom of borehole at 16.0 feet.

17.5

20.0

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BORING FB10A

PAGE 1 OF 1

CLIENT Unisys
PROJECT NAME Former Sperry Remington North
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 7/15/15 **COMPLETED** 7/15/15
NORTHING 754465.0856 ft **EASTING** 762319.6687 ft
DRILLER Zebra Environmental
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 2' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe
LOGGED BY A. Ranna **CHECKED BY** J. Thompson
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, moist, brown	
		SSHS-FB10A-SUB-0-2		SAND, some fine to coarse gravel, moist, brown	0.1
				SAND, some rock fragments, dry, white	
				SAND, some fine to coarse gravel, moist, black, few brick	
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

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BORING FB10-AA

PAGE 1 OF 1

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/28/15 **COMPLETED** 7/28/15

NORTHING 754465.085598 ft **EASTING** 762319.668722 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES Refusal at 4.5', shifted 1' to the NE from original location, Refusal again at 4.5', All samples collected from new location

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0	■		▥	SILT, moist, brown	
	■	No sample	▒	SAND, some coarse gravel, trace silt, moist, brown, little brick	23.5
	□			No Recovery	
	■		▥	SILT, moist, brown	
2.5	■	SSHS-FB10Aa-SUB- 2-4	▒	SAND, some fine to coarse gravel, few black shiny material (ash), moist, brown	0.6
	■	SSHS-FB10Aa-SUB-4-4.5	▒	SAND, moist, brown with black	0.7
	□			No Recovery	

Refusal at 4.5 feet.
Bottom of borehole at 4.5 feet.

5.0

7.5

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BORING FB6-AA

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/15/15	**COMPLETED**	7/15/15
NORTHING	754421.0768 ft	**EASTING**	762170.7188 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Moist, brown	
		SSHS-FB6AA-SUB-0-2		Some fine to coarse gravel, moist, black	0
				No Recovery	

Bottom of borehole at 2.0 feet.

2.5

5.0

7.5

BORING FB7-BA

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/15/15	**COMPLETED**	7/15/15
NORTHING	754403.8188 ft	**EASTING**	762298.5527 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Direct Push
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Geoprobe
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		No sample		SILT, SILT, moist, brown	
				SAND, some fine to coarse gravel, few silt, moist, brown	0.1
2.5		No sample		Moist Brick red material	0.1
				SAND, some coarse gravel, moist, brown	
				GRAVEL, some black shiny material (ash), moist	
				SAND, some coarse gravel, moist, yellow	
				No Recovery	
				SILTY SAND, SAND, moist, brown	
5.0		SSHS-FB7-BA-4-6		SAND, few fine to coarse gravel, little black shiny material (ash), moist, yellow, little red color material	0.1
				SAND, some coarse gravel, dry, yellow	
		SSHS-FB7-BA-6-8		SAND, some silt, few fine to coarse sand, moist, brown	2.7
				SAND, some fine gravel, few silt, moist, yellow	
7.5				No Recovery	
				SAND, some fine gravel, few silt, moist, yellow	
		SSHS-FB7-BA-8-10		SAND, some fine to coarse gravel, moist, brown	1.6
				No Recovery	

Bottom of borehole at 10.0 feet.

PAULS BH / TP / WELL - DEFAULT.GDT - 2/4/16 00:22 - P:\GINT\PROJECTS\ELMIRA - MN0832.GPJ

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BORING FB7-DA

PAGE 1 OF 1

CLIENT Unisys

PROJECT NAME Former Sperry Remington North

PROJECT NUMBER MN0832

PROJECT LOCATION Elmira, New York

DATE STARTED 7/15/15 **COMPLETED** 7/15/15

NORTHING 754411.9111 ft **EASTING** 762270.9599 ft

DRILLER Zebra Environmental

GROUND ELEVATION --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push

TOP OF CASING ELEVATION ---

SAMPLING METHOD 2" x 2' Macrocore

UTILITY CONTRACTOR ---

RIG TYPE Geoprobe

LOGGED BY A. Ranna **CHECKED BY** J. Thompson

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, SILT, moist, brown	
		FB7-DA-SUB- 0-2		SILTY SAND, SAND, some fine to coarse gravel, moist, brown, brick pieces	2
2.5		FB7-DA-SUB- 2-4			2
				No Recovery	
				SILTY SAND, SAND, some fine gravel, moist, brown	
5.0		FB7-DA-SUB- 4-6		POORLY GRADED SAND WITH SILT AND GRAVEL, SAND, some fine to coarse gravel, few silt, moist, brown with black	2.4
				POORLY GRADED SAND WITH GRAVEL, SAND, some fine gravel, moist, yellow with red	
		FB7-DA-SUB- 6-8		SILTY SAND, moist, dark brown	5.2
7.5				No Recovery	
		FB7-DA-SUB- 8-10		SANDY SILT, some fine to coarse gravel, moist, brown	2.6
				No Recovery	

Bottom of borehole at 10.0 feet.

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BORING FB9-AA

PAGE 1 OF 1

CLIENT	Unisys	**PROJECT NAME**	Former Sperry Remington North
PROJECT NUMBER	MN0832	**PROJECT LOCATION**	Elmira, New York
DATE STARTED	7/16/15	**COMPLETED**	7/16/15
NORTHING	754370.1411 ft	**EASTING**	762154.5325 ft
DRILLER	Zebra Environmental	**GROUND ELEVATION**	---
BORING DIAMETER	2 in	**DRILLING METHOD**	Hollow Stem Auger
TOP OF CASING ELEVATION	---	**SAMPLING METHOD**	2" x 2' Macrocore
UTILITY CONTRACTOR	---	**RIG TYPE**	Hand Auger
LOGGED BY	A. Ranna	**CHECKED BY**	J. Thompson
NOTES			

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	
		SSHS-FB9-AA-SS		SILT, moist, brown	1.8	0.0
		SHS-FB9-AA-SUB-0.17-0.5		SILT, moist, brown	0.5	
				Refusal at 0.5 feet. Bottom of borehole at 0.5 feet.		
2.5						
5.0						
7.5						

APPENDIX D

HISTORIC WELL CONSTRUCTION LOGS

MATRIX
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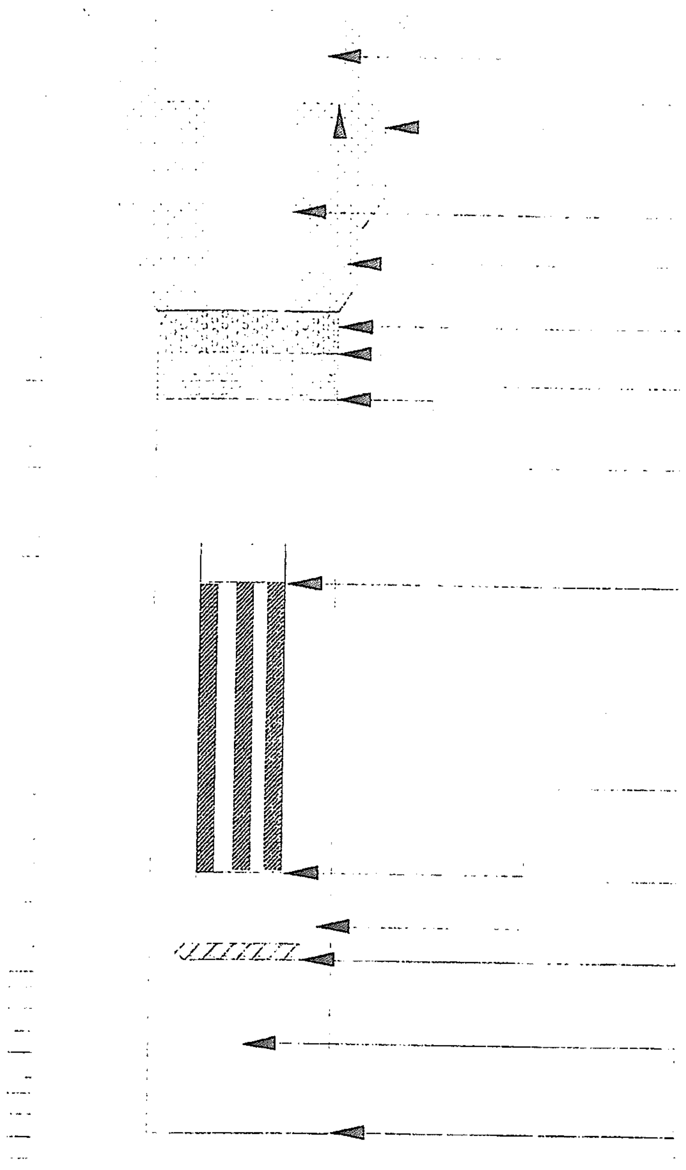
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION:	NYSDEC/Miller Pond	PROJECT No.	96020
CLIENT:	NYSDEC Region 8 - Scott Rodabaugh	WELL No.	MW1
DATE COMPLETED:	12/19/96	SUPERVISED BY:	Chris Treese



REFERENCE POINT
Elevation/Depth: 852.51

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 4" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 10-1/4"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 8.0'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 10.0'
FILTER PACK MATERIAL: Morie #1 sand

TOP OF SCREEN Elevation/Depth: 12.0'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 21.5'

BOTTOM OF FILTER PACK
Elevation/Depth: 22.0'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 22.0'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

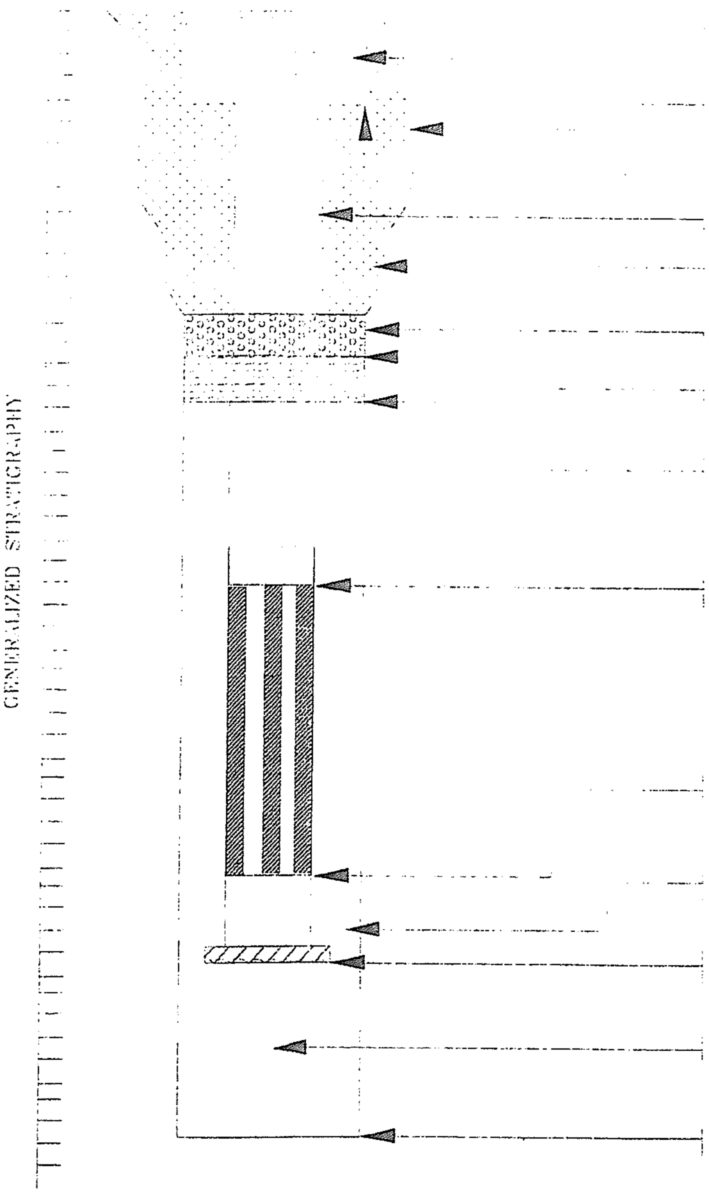
BOTTOM OF BOREHOLE
Elevation/Depth: 22.0'

NOTES

MATRIX
Environmental Technologies Inc.

WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW2
DATE COMPLETED: 12/19/96
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 852.48

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 6" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 12-1/4"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 10.0'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 12.0'
FILTER PACK MATERIAL: Morie #2 sand

TOP OF SCREEN Elevation/Depth: 15.0'
SCREEN SIZE/TYPE: .040 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 26.5'

BOTTOM OF FILTER PACK
Elevation/Depth: 27.0'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 25.0'

TYPE OF FILLER
BELOW PLUGGED BLANK: Morie #2 sand

BOTTOM OF BOREHOLE
Elevation/Depth: 27.0'

NOTES

MATRIX
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WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond

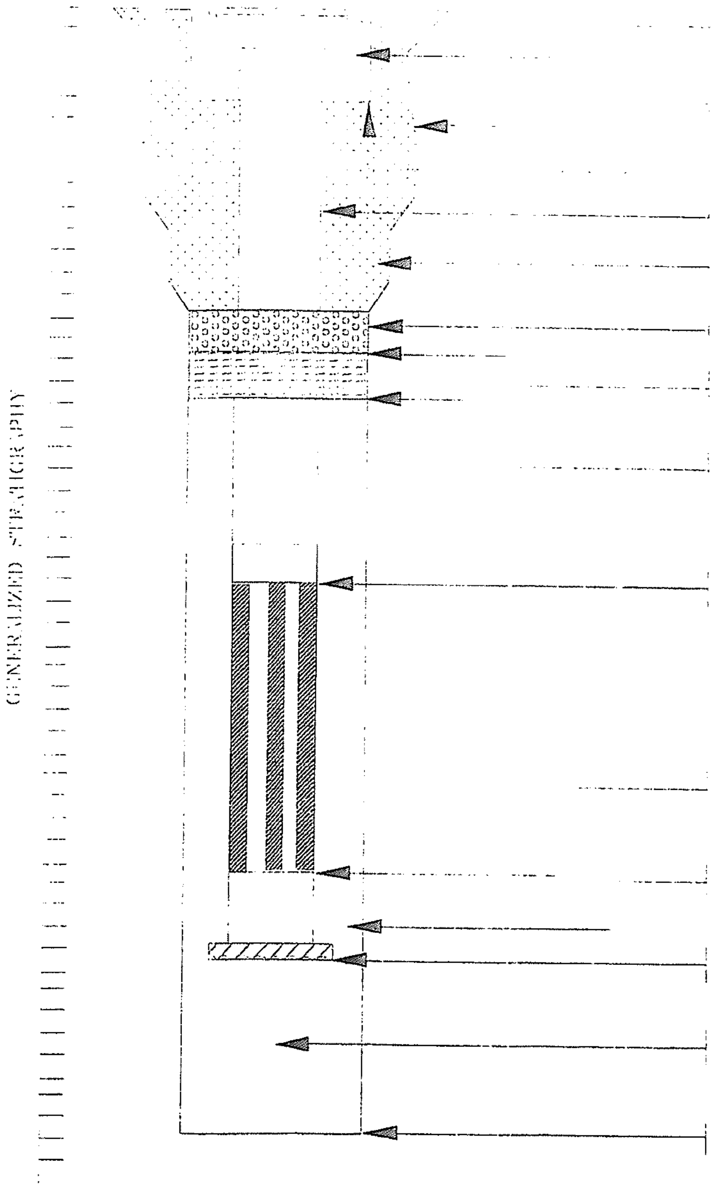
PROJECT No. 96020

CLIENT: NYSDEC Region 8 - Scott Rodabaugh

WELL No. MW3

DATE COMPLETED: 12/20/96

SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 852.49

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 4" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 10-1/4"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 8.0'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 10.0'
FILTER PACK MATERIAL: Morie #1 sand

TOP OF SCREEN Elevation/Depth: 12.0'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 21.5'

BOTTOM OF FILTER PACK
Elevation/Depth: 22.0'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 22.0'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 22.0'

NOTES

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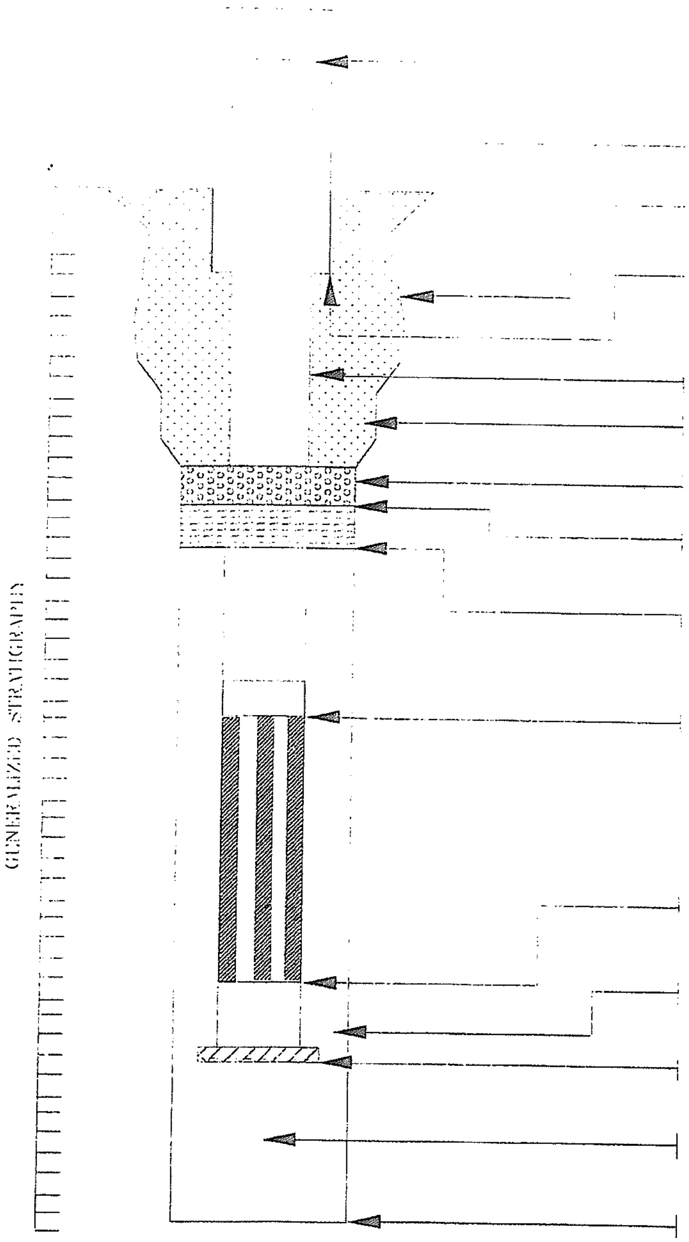
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW4
DATE COMPLETED: 4/10/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 845.96

SURFACE SEAL
Type/Depth: Concrete/2.00'

DEPTH OF SURFACE CASING: 2.00'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 6¼"

TYPE OF FILL: None

TOP OF SEAL Elevation/Depth: 2.15'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 3.15'
FILTER PACK MATERIAL: Morie #1 sand

TOP OF SCREEN Elevation/Depth: 3.65'
SCREEN SIZE/TYPE: 2" diameter .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 13.15'

BOTTOM OF FILTER PACK
Elevation/Depth: 13.65'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 13.65'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 13.65'

NOTES

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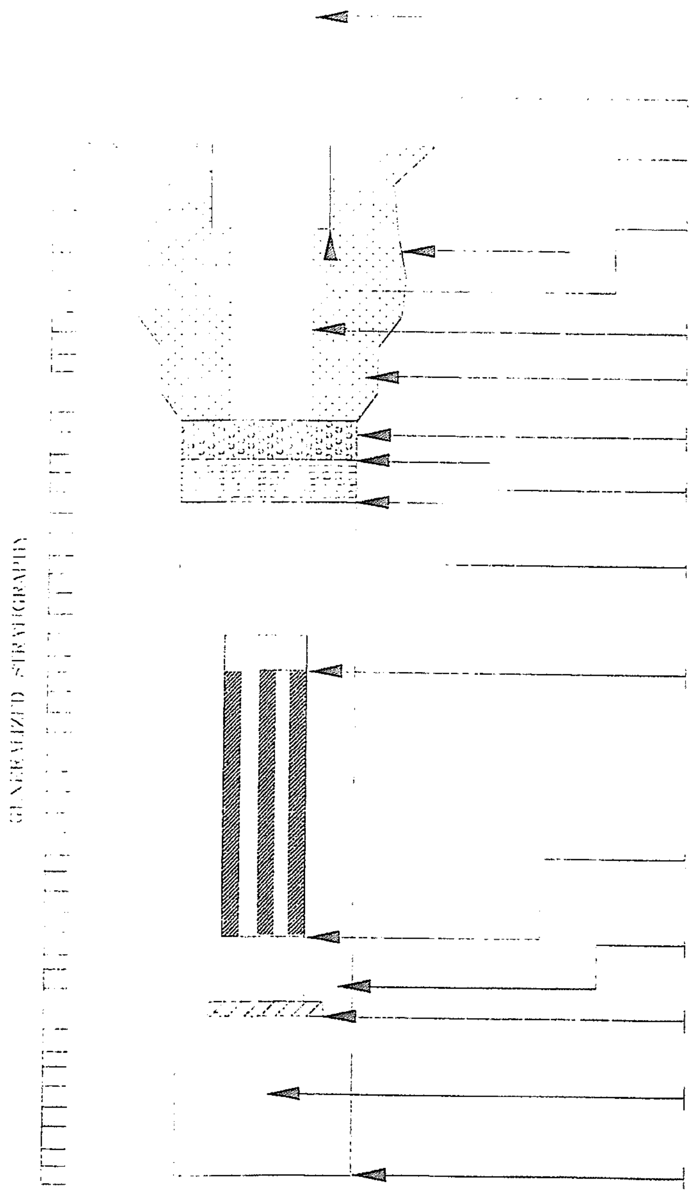
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW5
DATE COMPLETED: 4/9/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 842.20'

SURFACE SEAL
Type/Depth: Concrete/2.00'

DEPTH OF SURFACE CASING: 2.00'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 6¼"

TYPE OF FILL: None

TOP OF SEAL Elevation/Depth: 2.00'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 2.40'
FILTER PACK MATERIAL: Morie #1 sand

TOP OF SCREEN Elevation/Depth: 2.90'
SCREEN SIZE/TYPE: 2" diameter .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 12.40'

BOTTOM OF FILTER PACK
Elevation/Depth: 12.90'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 12.90'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 12.90'

NOTES

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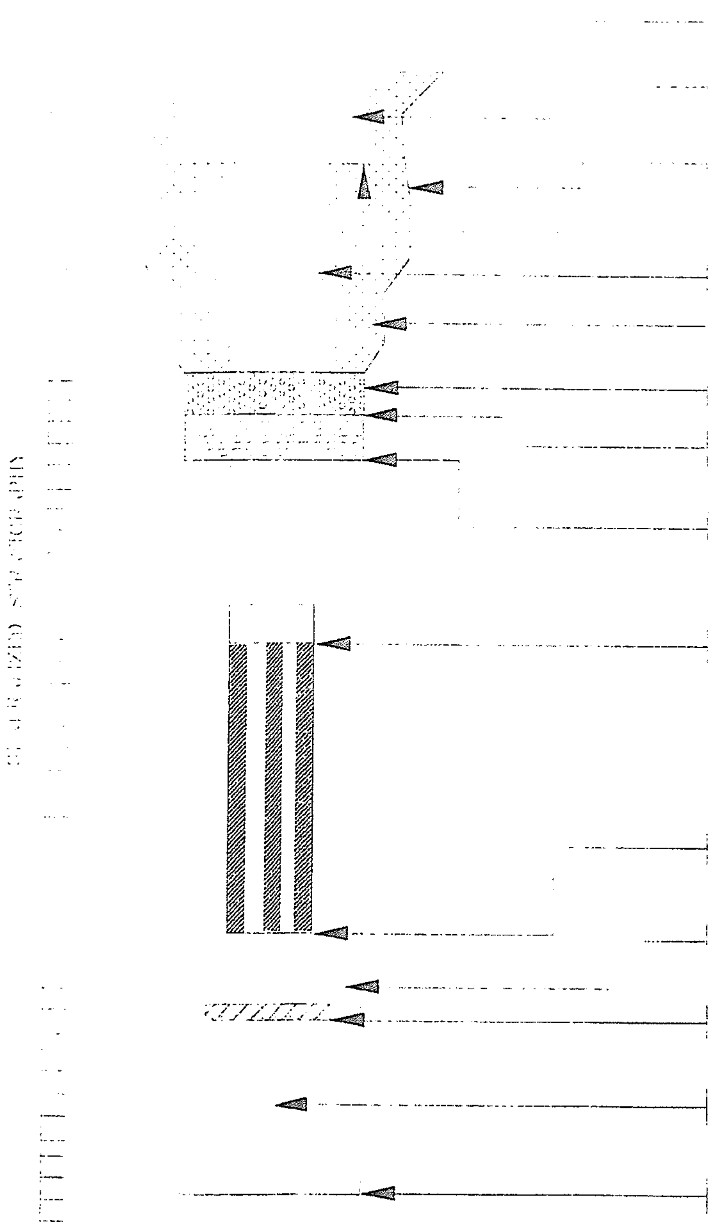
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW6
DATE COMPLETED: 11/9/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 849.68'

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: ¾" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: None

TOP OF SEAL Elevation/Depth: NA'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native

TOP OF SCREEN Elevation/Depth: 9.45'
SCREEN SIZE/TYPE: ¾" diam. .010 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 19.35'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.45'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.45'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 19.45'

NOTES

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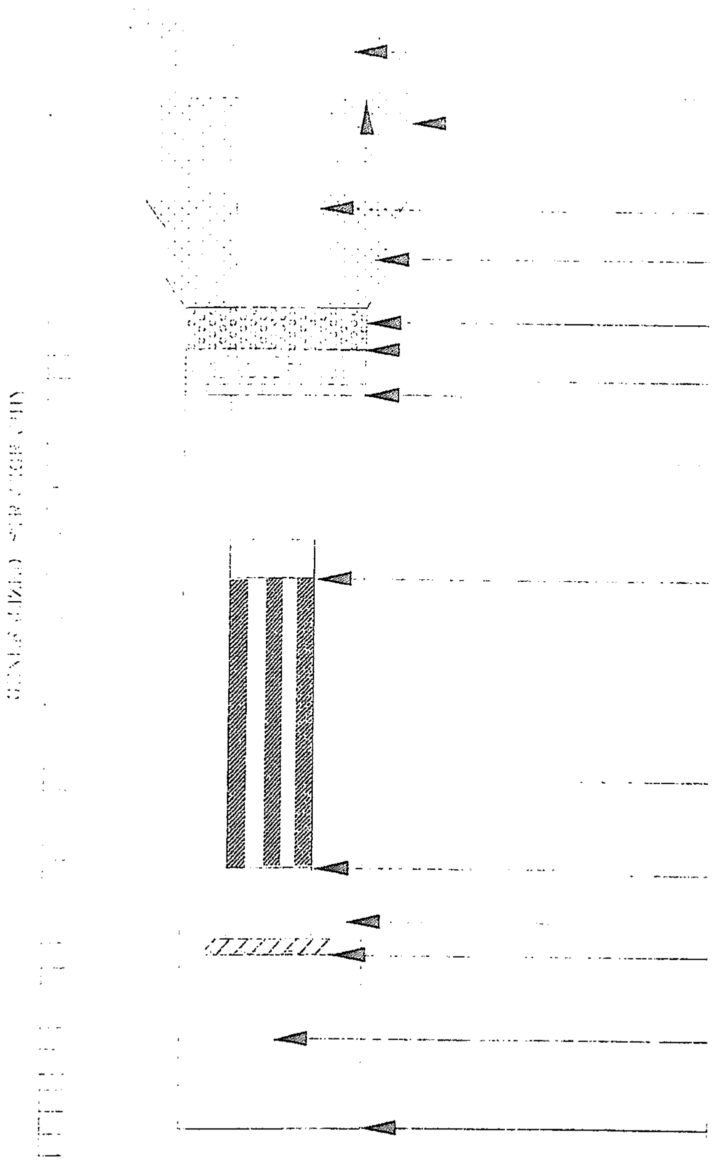
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW7
DATE COMPLETED: 12/9/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 852.21'

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: None

TOP OF SEAL Elevation/Depth: NA
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native

TOP OF SCREEN Elevation/Depth: 5.45'
SCREEN SIZE/TYPE: 3/4" diam. .010 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 15.45'

BOTTOM OF FILTER PACK
Elevation/Depth: 15.65'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 15.65'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 15.65"

NOTES

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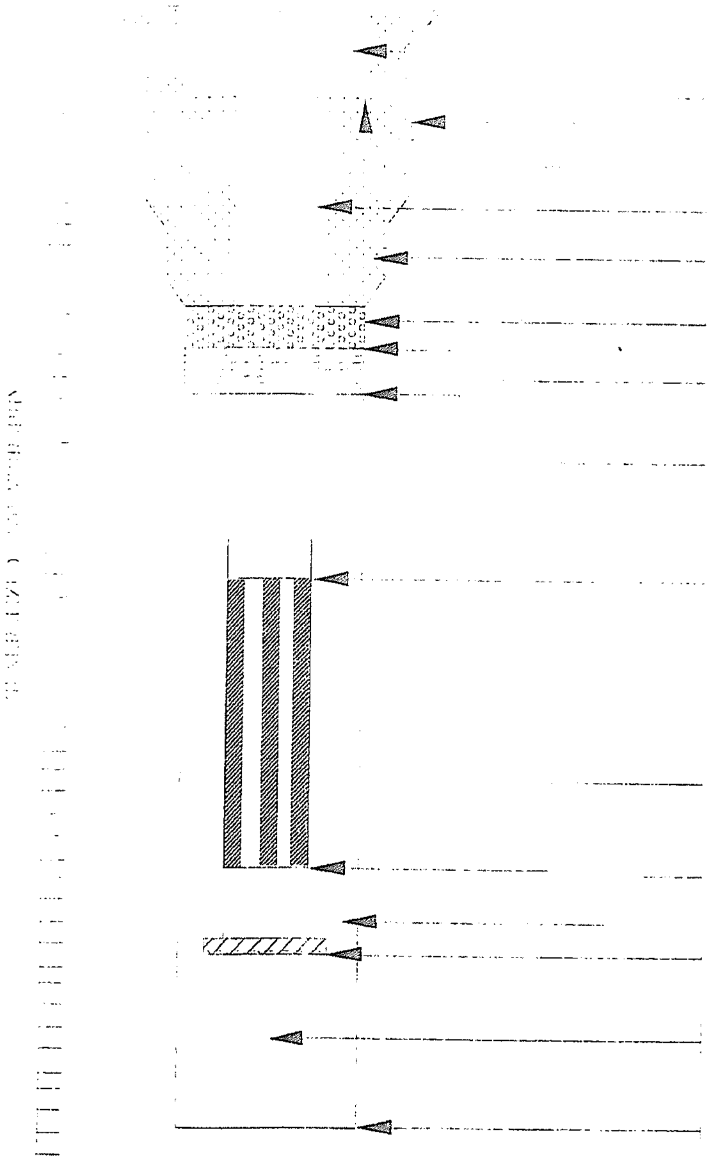
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION:	NYSDEC/Miller Pond	PROJECT No.	96-020
CLIENT:	NYSDEC Region 8 - Scott Rodabaugh	WELL No.	MW8
DATE COMPLETED:	12/8/97	SUPERVISED BY:	Chris Treese



REFERENCE POINT
Elevation/Depth: ____

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 5.30'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 6.30'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 7.30'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 16.80'

BOTTOM OF FILTER PACK
Elevation/Depth: 18.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 17.30'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 18.00'

NOTES

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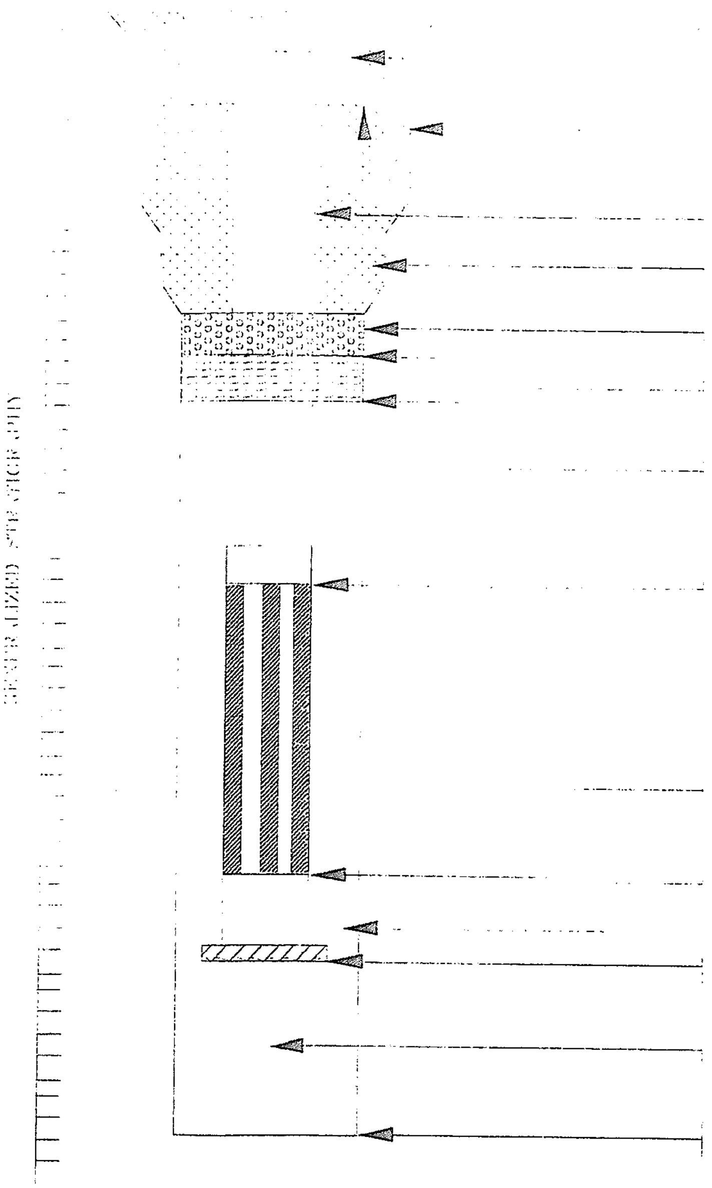
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW9
DATE COMPLETED: 12/9/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 853.66

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.00'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.00'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.00'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.00'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 19.00'

NOTES

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WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond

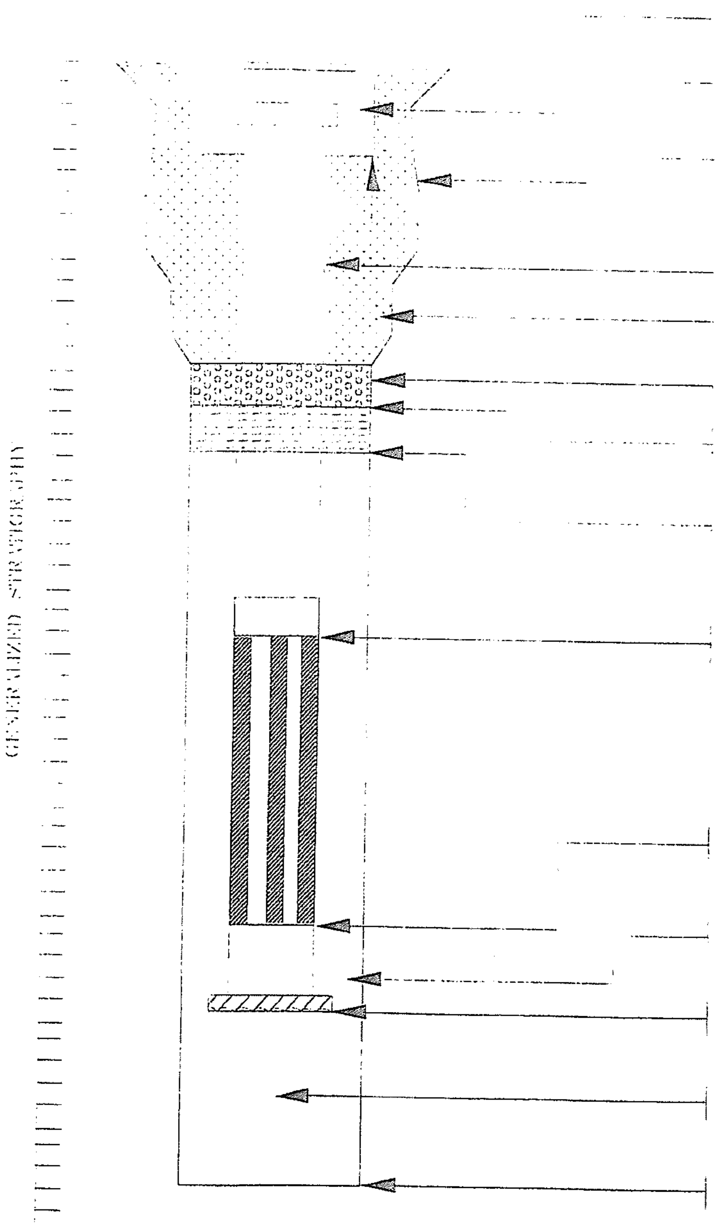
PROJECT No. 96020

CLIENT: NYSDEC Region 8 - Scott Rodabaugh

WELL No. MW10

DATE COMPLETED: 12/9/97

SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 853.04

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.00'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.00'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.00'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.00'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 19.00'

NOTES

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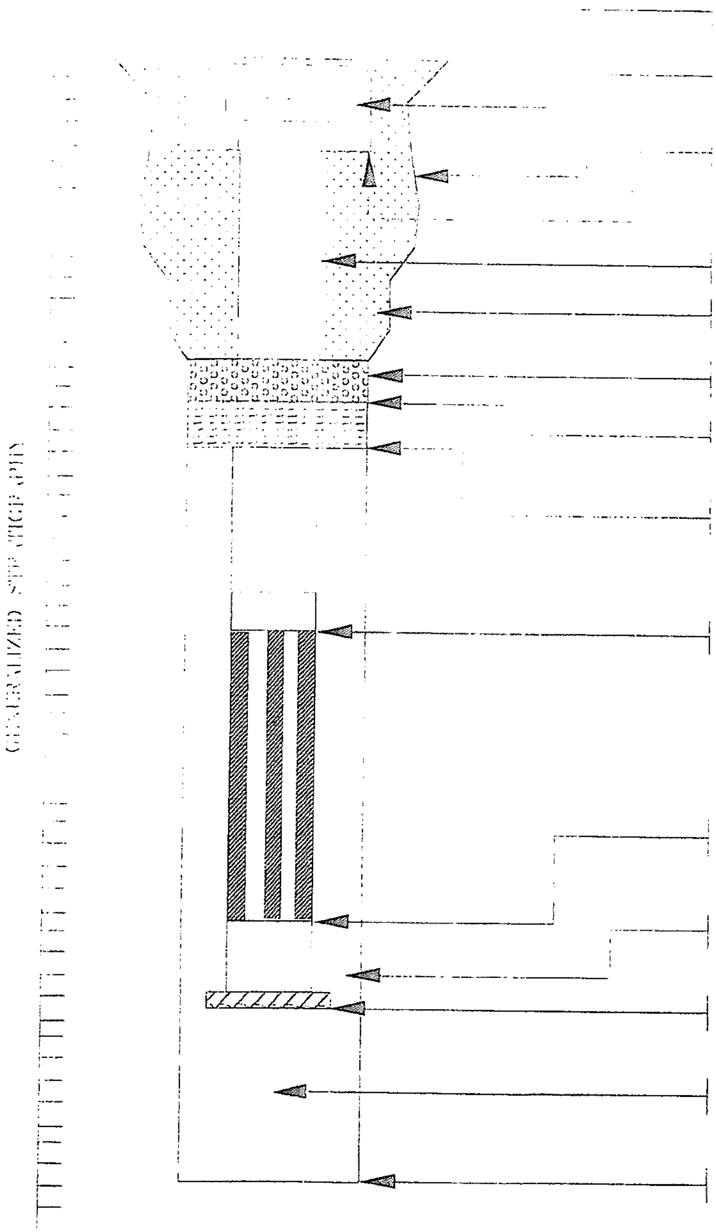
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW11
DATE COMPLETED: 12/10/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 854.53

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 19.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 20.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 20.00'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 20.00'

NOTES

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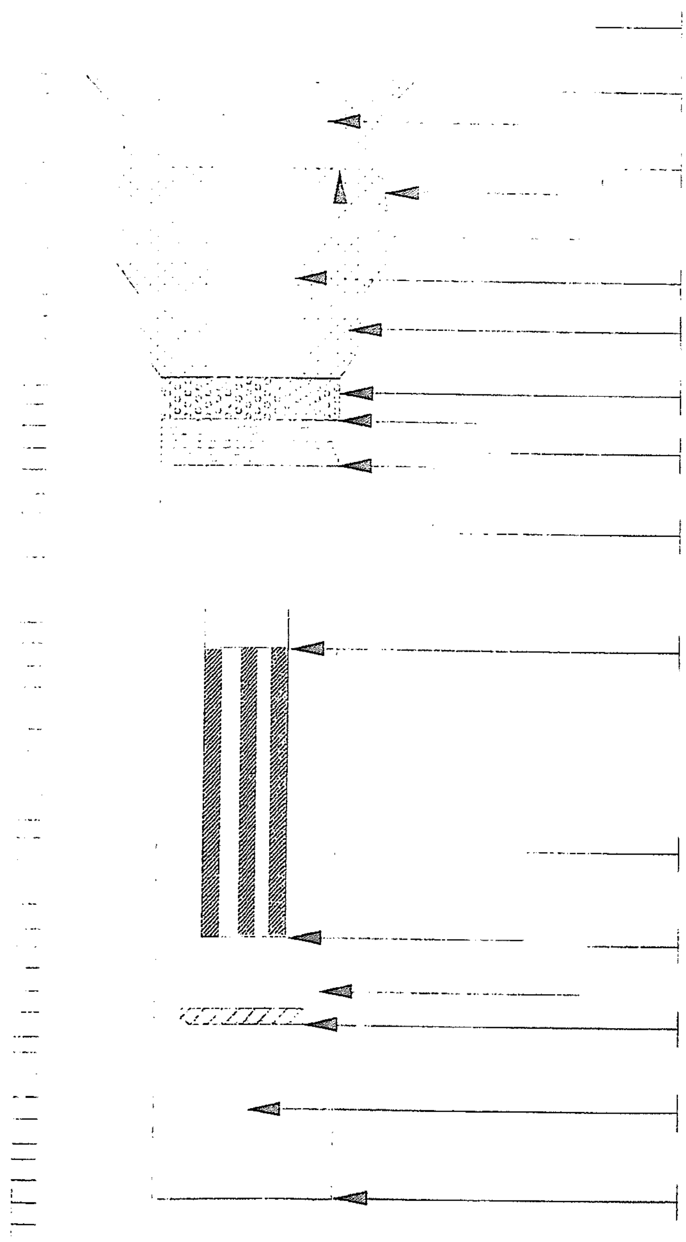
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW12
DATE COMPLETED: 12/10/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 854.47

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.85'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.35'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.35'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 19.35'

NOTES

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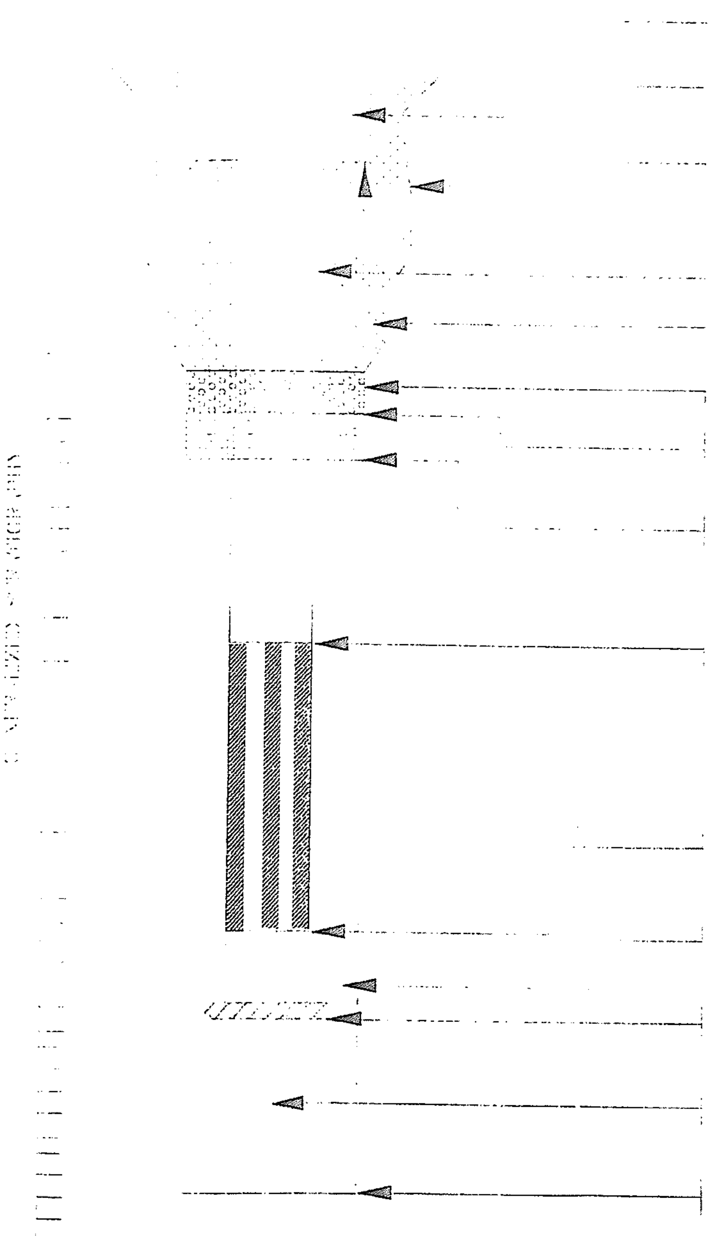
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW13
DATE COMPLETED: 12/10/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 854.60

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 20.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 21.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 21.00'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 21.00'

NOTES

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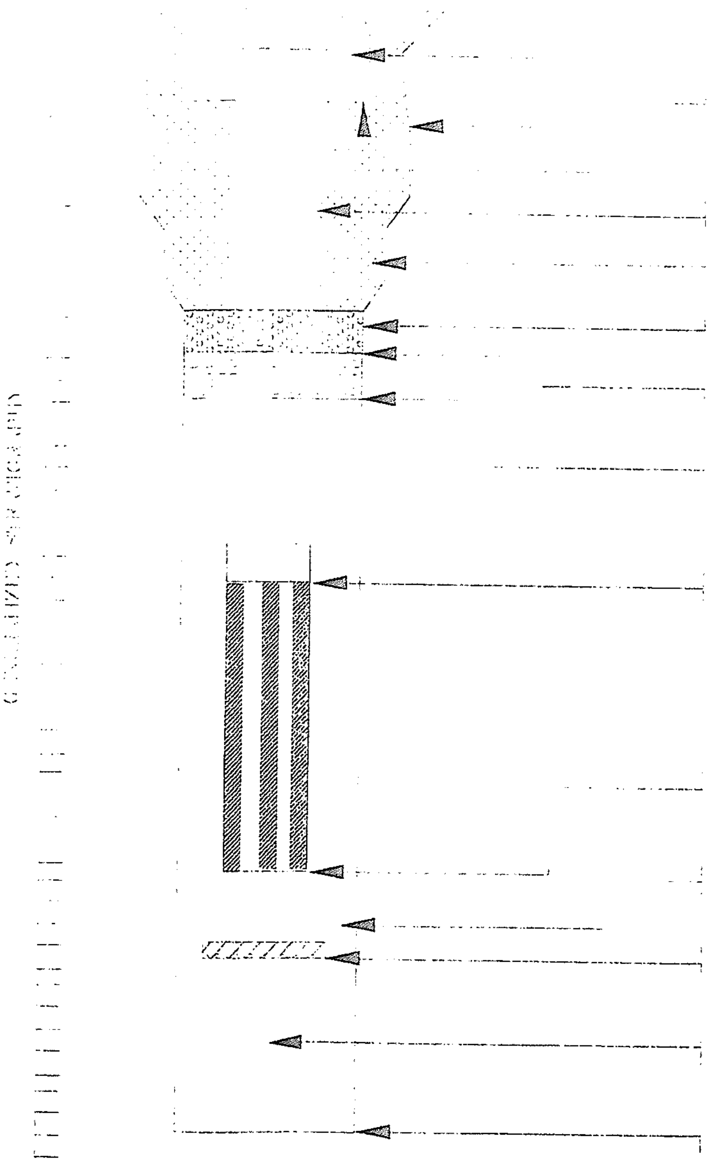
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW14
DATE COMPLETED: 12/11/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 853.73

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 20.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 21.50'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 21.50'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 21.50'

NOTES

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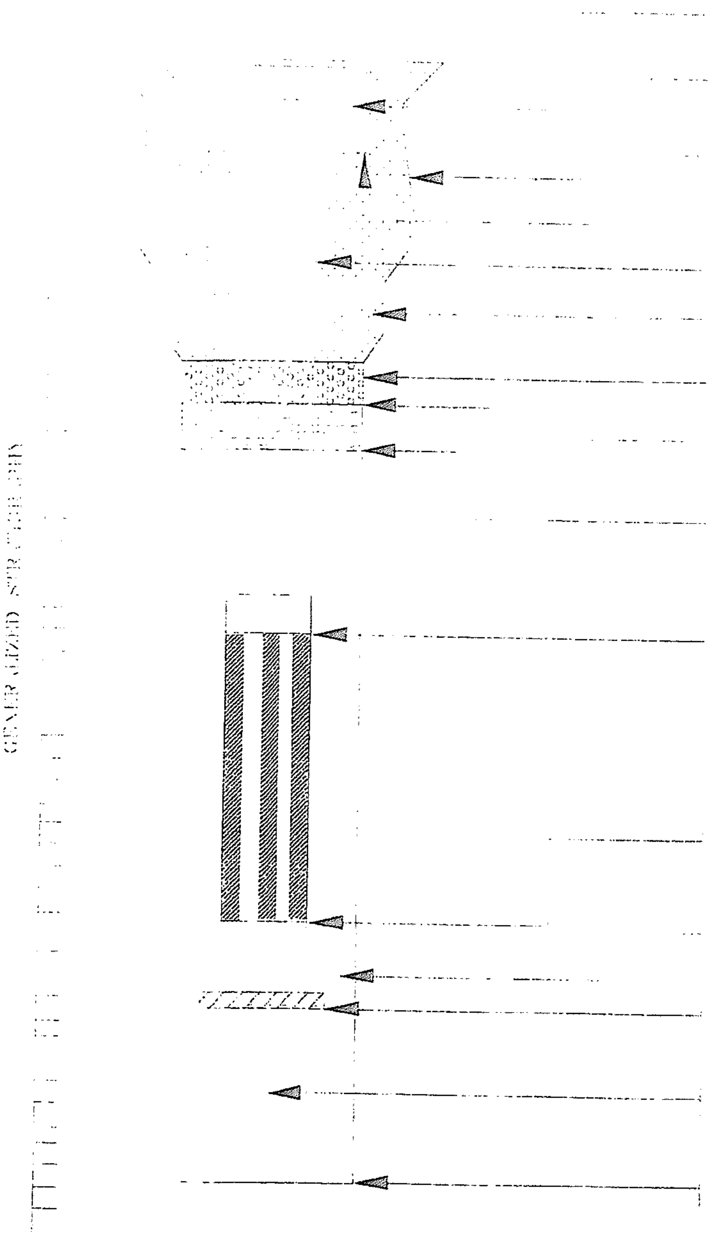
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW15
DATE COMPLETED: 12/11/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 855.19

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.60'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.10'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.10'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 19.10'

NOTES

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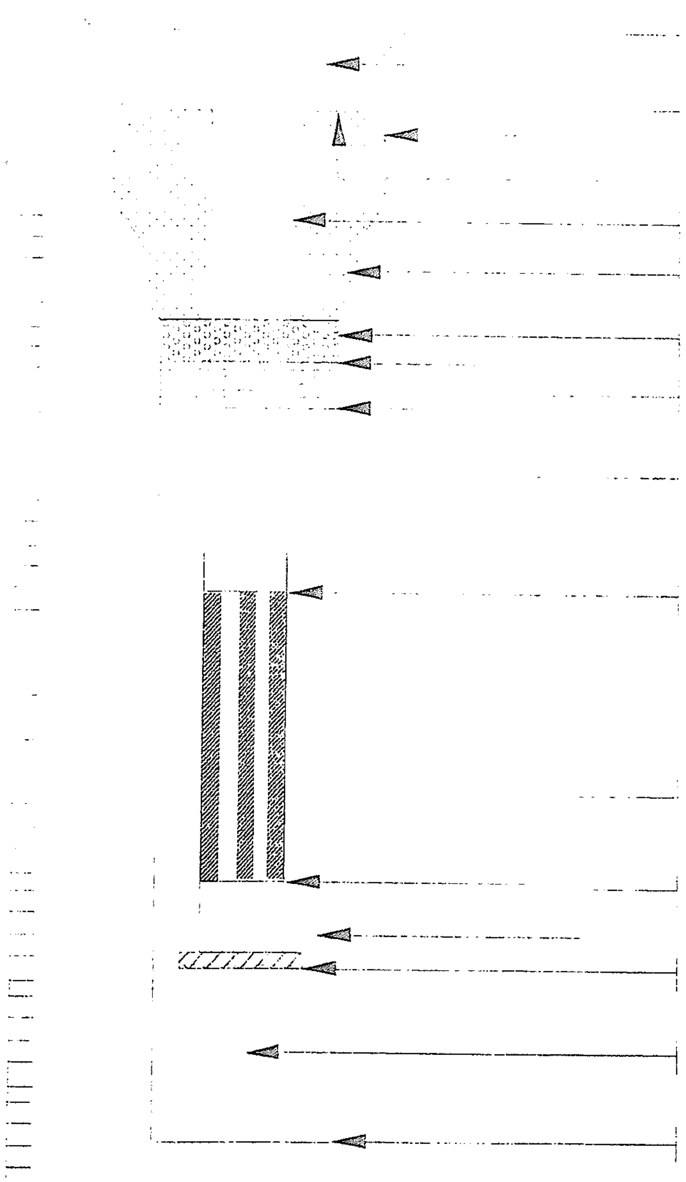
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW16
DATE COMPLETED: 12/11/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 854.37

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 8.25"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 20.00'

BOTTOM OF FILTER PACK
Elevation/Depth: 20.50'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 20.50'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 20.50'

NOTES

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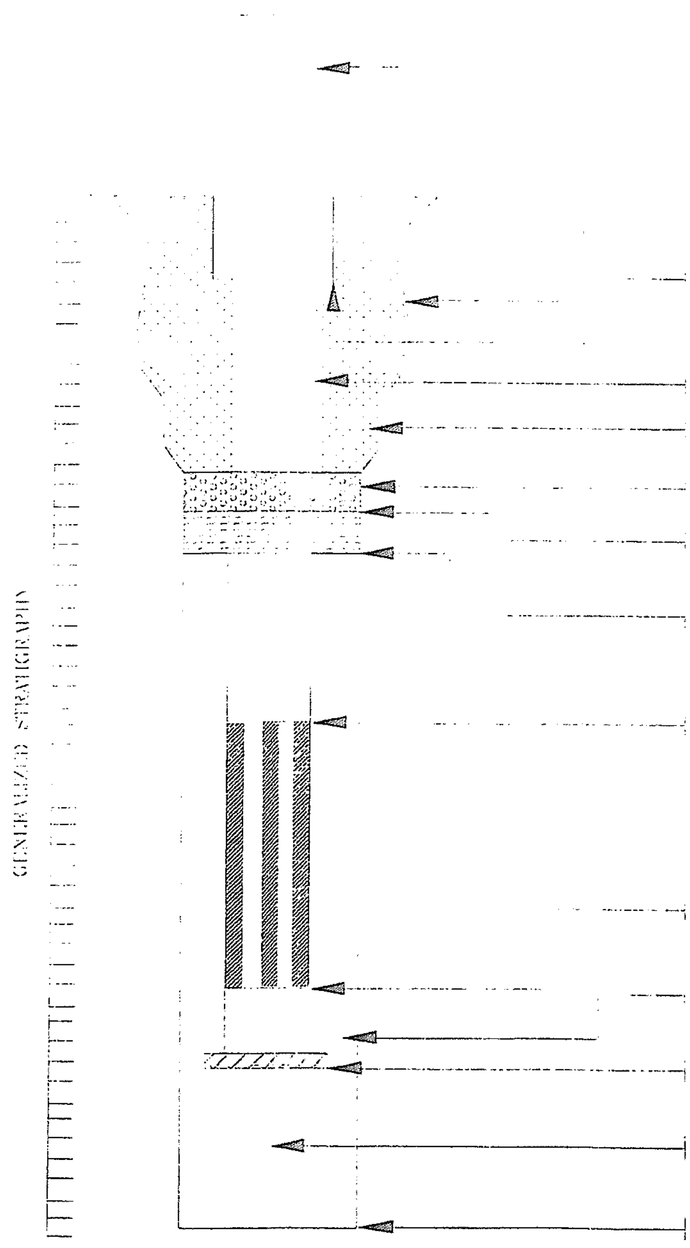
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW17
DATE COMPLETED: 12/12/97
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 852.27'

SURFACE SEAL
Type/Depth: Concrete/2.00'

DEPTH OF SURFACE CASING: 2.00'

RISER PIPE Size/Type: 2" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 6¼"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 10.80'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 11.80'
FILTER PACK MATERIAL: Morie #1 sand

TOP OF SCREEN Elevation/Depth: 12.80'
SCREEN SIZE/TYPE: 2" diameter .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 22.30'

BOTTOM OF FILTER PACK
Elevation/Depth: 22.80'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 22.80'

TYPE OF FILLER
BELOW PLUGGED BLANK: None

BOTTOM OF BOREHOLE
Elevation/Depth: 22.80'

NOTES

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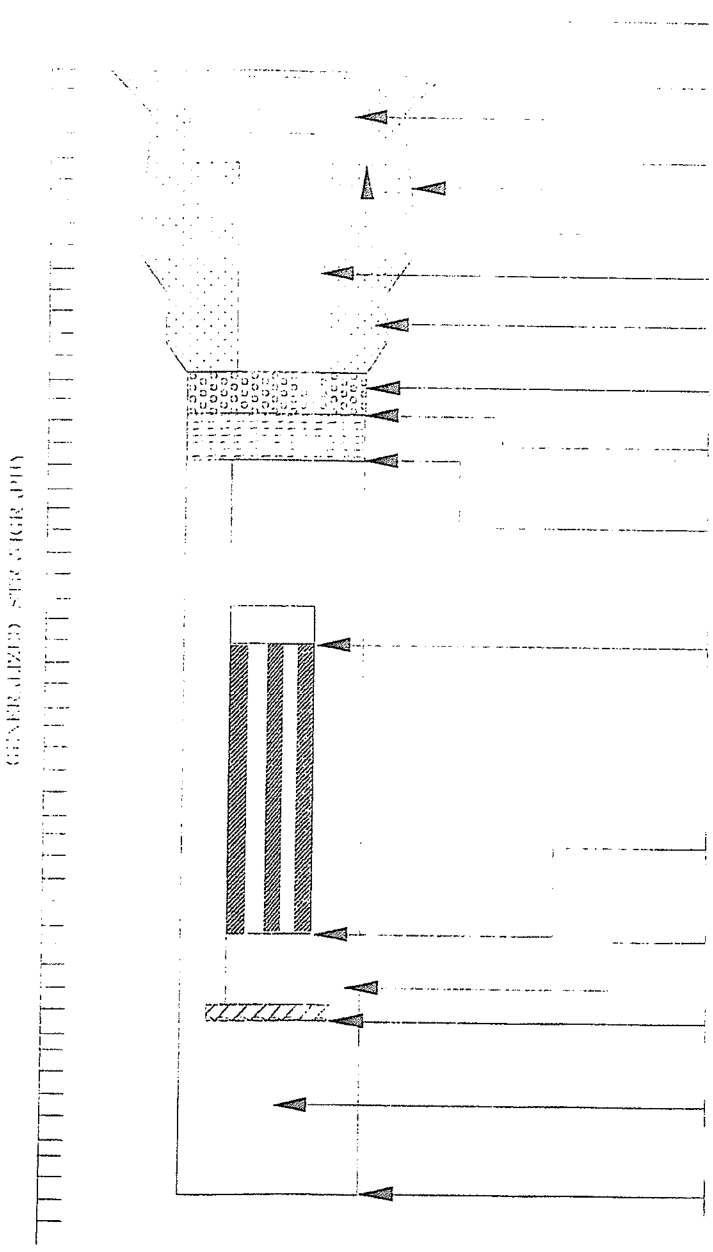
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW18
DATE COMPLETED: 7/7/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 851.37

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 14.30'

BOTTOM OF FILTER PACK
Elevation/Depth: 14.80'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 14.80'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 14.80'

NOTES

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WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond

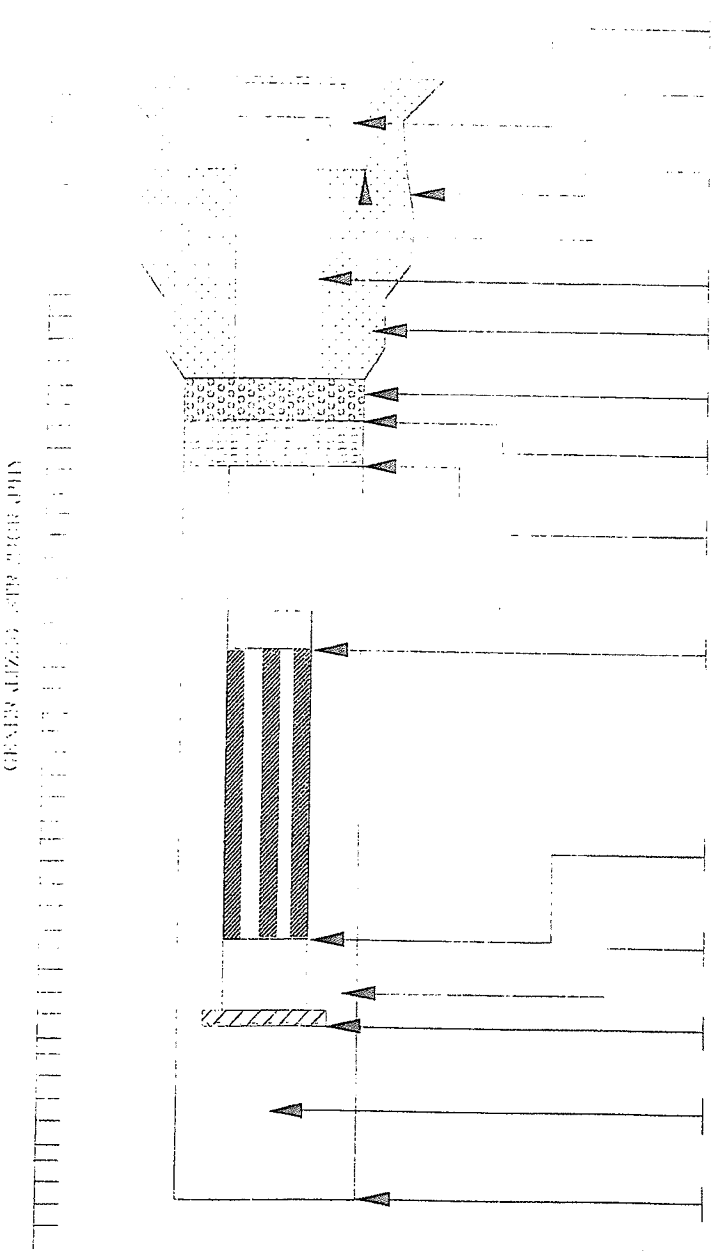
PROJECT No. 96020

CLIENT: NYSDEC Region 8 - Scott Rodabaugh

WELL No. MW19

DATE COMPLETED: 7/7/98

SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 851.30

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Drill cuttings

TOP OF SEAL Elevation/Depth: 7.50'
TYPE OF SEAL: Bentonite

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: #1 Sand

TOP OF SCREEN Elevation/Depth: 9.50'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 20.15'

BOTTOM OF FILTER PACK
Elevation/Depth: 20.65'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 20.65'

TYPE OF FILLER
BELOW PLUGGED BLANK: #1 Sand

BOTTOM OF BOREHOLE
Elevation/Depth: 20.65'

NOTES

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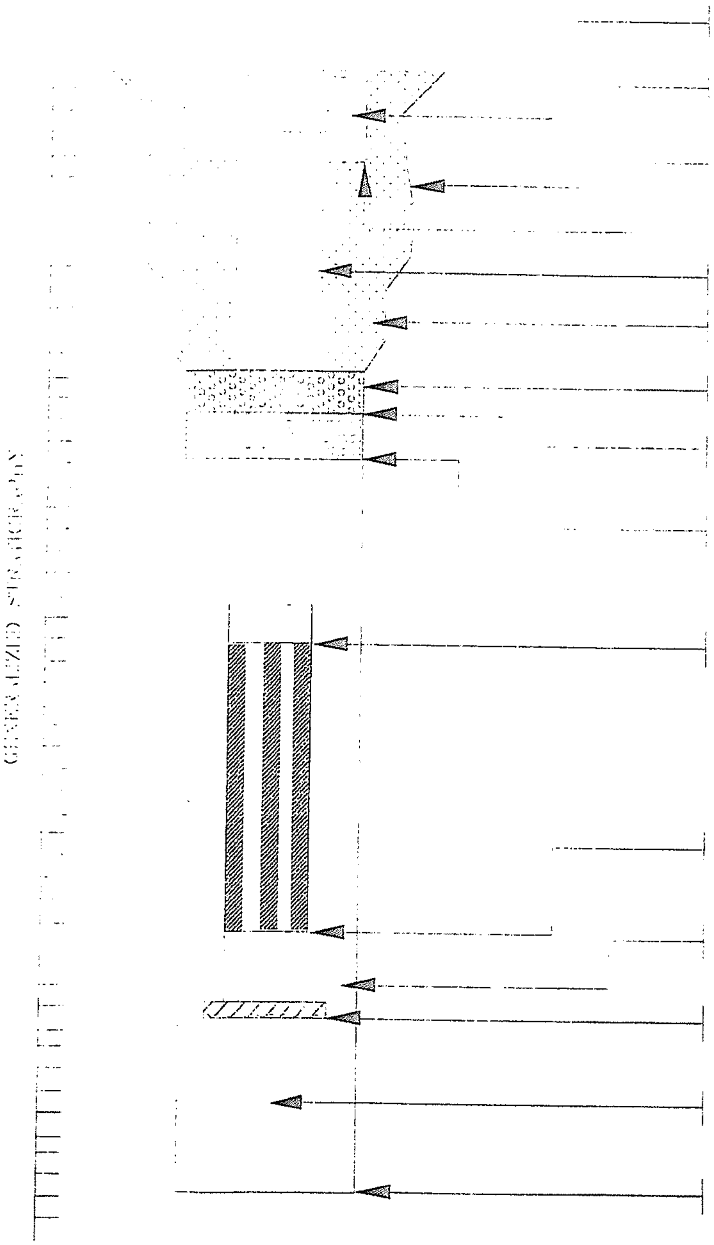
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION:	NYSDEC/Miller Pond	PROJECT No.	96020
CLIENT:	NYSDEC Region 8 - Scott Rodabaugh	WELL No.	MW20
DATE COMPLETED:	7/8/98	SUPERVISED BY:	Chris Treese



REFERENCE POINT
Elevation/Depth: 852.00

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 80 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 8.50'
TYPE OF SEAL: Native soil

TOP OF FILTER PACK Elevation/Depth: 8.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 8.50'
SCREEN SIZE/TYPE: .020 slot SCH 80 PVC

BOTTOM OF SCREEN Elevation/Depth: 19.20'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.70'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.70'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 19.70'

NOTES

MATRIX
Environmental Technologies Inc.

WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond

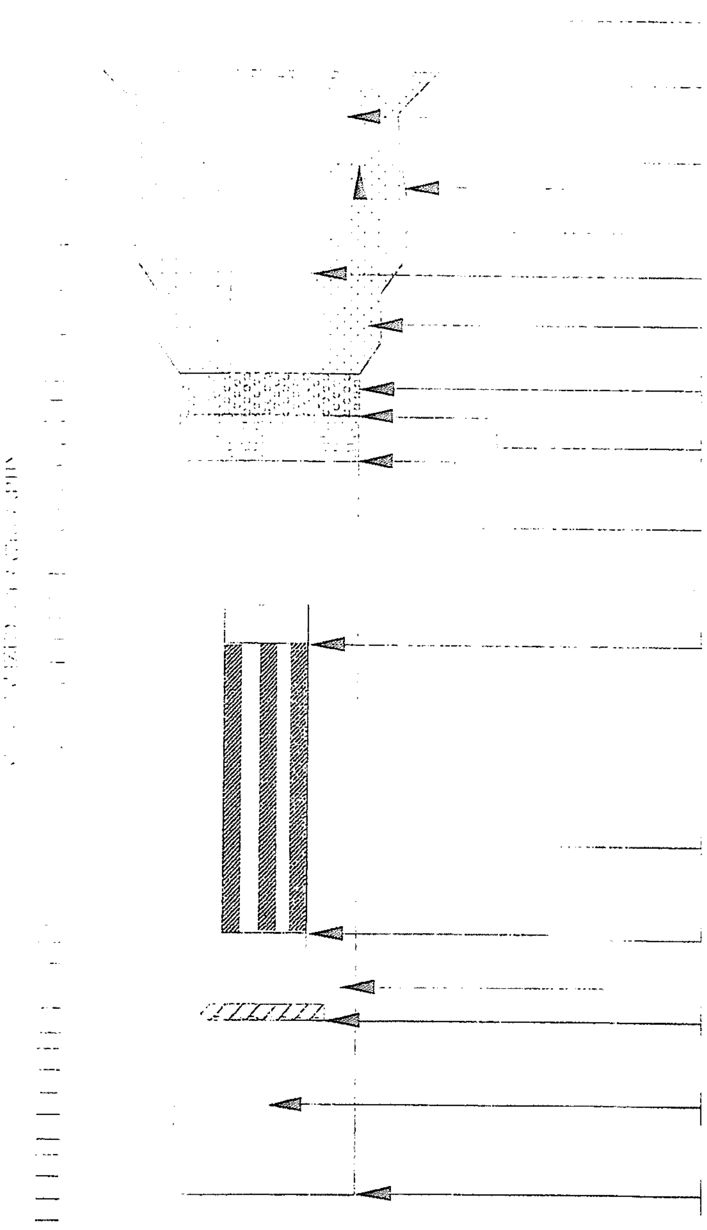
PROJECT No. 96020

CLIENT: NYSDEC Region 8 - Scott Rodabaugh

WELL No. MW21

DATE COMPLETED: 7/16/98

SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 852.83

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 12.35'
SCREEN SIZE/TYPE: .020 slot SCH 80 PVC

BOTTOM OF SCREEN Elevation/Depth: 20.85'

BOTTOM OF FILTER PACK
Elevation/Depth: 21.35'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 21.35'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 21.35'

NOTES

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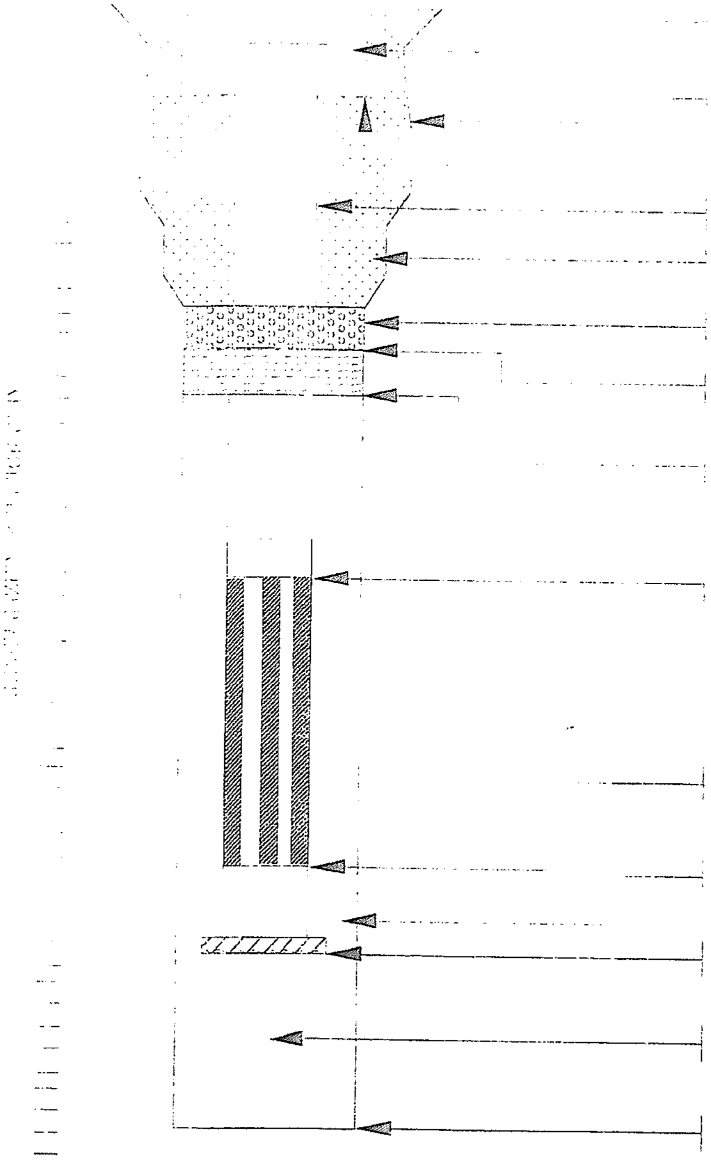
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW22
DATE COMPLETED: 7/16/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 842.52

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 11.60'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 21.10'

BOTTOM OF FILTER PACK
Elevation/Depth: 21.60'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 21.60'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 21.60'

NOTES

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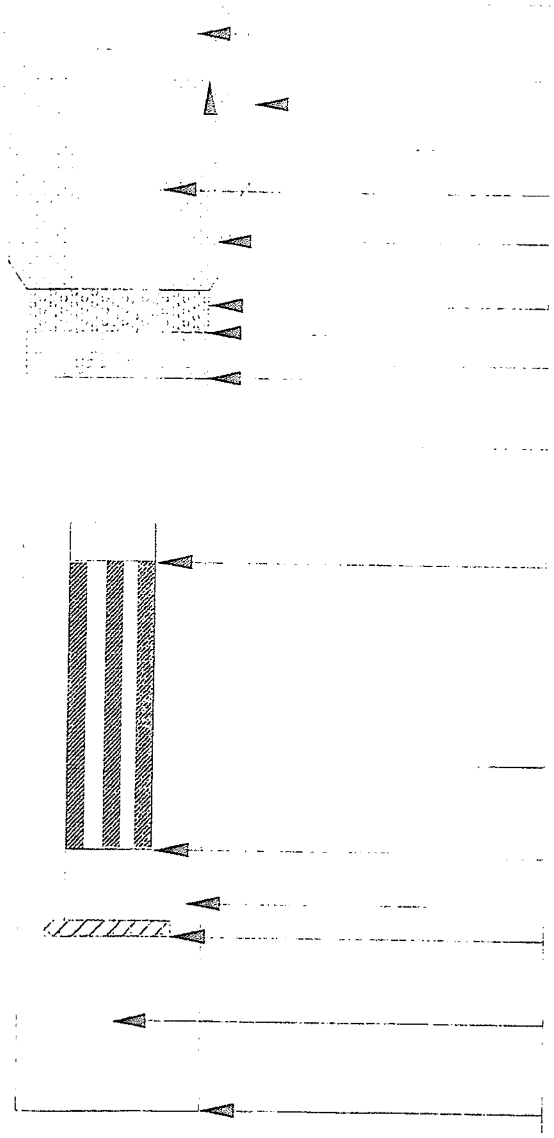
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW23
DATE COMPLETED: 7/16/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 838.80

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 8.70'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.20'

BOTTOM OF FILTER PACK
Elevation/Depth: 18.70'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 18.70'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 18.70'

NOTES

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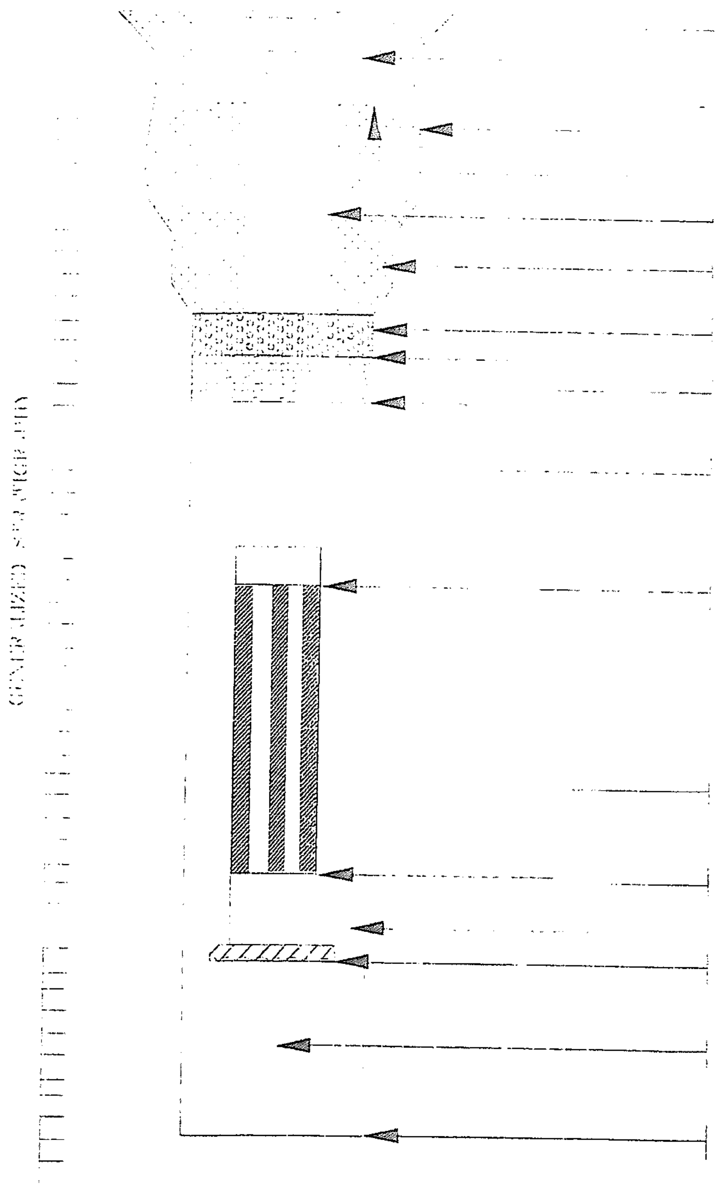
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96-020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW24
DATE COMPLETED: 7/16/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: ____

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 6.72'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 16.22'

BOTTOM OF FILTER PACK
Elevation/Depth: 16.72'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 16.72'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 16.72'

NOTES

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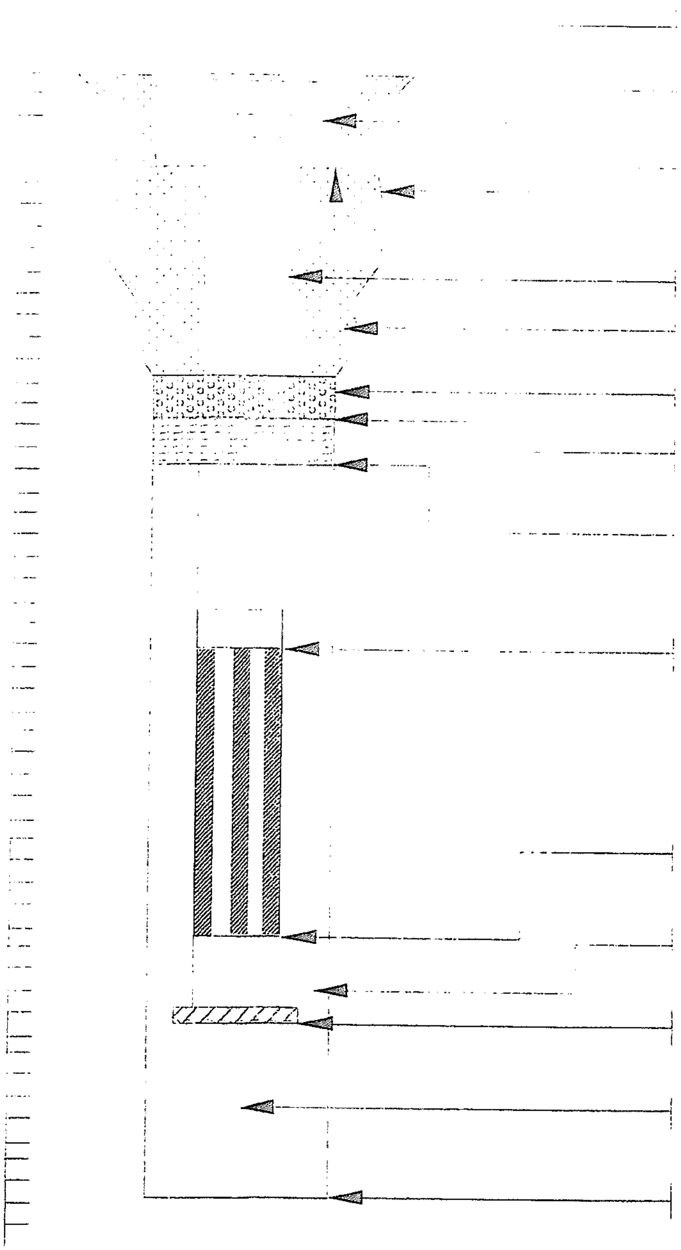
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW25
DATE COMPLETED: 7/17/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 841.16

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 9.25'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 18.75'

BOTTOM OF FILTER PACK
Elevation/Depth: 19.25'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 19.25'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 19.25'

NOTES

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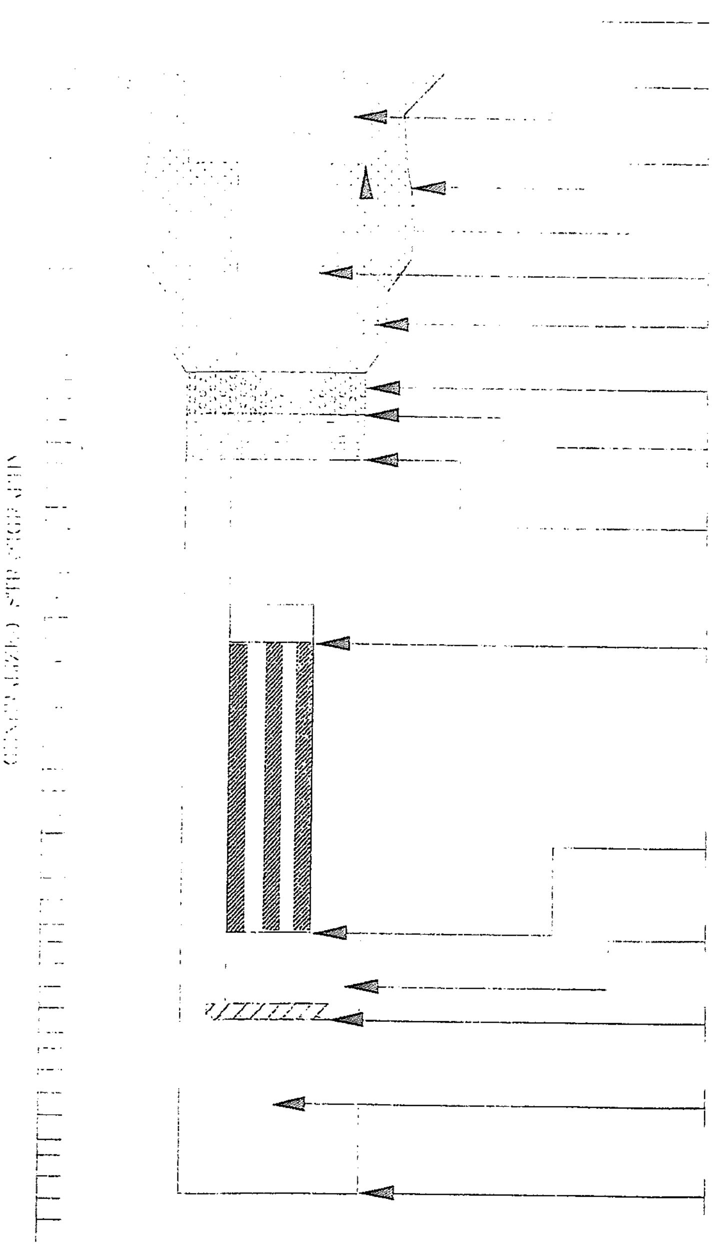
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW26
DATE COMPLETED: 7/17/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 843.44

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 7.05'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 16.55'

BOTTOM OF FILTER PACK
Elevation/Depth: 17.05'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 17.05'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 17.05'

NOTES

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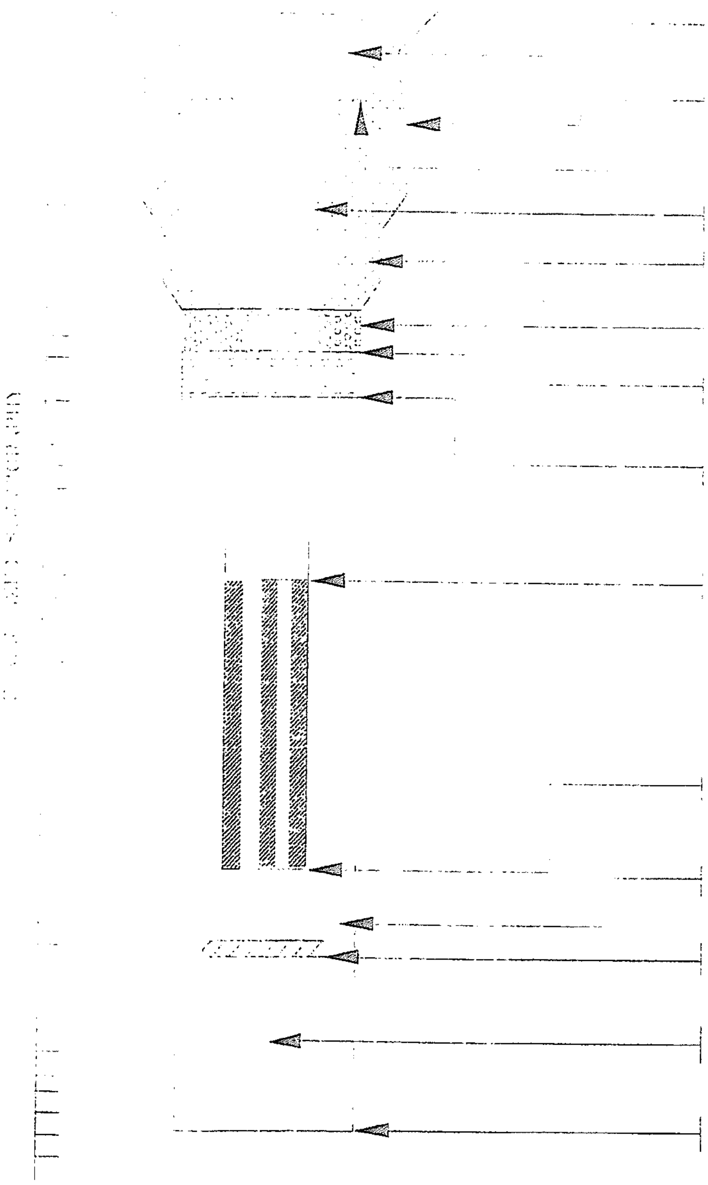
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW27
DATE COMPLETED: 7/17/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 840.38

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 6.30'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 15.80'

BOTTOM OF FILTER PACK
Elevation/Depth: 16.30'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 16.30'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 16.30'

NOTES

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WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW28
DATE COMPLETED: 7/17/98
SUPERVISED BY: Chris Treese

REFERENCE POINT
Elevation/Depth: 851.30

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 12.00'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 21.50'

BOTTOM OF FILTER PACK
Elevation/Depth: 22.00'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 22.00'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 22.00'

NOTES

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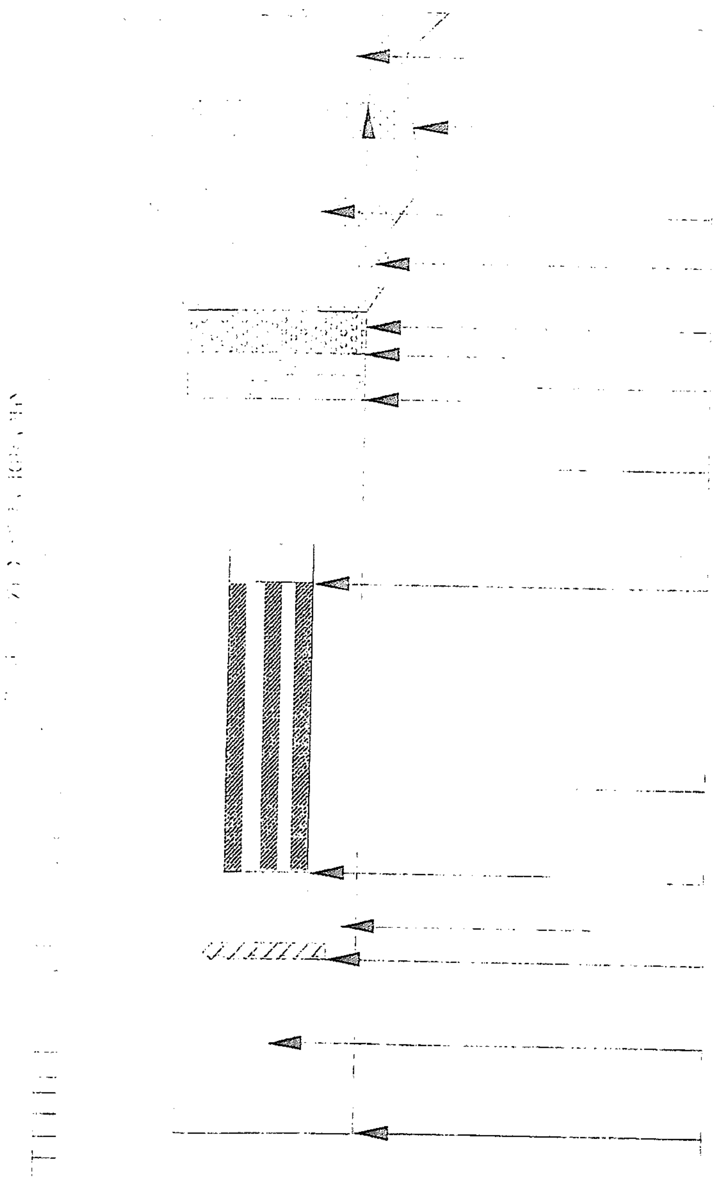
WELL CONSTRUCTION DETAIL

PROJECT/LOCATION: NYSDEC/Miller Pond
PROJECT No. 96020
CLIENT: NYSDEC Region 8 - Scott Rodabaugh
WELL No. MW29
DATE COMPLETED: 7/17/98
SUPERVISED BY: Chris Treese



REFERENCE POINT
Elevation/Depth: 851.46

SURFACE SEAL
Type/Depth: Concrete/1.5'

DEPTH OF SURFACE CASING: 1.0'

RISER PIPE Size/Type: 1" diameter SCH 40 PVC

DIAMETER OF BOREHOLE: 2.00"

TYPE OF FILL: Native soil

TOP OF SEAL Elevation/Depth: 1.50'
TYPE OF SEAL: None

TOP OF FILTER PACK Elevation/Depth: 1.50'
FILTER PACK MATERIAL: Native soil

TOP OF SCREEN Elevation/Depth: 11.90'
SCREEN SIZE/TYPE: .020 slot SCH 40 PVC

BOTTOM OF SCREEN Elevation/Depth: 21.40'

BOTTOM OF FILTER PACK
Elevation/Depth: 21.90'

BOTTOM OF PLUGGED BLANK SECTION
Elevation/Depth: 21.90'

TYPE OF FILLER
BELOW PLUGGED BLANK: Native soil

BOTTOM OF BOREHOLE
Elevation/Depth: 21.90'

NOTES

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APPENDIX E

UNDERGROUND UTILITY SURVEY

NYLD Infrastructure Field Report

NEW YORK LEAK DETECTION, INC.

Date: 7/13/15 - 7/14/15 Technician: Joe Goodfellow

Customer: Geosyntec Consultants

Site Address: Elmira High School 777 South Main St. Elmira, N.Y.

Contact Person: Adam Gray Phone: 301-379-0933 Phone: _____

Scope of Work: Locate utilities in outlined areas on map (~189 borings)

Type of Service:

☐ *Leak Detection* ☒ *Utility Location/GPR* ☐ *Video Inspection*

☐ *Infrastructure Assessment* ☐ *Utility Mapping/AutoCAD*

Type of Equipment Used

☐ *Profiler EMP 400* ☐ *RD4000* ☒ MetroTech Vivax vLocPro2

☐ *LC2500 Leak Correlator* ☒ *Noggin 250 mHz* ☐ PosiTector UTG G3

☐ *S-30 Surveyor* ☐ Noggin 500 mHz ☒ *Video Inspection Camera*

☒ *Sonde* ☐ Conquest 1000 mHz ☐ *Helium # Bottles*

☐ *Leica Robotic Total Station* ☐ *Leica GPS*

Marking Used

☒ *Paint* ☒ *Flags* ☐ *Chalk*

☐ *Updated existing maps onsite* ☐ *Other:* ____________

Instructions from Onsite Contact: Locate utilities in outlined areas on map.

Size of Pipe: _____

Notes/Testing Results: 7/13/15 - Began work in ballfield, grand stand and entrance by pool. Electric, water and some unknowns located. Entrance area has almost 2' of mulch, GPR is to high off ground, no reception, known buried manholes in this area. 7/14/15 - Began work on back side, more mulch here, large area. Water, storm and gas mains in area. Start parking area, used camera and sonde to help locate storm lines. HVE and gas main run through parking lot. On site with Steve Birmingham. See attached.

Information Transfer

☒ *Information relayed on site to:* Adam ☐ *Hand drawn map (forward to office for digital remake)* ☐ *All markings picked up by surveyors*

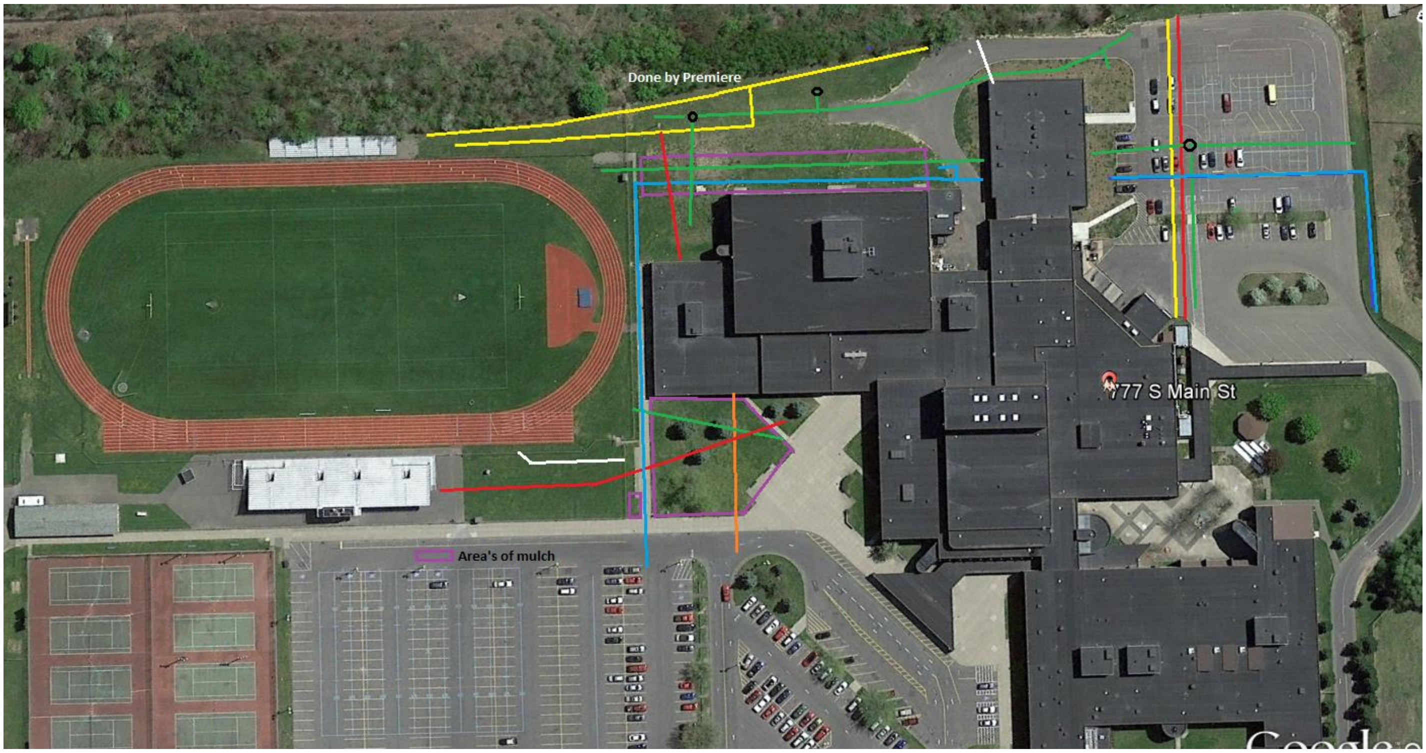
NYLD Infrastructure

NEW YORK LEAK DETECTION, INC.

Field Report

Key

Blue	Water
Red	Power
Orange	Communications
Yellow	Gas/Flammable Fuel
White	Unknown
Green	Storm/Sanitary



NYLD Infrastructure Field Report

NEW YORK LEAK DETECTION, INC.

Date: Mon. 07/13/2015 & Tues. 07/14/2015 Wed. 07/15/2015 Technician: Steve Birmingham

Customer: Geosyntec Consultants

Site Address: Elmira School 777 South Main St Elmira, NY

Contact Person: Jay Thompson Phone: 650-319-5880 Phone: Adam Gray301-379-0933

Scope of Work: U.L. - Locate utilities in outlined areas on map (~189 borings).

Type of Service:

☐ *Leak Detection* ☒ *Utility Location/GPR* ☐ *Video Inspection*

☐ *Infrastructure Assessment* ☐ *Utility Mapping/AutoCAD*

Type of Equipment Used

☐ *Profiler EMP 400* ☒ *RD4000* ☐ MetroTech Vivax vLocPro2

☐ *LC2500 Leak Correlator* ☒ *Noggin 250 mHz* ☐ PosiTector UTG G3

☐ *S-30 Surveyor* ☐ Noggin 500 mHz ☐ *Video Inspection Camera*

☒ *Sonde* ☐ Conquest 1000 mHz ☐ *Helium # Bottles*

☐ *Leica Robotic Total Station* ☐ *Leica GPS*

Marking Used

☒ *Paint* ☒ *Flags* ☐ *Chalk*

☐ *Updated existing maps onsite* ☐ *Other:* ________________________

Instructions from Onsite Contact: _____

Size of Pipe: _____

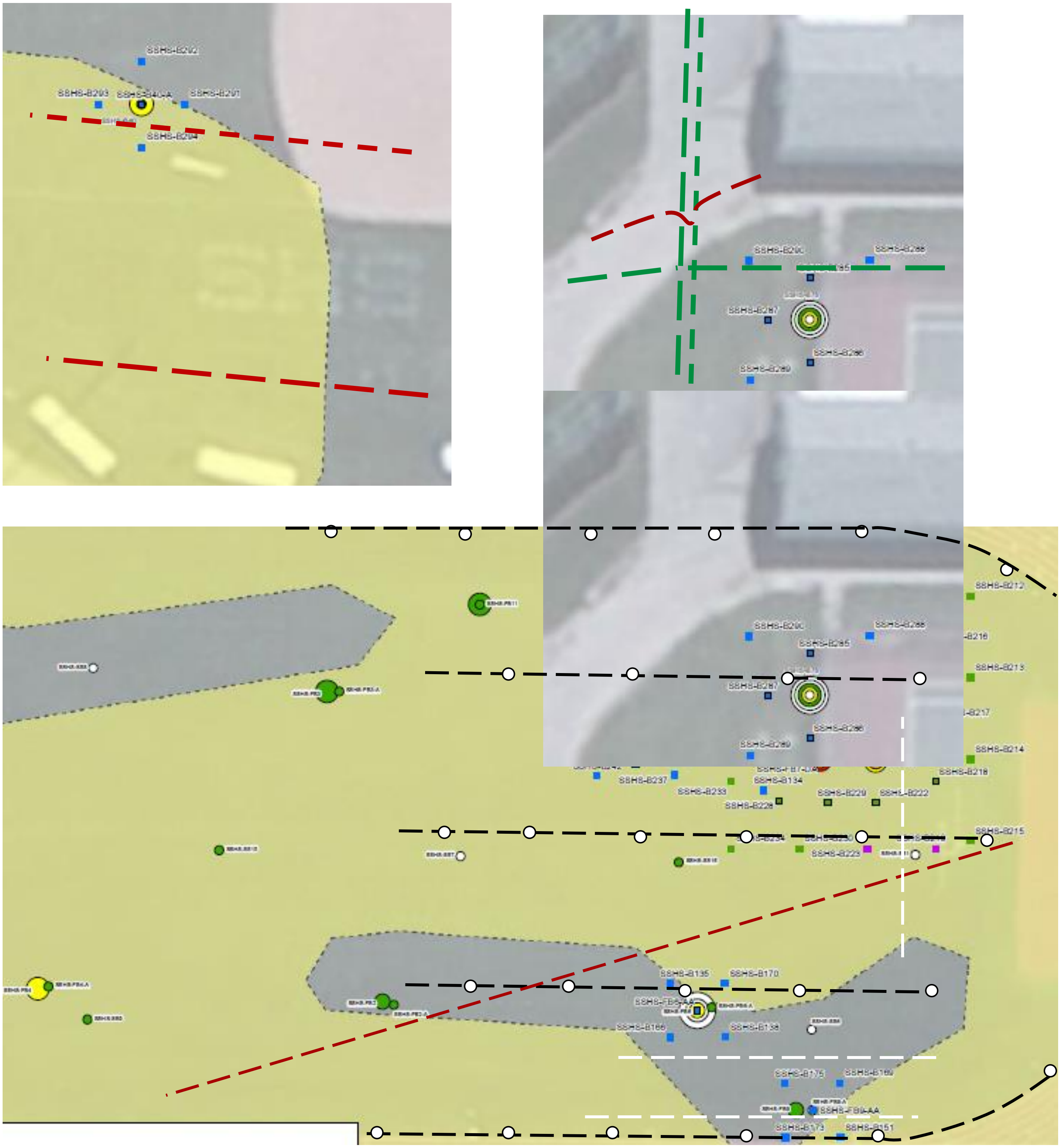
Ground Cover/Weather Conditions: Partly Cloudy grass turf, bark mulch beds and parking lot placktop

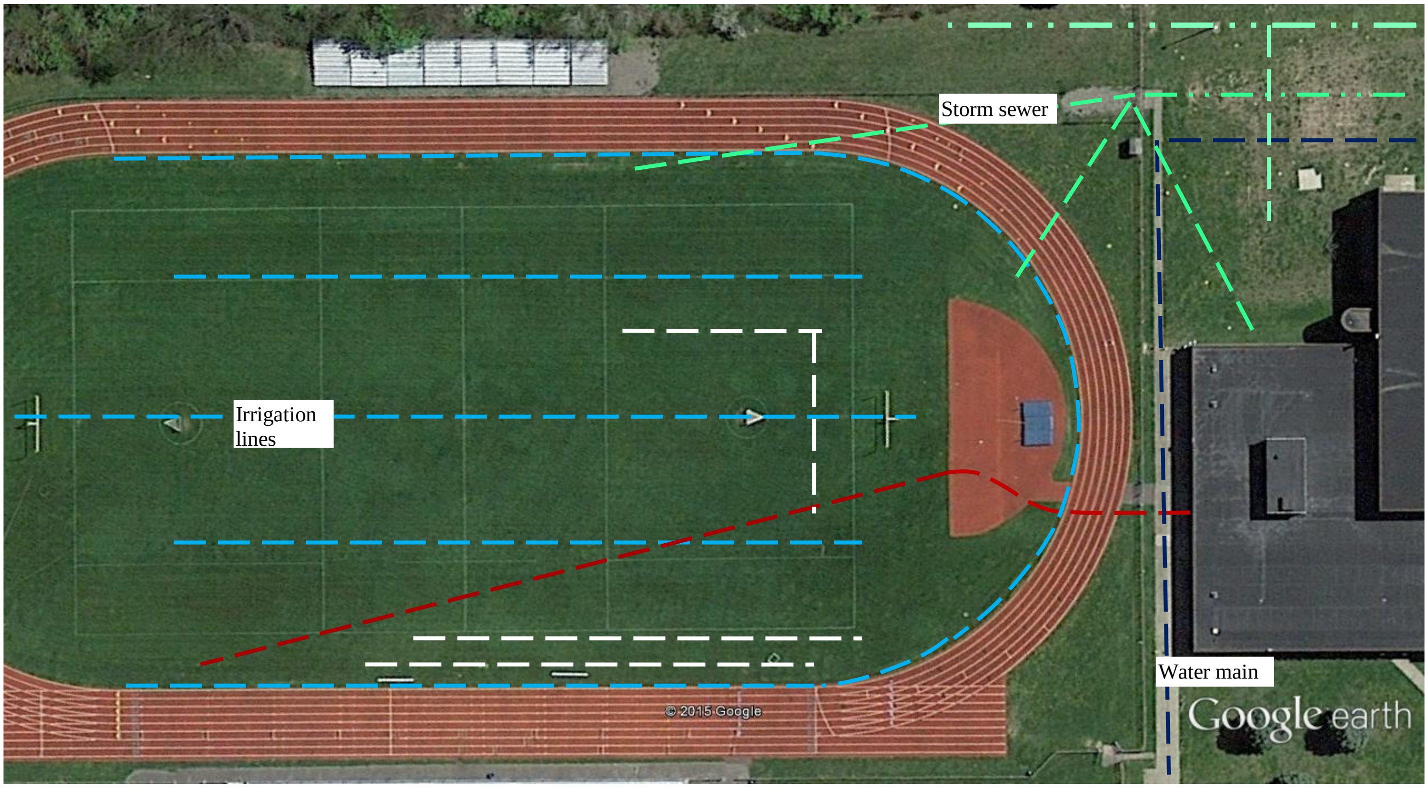
Site Access/Safety Training: _____ **Expiration Date:** _____

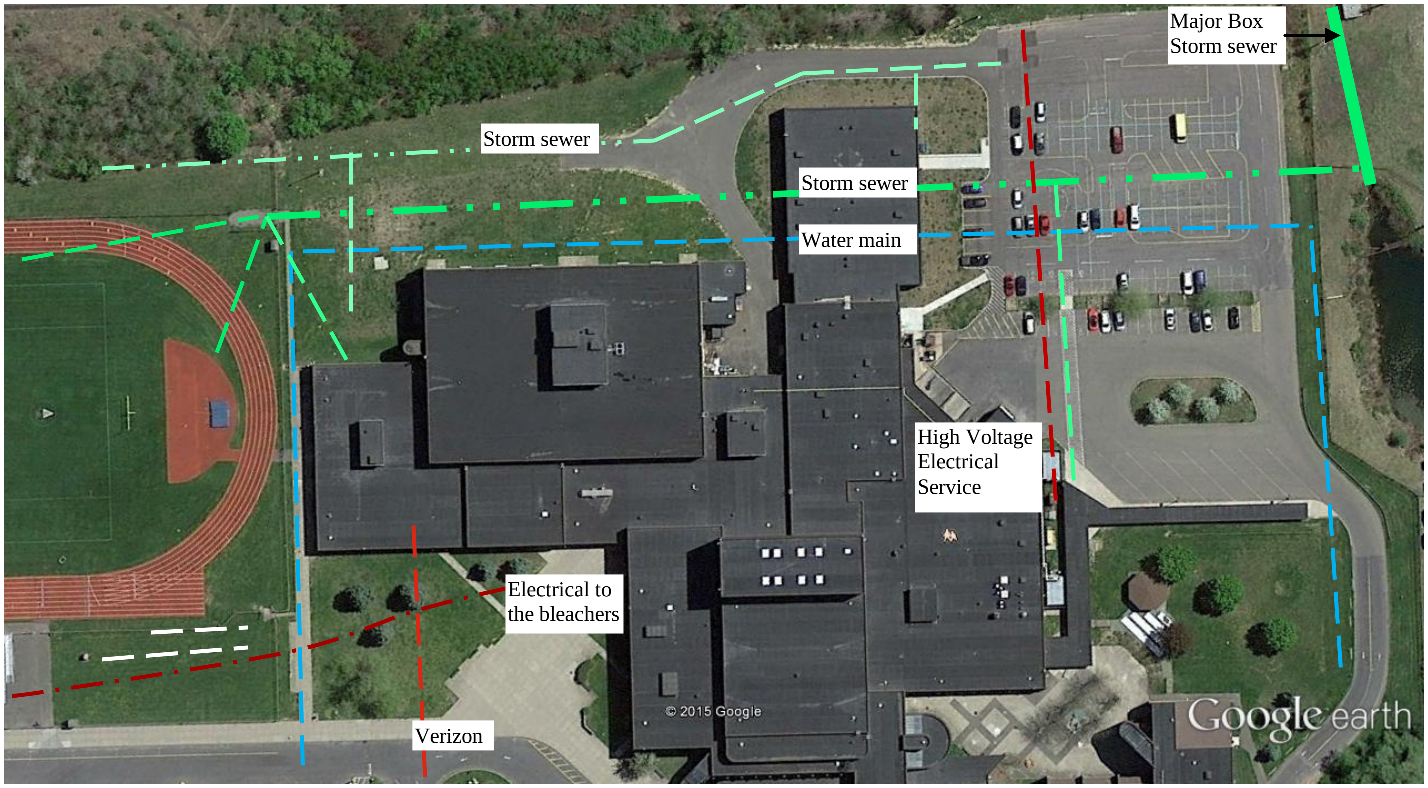
Information Transfer

☒ *Information relayed on site to: Jay Thompson & Adam Gray* ☐ *Hand drawn map (forward to office for digital remake)* ☐ *All markings picked up by surveyors*

Notes/Testing Results:




Storm sewer
Irrigation lines
Water main
© 2015 Google
Google earth


Major Box Storm sewer
Storm sewer
Storm sewer
Water main
High Voltage Electrical Service
Electrical to the bleachers
Verizon
© 2015 Google
Google earth

1. Used the RD8000 to scan all areas on power and radio modes.
2. Used the Noggin Smart cart with the 250 antenna to scan all areas.
3. Bark mulch beds have been installed in two areas. These two areas didn't scan well with the radar.
4. No digging allowed in the bark mulch areas.
5. Storm sewer discharge into a major storm box culvert on the adjacent property.

Key

Blue	Water
Red	Power
Orange	Communications
Yellow	Gas/Flammable Fuel
White	Unknown
Green	Storm/Sanitary

APPENDIX F – EXCAVATION WORK PLAN (EWP)

F-1 NOTIFICATION AND REPORTING

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. **Table F-1** includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix 1.

Table F-1: Notifications*

Timothy Schneider, PE Project Manager	Phone: 585-226-5480 Email: timothy.schneider@dec.ny.gov
Bernette Schilling, PE Regional Hazardous Waste Remediation Engineer	Phone: 585-226-5315 Email: bernette.schilling@dec.ny.gov
Kelly Lewandowski, PE Site Control	Phone: 518-402-9553 Email: kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR (Code of Federal Regulations) 1910.120;

- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix 4 of this SMP;

- Identification of disposal facilities for potential waste streams; and

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

In addition, the SHS SDHSO shall complete and submit a copy of the Annual Certification Report by January 15th of each year to the School District Board of Education and a courtesy copy to the NYSED, NYSDEC and NYSDOH. The Annual Certification Report shall certify that the School District implemented the SMP and that it is effective; that protective covers have been maintained; and conditions at the SHS property are fully protective of public health and the environment. A copy of the Annual Certification Report will be available for downloading from the School District's website for public review and notification will be placed in the High School newsletter.

If the cover systems have been breached, the School District shall include the following in the Annual Certification Report:

- Certification that all work was performed in conformance with the SMP.

- Plans showing areas and depths of fill removal.

- Copies of daily inspection reports for soil—related issues.

- Description of erosion control measures.

- A narrative describing the excavation activities performed, health and safety monitoring performed (includes community air monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, soil sampling locations and results, a description of any issues encountered, location and acceptability of test results for backfill sources, and other pertinent information necessary to document that the activities were carried out properly.

If the disturbed area exceeds one (1) acre, the following must also be included in the Annual Certification Report:

- State Pollutant Discharge Elimination System (SPDES) Permit and Storm Water Pollution Prevention Plan (SWPPP).

- Plans showing before and after survey elevations on a 100-foot grid system to document the thickness of the clean soil cover system.

Note that, for excavation work below the cover system, a Professional Engineer or representative with construction/remediation experience, representing the SHS property owner or developer, will monitor soil/fill excavations or disturbances. The Professional Engineer must also provide a stamped/signed certification that excavation work below the cover system and subsequent repair/replacement of the cover system was conducted in a manner consistent with this SMP. The Professional Engineer certification must be included in the Annual Certification Report.

F-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the Certificate of Completion (COC).

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section 2-6 of this Appendix.

Procedures for characterizing excavated soils from the SHS property are summarized on **Figure F-1**.

Historic contaminant levels for SHS property soils are summarized in **Figures 2-6** through **2-8** are provided as reference maps to quickly determine if an area on the SHS property is a potential management area with regards to contamination or if data gaps exist for the area. Contamination levels for VOCs, Semi-Volatile Organic Compounds (SVOCs), PCBs and Metals are provided for soils at varying depths.

Soil excavated from the SHS property must be characterized to determine whether it can be reused as a soil cover system (zero (0) to two (2) feet bgs), as fill material below a cover system, or disposed to a permitted facility. Excavated soil may be reused as a soil cover system, or as backfill in landscaping berms, provided that soil concentrations do not exceed the Soil Management Objectives (SMOs), as provided in **Table F-2**.

All excavated soil, regardless of condition, must be placed on polyethylene sheeting (sheeting) and covered with sheeting to reduce precipitation infiltration and dust migration.

All soil samples that require analysis will be submitted to a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory and analytical results will be data validated by an independent third party to insure accuracy of sampling, testing and data reporting procedures.

Characterization of Excavated Soil Disposed at a Permitted Facility

Excavated soils that are not being considered for reuse on the SHS property will be stockpiled and composite soil sample(s) will be collected. The composite sample(s) will be analyzed for the parameters specified in **Table F-3** "Permitted Disposal Facilities-Soil Sampling Requirements Summary", and any additional parameters required by the permitted transporter. The number of composite samples collected will depend on the volume of soil excavated and the permitted disposal facility requirements. NO SSHS SOILS (regardless of analytical data) WILL BE DISPOSED OF AT LOCATIONS OTHER THAN PERMITTED DISPOSAL FACILITIES.

Characteristics of Potentially Contaminated Soil

Soil observed to be stained, discolored, tinted, dyed, unnaturally mottled, or has a sheen or produces elevated photoionization detector (PID) readings (i.e., sustained 10 ppm or greater) will be considered potentially contaminated and stockpiled for further assessment.

Potentially contaminated soil defined as a source level of contamination includes soil that contains contaminant concentrations sufficient to be a potential exposure to public health or the environment, or can release contaminants to another environmental medium. Analytical methods to determine if contaminant levels are source levels include testing impacted soil for ignitability, corrosivity, reactivity and toxicity. Toxicity can be measured by conducting the Toxicity Characteristics Leaching Procedure (TCLP) for soil as outlined in 6 NYCRR 371 .3(e).

Reuse of Excavated Soil Not Considered Potentially Contaminated

If excavated soil does not have characteristics of potentially contaminated soil, as described above, it may be reused on the SHS property as fill beneath an approved cover system and no analytical characterization is required. If excavated soil does not have characteristics of potentially contaminated soil and is planned for reuse as an approved soil cover system, a composite soil sample must be collected for every 500 cy of excavated soil. The composite soil sample(s) will be analyzed for parameters provided in **Table 2-3** as a basis for achieving the SMOs. If analytical results indicate that the SMOs are not exceeded, the soil may be used as a soil cover system (0-2 feet thick) or as fill material beneath an approved cover system. If SMOs are exceeded and reported concentrations are not considered source levels of contamination, the soil may be reused as backfill beneath an approved cover system or for disposal at a permitted facility.

Reuse of Excavated Soil Considered Potentially Contaminated lf excavated soil has characteristics of potentially contaminated soil, and is being considered for reuse as a soil cover system or as fill beneath an approved cover system, a composite soil sample must be collected for every 100 cy of excavated soil. For stockpiles considered potentially contaminated with VOCs as described above, one (1) grab sample will also be collected from the stockpile sample location with the highest PID measurement and will be analyzed only for VOCs. Composite soil sample(s) will be analyzed for parameters provided in **Table 2-3** as a basis for achieving the Site SMOs.

If analytical results indicate any of the SMOs are exceeded, the excavated soil may not be reused as a soil cover system. However, the soil may be considered for use as fill beneath an approved cover system if reported concentrations are not considered source levels of contamination or for disposal to a permitted facility.

Procedures for Collecting Soil Samples

A composite soil sample will be collected from each stockpile (either l00 or 500 cy stockpiles) from five (5) locations within each stockpile. A duplicate sample will also be collected for every twenty (20) composite soils collected. PlD measurements will be recorded for each of the five (5) individual locations. For stockpiles considered potentially contaminated with VOCS, one (1) grab sample will also be collected from the stockpile sample location with the highest PID measurement. If none of the five (5) individual sample locations exhibit PID readings, one (1) location will be selected at random. Grab soil sample(s) will be analyzed only for VOCs and composite soil samples will be analyzed for all parameters listed in **Table 2-3**.

Soil samples will be composited by placing equal portions of fill/soil from each of the five (5) composite sample locations from one (1) soil stockpile (either 100 or 500 cy) into a clean, stainless steel or Pyrex glass mixing bowl. The soil/fill will be thoroughly homogenized using a stainless steel scoop or trowel and transferred to jars provided by the laboratory. Sample jars will then be labeled and a Chain-of-Custody form will be prepared.

F-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

F-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site. Dig Safely New York (1-800-962-7962) must be contacted for a utility location request for the proposed excavation area.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

F-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes are as follows: (1) Trucks are to proceed north on S Main Street until reaching W. Miller Street. (2) Trucks are to turn right on W Miller Street and immediately turn on to Clemens Center Parkway heading north. (3) Trucks are to proceed on Clemens Center Parkway until reaching E Water Street. (4) Turn right on E Water Street and Proceed to I-86. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

F-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, construction and demolition (C/D) recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

F-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

If excavated soil does not have characteristics of potentially contaminated soil, as described in Section F-2, it may be reused on the SHS property as fill beneath an approved cover system and no analytical characterization is required.

If excavated soil does not have characteristics of potentially contaminated soil and is planned for reuse as an approved soil cover system, a composite soil sample must be collected for every 500 cy of excavated soil, following procedures in F-2. The composite soil sample(s) will be analyzed for parameters provided in **Table 2-3** as a basis for achieving the SMOs. If analytical results indicate that the SMOs are not exceeded, the soil may be used as a soil cover system (0-2 feet thick) or as fill material beneath an approved cover system. If SMOs are exceeded and reported concentrations are not considered source levels of contamination, the soil may be reused as backfill beneath an approved cover system or for disposal at a permitted facility.

lf excavated soil has characteristics of potentially contaminated soil, as described in Section F-2, and is being considered for reuse as a soil cover system or as fill beneath an approved cover system, a composite soil sample must be collected for every 100 cy of excavated soil following procedures in Section F-2. For stockpiles considered potentially contaminated with VOCs as described above, one (1) grab sample will also be collected from the stockpile sample location with the highest PID measurement and will be analyzed only for VOCs. Composite soil sample(s) will be analyzed for parameters (excluding VOCs) provided in **Table 2-3** as a basis for achieving the Site SMOs.

If analytical results indicate any of the SMOs are exceeded, the excavated soil may not be reused as a soil cover system. However, the soil may be considered for use as fill beneath an approved cover system if reported concentrations are not considered source levels of contamination, as defined in Section F-2, or for disposal to a permitted facility.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

F-8 FLUIDS MANAGEMENT

Air monitoring for VOCs will be conducted during pumping of groundwater from an excavation. If pumping of water from an excavation is necessary (i.e., groundwater and/or storm water that has accumulated in an excavation), this will be performed in such a manner as to prevent the migration of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade. Water pumped from excavations will be managed properly in accordance with all applicable regulations so as to prevent endangerment of public health, property, or any portion of the construction area.

In areas where groundwater may be contaminated, the groundwater in excavations will be field screened for VOCs and observed for any visible sheens. Water in the excavations will not be discharged to the ground surface if staining or PID measurements above background are observed in the excavation, or a sheen is present on the water surface.

If any of these conditions exist, the water pumped from the excavations will be containerized in drums, totes or Frac tanks and will be analyzed in accordance with the Surface Water and Ground Water Quality Standards set forth in 6 NYCRR Part 703.5 and the local sewer authority discharge permit. If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface water and groundwater quality standards, it may be discharged to the local sewer authority under a discharge permit. If the water quality is such that the local sewer authority discharge permit requirements will be exceeded, or the local sewer authority will not approve the discharge to a sewer, it will be transported to a permitted facility or treated on the SHS property via a treatment system that has been approved by the NYSDEC.

Runoff from surface discharges shall be controlled. No discharges shall enter a surface water body without proper permits.

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

F-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with this SMP. The existing cover system is comprised of a minimum of twenty-four (24) inches of vegetated soil cover, or a minimum of six (6) inches of asphalt (including subbase material) in areas containing roads, sidewalks, and parking lots, or a minimum of six (6) inches of concrete (including subbase material) in areas containing roads, sidewalks or parking lots constructed of concrete in lieu of asphalt. The demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, etc. will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

F-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

Subgrade material from off property locations used to backfill excavations to increase SHS property grades or to increase elevation shall meet the following criteria:

- Off-property borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Off-property soils intended for use as SHS property backfill cannot be defined as a solid waste in accordance with 6 NYCRR Part 360-1 .2(a).

- If an off-property soil source is designated as “virgin” soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

- Virgin soils should be subject to collection of one (1) representative composite sample and one (1) grab sample per source.

- Non-virgin soils will be tested by collecting one (1) composite sample and one (1) grab sample per 500 cy of material from each source area. If more than 1,000 Cy of soil are borrowed from a given off-Property non-virgin soil source area, and both samples of the first 1,000 cy meet the SMOs, the sample collection frequency will be reduced to one (1) composite sample and one (1) grab sample for every 2,500 cy of additional soils from the same source, up to 5,000 cy. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one (1) composite sample and one (1) grab sample per 5,000 cy, provided all earlier samples meet the SMOS.

- Composite soil samples should be analyzed for parameters listed in **Table 2-4**, and grab soil samples should be analyzed only for VOCs. Soil will be acceptable for use as backfill provided that all parameters meet the SMOs provided in **Table 2-4**.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in **Table F-4**. Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

In addition, the following criteria must also be followed:

- The soil cover system must be two (2) feet thick and vegetated.

- The topsoil used for the final cover shall conform to the specification of 713-01 of NYSDOT’s most recent version of the standard specifications. The topsoil will be fertile, friable, natural loam surface soil, capable of sustaining plant growth, and free of clods or hard earth, plants or roots, sticks or other extraneous material harmful to plant growth.

- Grassed areas will be seeded with a sustainable perennial mixture with appropriate erosion control measures taken until the perennial grasses are established.

- To reduce the disturbance of the surface cover material, berms will be constructed with soil that meets the SMOs in areas where shallow-rooted trees and shrubs will be planted. The berms will be of sufficient thickness to allow the excavation to be deep enough to plant the tree or shrub root ball. The berm material will contain sufficient organic material to allow tree and/or shrub growth, and will be of sufficient strength to support trees and/or shrubs at their maximum height.

- Where asphalt pavement is proposed for roads, sidewalks, and parking lots, the asphalt pavement will represent an approved cover system that will have a minimum cross-sectional thickness of six (6) inches of material (asphalt and clean subbase material). The actual cross-section of the asphalt cover (i.e., thickness of the asphalt and subbase material) will be determined based on the intended use in each paved area. Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

- Where concrete pavement is proposed for slab-on—grade structures, utilities, footings, foundations, or signs, or if concrete is used instead of asphalt for roads, sidewalks, and parking lots, it will represent an approved cover system that will have a minimum cross-sectional thickness of six (6) inches of material (concrete and clean subbase material). A vapor barrier consisting of polyethylene sheeting with a minimum thickness of eight (8)—mils and an active sub—slab depressurization system will be installed under all newly constructed structures.

F-11 STORMWATER POLLUTION PREVENTION

When development at the SHS property requires disturbing more than one (1) acre of land, Federal and State laws require that the project obtain coverage under the NYSDEC SPDES General Permit for Storm Water Discharges from Construction Activities, Permit #GP-O-08-001 (Construction Storm Water General Permit) effective December 9, 2002. Requirements for coverage under the Construction Storm Water General Permit include the submittal of a Notice of Intent (NOI) form and the development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must fulfill all permit requirements and will provide the following information:

- Background discussion of the scope of the construction project. Statement of the storm water management objectives.
- Evaluation of post—construction runoff conditions.
- Description of proposed storm water control measures.
- Description of the type and frequency of maintenance activities required to support the control measure.

The SWPPP must address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, ecological protection, SHS property characteristics that impact design, and SHS property management planning. All descriptions of proposed features and structures will include a description of structure placement, supporting engineering data and calculations, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in the construction and development plans to mitigate soil erosion, off—Property sediment migration, and water pollution from erosion. The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill stockpiles and unvegetated soil surfaces during construction activities. Stockpiles shall be graded and compacted as necessary for positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of 50 feet from the SHS property boundary.

Temporary Erosion Control Measures

Temporary erosion and sedimentation control measures and Best Management Practices (BMPs) will be employed during active construction stages. Prior to any construction activity, temporary erosion and sediment control measures shall be installed and maintained until such time that installed permanent erosion control measures are effective. Silt fencing and filter fabric inlet protection will be incorporated into construction activities.

As sediment collects along the silt fences, the silt fences will be cleaned to maintain the desired performance and to prevent structural failure of the fence. Accumulated sediment will be removed when bulges develop in the silt fence. Removed sediment will be stockpiled and characterized in accordance with Section F-2. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established. Silt fences will be provided and installed in accordance with the New York Guidelines for Urban Erosion and Sediment Control.

Permanent Erosion Control Measures

Permanent erosion control measures and BMPs will be incorporated during cover system construction and during construction for long—term erosion protection. Permanent measures, as discussed below, will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment shall not include dry wells or other subsurface injections/disposal piping unless they are located in areas where a subsurface investigation has reported contamination levels do not exceed groundwater standards.

Soils management practices involve the installation of an approved cover system including asphalt, concrete, or vegetated soil over all or portions of the SHS property that are under construction. Permanent erosion control measures incorporate a combination of design features to limit overall erosion and sediment problems to practical design limits, and the placement of permanent facilities during restoration for long term erosion protection.

Design features incorporated into the construction plans to control erosion will include limiting steep slopes, routing runoff to surface water collection channels, limiting flow velocities in the collection channels to the extent practical, and lining collection channels, where appropriate. In areas where flow will be concentrated (i.e.; collection channels) the channel slopes and configuration will be designed to maintain channel stability.

Any final slopes greater than 33% will be reinforced, and will have a demarcation layer under the clean cover to indicate if erosion has extended to the subgrade. Following the placement of final cover soils over regraded areas, a revegetation program will be implemented to establish permanent vegetation. Vegetation serves to reduce erosion, enhance evapotranspiration, and improve runoff water quality. Areas with slopes greater than 33% will be seeded in stages as construction is completed with 100 lbs./acre of seed of a sustainable perennial mixture.

In addition to the above seed mixture, mulch, mulch blankets, or synthetic fabric will be placed to prevent erosion during turf establishment.

Mulch will be placed on all slopes less than 15% and a mulch blanket on all slopes greater than l5%. Synthetic erosion control fabric will be placed in drainage ditches and swales.

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

F-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (Target Analyte List [TAL] metals; Target Compound List [TCL] volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline at (800) 457-7362. These findings will be also included in the Periodic Review Report.

If an excavation intersects the groundwater table, and ponded groundwater on the excavation floor interferes with further excavation, the following procedures must be implemented:

- Create a temporary sump in the lowest section of the excavation by removing additional material in this area where groundwater can collect.
- If the temporary sump cannot contain the collected groundwater volume during excavating, groundwater must be pumped and containerized in 55—gallon drums. Drums must be dated, labeled and stored in a secure area.
- A composite sample must be collected from all drums and analyzed for parameters specified by a permitted facility that accepts impacted groundwater. Arrangements must be made with the disposal facility for transport and disposal following receipt of the analytical results for the composite sample.
- All workers involved with managing groundwater in excavations and sampling containerized water must wear disposable outer garments, protective gloves and eyewear.

F-13 COMMUNITY AIR MONITORING PLAN

Air sampling locations will be selected and adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

- Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

- Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities. Final DER-10 Page 206 of 226 Technical Guidance for Site Investigation and Remediation May 2010

1 If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (NYSDEC and NYSDOH) and County Health personnel to review.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

F-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site.. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

F-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Particulate monitoring will be performed in accordance with the CAMP when ground-intrusive activities are conducted, including excavation, grading, and soil handling activities.

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles. The use of atomizing sprays is recommended so that excessively wet areas will not be created, however fugitive dust will be suppressed.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Vehicle speed will be restricted to ten (l0) miles per hour (mph) or the listed speed limit, whichever is less.
- Excavated areas and material will be covered as soon as possible after excavating activities cease. Vegetative cover will be established over cover soil as soon as possible.

F-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

F-17 ACCESS CONTROLS

Access to soil/fill on the property must be controlled until final cover is placed to prevent direct contact with subgrade materials. Stockpiled soil/fill must be covered to limit access to that material and the construction area must be restricted with temporary fencing posted with “no trespassing" signs.

F-18 REQUIREMENTS FOR MINOR ROUTINE OR EMERGENCY SOIL EXCAVATION PROJECTS

Minor routine excavation projects are defined as projects that will generate less than 20 cy of excavated soil. Emergency soil excavation projects are defined as projects that must occur immediately to address subsurface maintenance emergency (e.g. damaged utility pipes).

Contaminants reported for soils are summarized in **Figures 2-6** through **2-8**. The figures and plates should be reviewed to determine if the area to be excavated is located in a potentially contaminated area and to identify the potential type, concentration, and depth of contaminant.

DigSafely.New York (l-800-962-7962) must be contacted prior to ground intrusive activities if the project will potentially affect underground utility lines.

Excavated soil must be stockpiled on polyethylene sheeting. Soil must also be covered if it remains on the ground for more than one (1) workday.

Soil that does not appear contaminated may be returned to the excavation following project completion. The disturbed cover system must be replaced and restored to its original condition following procedures outlined in Section F-9.

If odors, stained soils, liquid product or groundwater are encountered in an excavation, the activity should be stopped immediately and the School District should contact a certified environmental professional and follow soil characterization procedures for potentially contaminated soils as outlined in Section F-2.

Minor routine and emergency excavation projects must be recorded and submitted as part of the Annual Certification Report and include the information outlined in Section F-1.

TABLE F-2

SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use	Restricted Use: Protection of Public Health			
			Residential	Restricted-Residential	Commercial	Industrial
Metals						
Arsenic	7440-38-2	13	16	16	16	16
Barium	7440-39-3	350	350	400	400	10,000
Beryllium	7440-41-7	7.2	14	72	590	2,700
Cadmium	7440-43-9	2.5	2.5	4.3	9.3	60
Chromium, hexavalent	18540-29-9	1	22	110	400	800
Chromium, trivalent	16065-83-1	30	36	180	1,500	6,800
Copper	7440-50-8	50	270	270	270	10,000
Total Cyanide		27	27	27	27	10,000
Lead	7439-92-1	63	400	400	1,000	3,900
Manganese	7439-96-5	1600	2,000	2,000	10,000	10,000
Total Mercury		0.18	0.81	0.81	2.8	5.7
Nickel	7440-02-0	30	140	310	310	10,000
Selenium	7782-49-2	3.9	36	180	1,500	6,800
Silver	7440-22-4	2	36	180	1,500	6,800
Zinc	7440-66-6	109	2200	10,000	10,000	10,000
Organochlorine Pesticides						
2,4,5-TP Acid (Silvex)	93-72-1	3.8	58	100a	500b	1,000c
4,4’-DDE	72-55-9	0.0033	1.8	8.9	62	120
4,4’-DDT	50-29-3	0.0033	1.7	7.9	47	94
4,4’- DDD	72-54-8	0.0033	2.6	13	92	180
Aldrin	309-00-2	0.005	0.019	0.097	0.68	1.4
alpha-BHC	319-84-6	0.02	0.097	0.48	3.4	6.8
beta-BHC	319-85-7	0.036	0.072	0.36	3	14
Chlordane (alpha)	5103-71-9	0.094	0.91	4.2	24	47
delta-BHC	319-86-8	0.04	100	100	500	1,000
Dibenzofuran	132-64-9	7	14	59	350	1,000c
Dieldrin	60-57-1	0.005	0.039	0.2	1.4	2.8
Endosulfan I	959-98-8	2.4	4.8	24	200	920
Endosulfan II	33213-65-9	2.4	4.8	24	200	920
Endosulfan sulfate	1031-07-8	2.4	4.8	24	200	920
Endrin	72-20-8	0.014	2.2	11	89	410
Heptachlor	76-44-8	0.042	0.42	2.1	15	29
Lindane	58-89-9	0.1	0.28	1.3	9.2	23
Polychlorinated biphenyls						
PCBs, Total	1336-36-3	0.1	1	1	1	25
SVOCs						
Acenaphthene	83-32-9	20	100	100	500	1,000

TABLE F-2

SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use	Restricted Use: Protection of Public Health			
			Residential	Restricted-Residential	Commercial	Industrial
Acenapthylene	208-96-8	100	100	100	500	1,000
Anthracene	120-12-7	100	100	100	500	1,000
Benz(a)anthracene	56-55-3	1	1	1	5.6	11
Benzo(a)pyrene	50-32-8	1	1	1	1	1.1
Benzo(b)fluoranthene	205-99-2	1	1	1	5.6	11
Benzo(g,h,i)perylene	191-24-2	100	100	100	500	1,000
Benzo(k)fluoranthene	207-08-9	0.8	1	3.9	56	110
Chrysene	218-01-9	1	1	3.9	56	110
Dibenz(a,h)anthracene	53-70-3	0.33	0.33	0.33	0.56	1.1
Fluoranthene	206-44-0	100	100	100	500	1,000
Fluorene	86-73-7	30	100	100	500	1,000
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5	0.5	5.6	11
m-Cresol	108-39-4	0.33	100	100	500	1,000
Naphthalene	91-20-3	12	100	100	500	1,000
o-Cresol	95-48-7	0.33	100	100	500	1,000
p-Cresol	106-44-5	0.33	34	100	500	1,000
Pentachlorophenol	87-86-5	0.8	2.4	6.7	6.7	55
Phenanthrene	85-01-8	100	100	100	500	1,000
Phenol	108-95-2	0.33	100	100	500	1,000
Pyrene	129-00-0	100	100	100	500	1,000
VOCs						
1,1,1-Trichloroethane	71-55-6	0.68	100	100	500	1,000
1,1-Dichloroethane	75-34-3	0.27	19	26	240	480
1,1-Dichloroethene	75-35-4	0.33	100	100	500	1,000
1,2-Dichlorobenzene	95-50-1	1.1	100	100	500	1,000
1,2-Dichloroethane	107-06-2	0.02	2.3	3.1	30	60
cis-1,2-Dichloroethene	156-59-2	0.25	59	100	500	1,000
trans-1,2-Dichloroethene	156-60-5	0.19	100	100	500	1,000
1,3-Dichlorobenzene	541-73-1	2.4	17	49	280	560
1,4-Dichlorobenzene	106-46-7	1.8	9.8	13	130	250
1,4-Dioxane	123-91-1	0.1	9.8	13	130	250
Acetone	67-64-1	0.05	100	100	500	1,000
Benzene	71-43-2	0.06	2.9	4.8	44	89
Butylbenzene	104-51-8	12	100	100	500	1,000
Carbon tetrachloride	56-23-5	0.76	1.4	2.4	22	44
Chlorobenzene	108-90-7	1.1	100	100	500	1,000
Chloroform	67-66-3	0.37	10	49	350	700
Ethylbenzene	100-41-4	1	30	41	390	780

TABLE F-2

SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use	Restricted Use: Protection of Public Health			
			Residential	Restricted-Residential	Commercial	Industrial
Hexachlorobenzene	118-74-1	0.33	0.33	1.2	6	12
Methyl ethyl ketone	78-93-3	0.12	100	100	500	1,000
Methyl tert-butyl ether	1634-04-4	0.93	62	100	500	1,000
Methylene chloride	75-09-2	0.05	51	100	500	1,000
n-Propylbenzene	103-65-1	3.9	100	100	500	1,000
sec-Butylbenzene	135-98-8	11	100	100	500	1,000
tert-Butylbenzene	98-06-6	5.9	100	100	500	1,000
Tetrachloroethene	127-18-4	1.3	5.5	19	150	300
Toluene	108-88-3	0.7	100	100	500	1,000
Trichloroethene	79-01-6	0.47	10	21	200	400
1,2,4-Trimethylbenzene	95-63-6	3.6	47	52	190	380
1,3,5- Trimethylbenzene	108-67-8	8.4	47	52	190	380
Vinyl chloride	75-01-4	0.02	0.21	0.9	13	27
Xylene (mixed)	1330-20-7	0.26	100	100	500	1,000

Notes

SCO:	Soil Cleanup Objectives presented in 6 New York State Department of Environmental Conservation Subpart 375
PCBs:	polychlorinated biphenyls
SVOCs:	semi-volatile organic compounds
VOCs:	volatile organic compounds

All values are in units of milligrams per kilogram (mg/kg).

Table F-3

PERMITTED DISPOSAL FACILITIES
SOIL SAMPLING REQUIREMENTS SUMMARY

Required Parameters/Methods for Soil Disposal to Hyland, Ontario, Seneca Meadows, and Model City Landfills:

1. Toxicity Characteristic Leaching Procedure (TCLP) Metals – Method SW-846-1311/SW-846-6010

    - Arsenic,
    - Barium,
    - Cadmium,
    - Chromium,
    - Lead, and
    - Silver.

Mercury by Method SW-846-1311/SW-846-7470
Selenium by Method SW-846-1311/SW-846-7740

2. TCLP Volatiles (VOCs) – Method SW-846-1311/SW-84-8260

    - Benzene,
    - Carbon Tetrachloride,
    - Chlorobenzene,
    - Chloroform,
    - 1,2, Dichloroethane,
    - 1,1 Dichloroethylene,
    - Methyl Ethyl Ketone,
    - Tetrachloroethylene,
    - Trichloroethylene, and
    - Vinyl Chloride.

3. TCLP Semi-Volatiles (SVOCs) (Base Neutral Compounds) – Method SW-846-1311/SW-846-8270

    - 1,4 Dichlorobenzene,
    - Hexachlorobenzene,
    - Hexachlorobutadiene,
    - Hexachloroethane,
    - Nitrobenzene,
    - Pyridine, and
    - 2,4-Dinitrotoluene

4. TCLP Semi-Volatiles (SVOCs) (Acid Compounds) – Method SW-846-1311/SW-846-8270\

   - o-Cresol,
   - m-Cresol,
   - p-Cresol,
   - Cresol (Total),
   - Pentachlorophenol,
   - 2,4,5-Trichlorophenol, and
   - 2,4,6-Trichlorophenol.

5. TCLP Herbicides – Method SW-846-1311/SW-846-8080

   - 2,4-D, and
   - 2,4,5-TP (Silvex).

6. TCLP Pesticides – Method SW-846-1311/SW-846-8080

   - Chlordane,
   - Endrin,
   - Heptachlor,
   - Lindane,
   - Methoxychlor, and
   - Toxaphene.

7. Other

   - PCBs (Total) by Method SW-846-8080,
   - pH by Method SW-846-9045,
   - Flashpoint by Method SW-846-C7,
   - Reactivity,
   - Corrosivity,
   - % Solids, and
   - Free Liquids by Method SW-846-9095

Number of Samples Required:

- Hyland, Ontario and Model City Landfills require one (1) composite soil sample for the estimated 570 tons of contaminated soil being disposed.

- Seneca Meadows requires two (2) composite soil samples for the estimated 570 tons of contaminated soil being disposed.

Table F-4

SOIL MANAGEMENT OBJECTIVES

SOUTHSIDE HIGH SCHOOL
ELMIRA CITY SCHOOL DISTRICT

Parameter	Soil Management Objectives [1] (ppm)
Metals (Composite Soil Samples):	
Antimony	NA
Arsenic	16
Barium	400
Beryllium	72
Cadmium	4.3
Chromium (hexavalent)	110
Chromium (trivalent)	180
Cobalt	NA
Copper	270
Total Cyanide	27
Lead	400
Manganese	2,000
Mercury	0.81
Nickel	310
Selenium	180
Silver	180
Zinc	10,000

NA = Not available.

(1) As provided in 6 NYCRR Part 375-6.8(b) – Restricted Residential Use, Protection of Health

PCBs/Pesticides (Composite Soil Samples):	
2,4,5-TP Acid (Silvex)	100
4,4'-DDE	8.9
4,4'-DDT	7.9
4,4'-DDD	13
Aldrin	0.097
alpha-BHC	0.48
beta-BHC	0.36
Chlordane (alpha)	4.2
delta-BHC	100
Dibenzofuran	59
Dieldrin	0.2
Endosulfan I	24
Endosulfan II	24
Endosulfan sulfate	24
Endrin	11
Heptachlor	2.1
Lindane	1.3
Polychlorinated biphenyls	1
SVOCs (Composite Soil Samples):	
Acenaphthene	100
Acenapthylene	100
Anthracene	100

NA = Not available.

(1) As provided in 6 NYCRR Part 375-6.8(b) – Restricted Residential Use, Protection of Health

Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	3.9
Chrysene	3.9
Dibenz(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	100
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol	100
Naphthalene	100
o-Cresol	100
p-Cresol	100
Pentachlorophenol	6.7
Phenanthrene	100
Phenol	100
Pyrene	100
VOCs (Grab Soil Samples Only):	
1,1,1-Trichloroethane	100
1,1-Dichloroethane	26
1,1-Dichloroethene	100
1,2-Dichlorobenzene	100
1,2-Dichloroethane	3.1

NA = Not available.

[1] As provided in 6 NYCRR Part 375-6.8(b) – Restricted Residential Use, Protection of Health

cis-1,2-Dichloroethene	100
trans-1,2-Dichloroethene	100
1,3-Dichlorobenzene	49
1,4-Dichlorobenzene	13
1,4-Dioxane	13
Acetone	100
Benzene	4.8
Butylbenzene	100
Carbon tetrachloride	2.4
Chlorobenzene	100
Chloroform	49
Ethylbenzene	41
Hexachlorobenzene	1.2
Methyl ethyl ketone	100
Methyl tert-butyl ether	100
Methylene chloride	100
n-Propylbenzene	100
sec-Butylbenzene	100
tert-Butylbenzene	100
Tetrachloroethene	19
Toluene	100
Trichloroethene	21
1,2,4-Trimethylbenzene	52

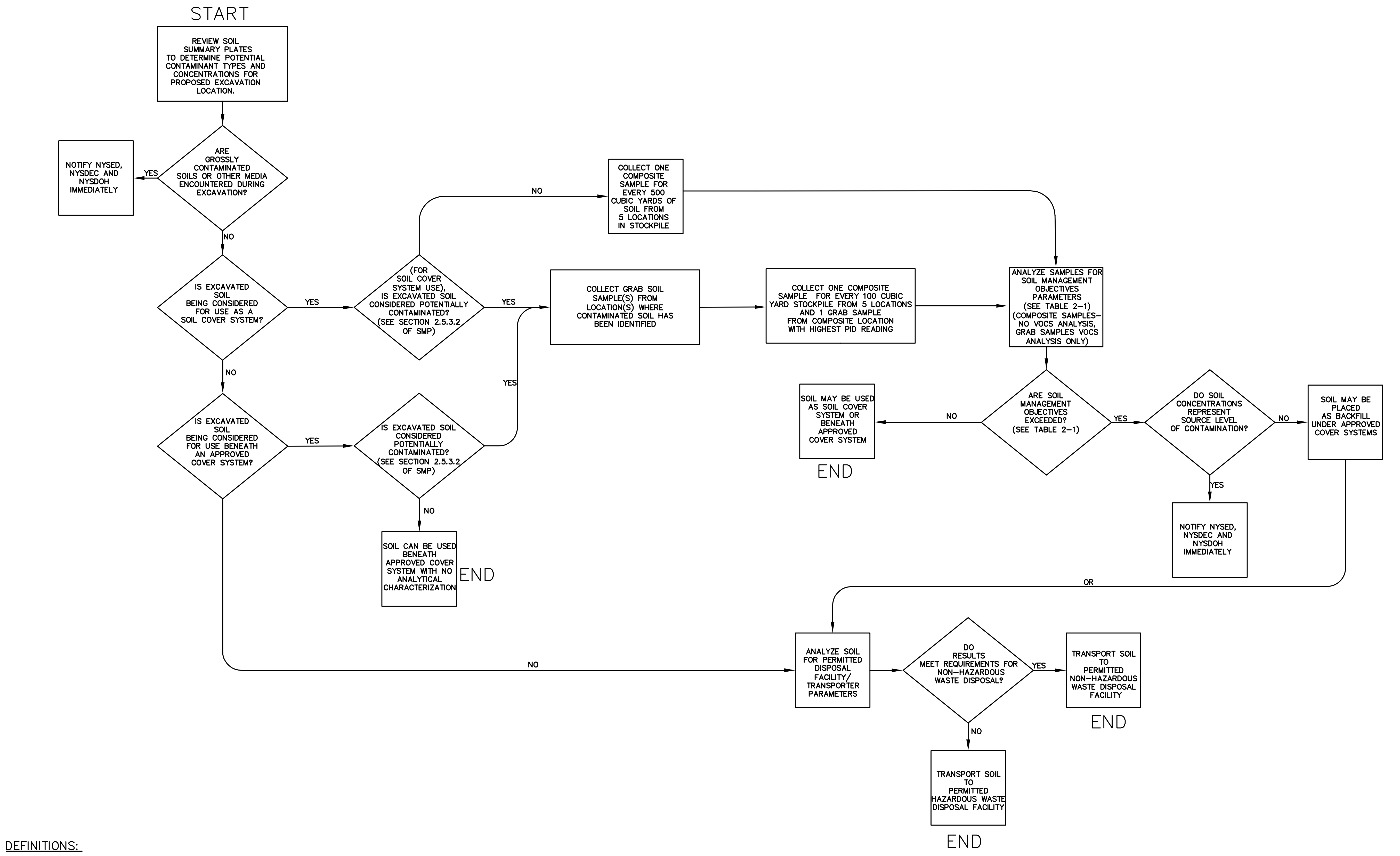
NA = Not available.

(1) As provided in 6 NYCRR Part 375-6.8(b) – Restricted Residential Use, Protection of Health

1,3,5-Trimethylbenzene	52
Vinyl chloride	0.9
Xylene (mixed)	100

NA = Not available.

(1) As provided in 6 NYCRR Part 375-6.8(b) – Restricted Residential Use, Protection of Health



DEFINITIONS:

APPROVED COVER SYSTEMS:
1) 2 FT. LAYER OF SOIL THAT DOES NOT EXCEED SOIL MANAGEMENT OBJECTIVES (SEE TABLE 2A)
2) 6" ASPHALT+CLEAN SUB-BASE MATERIAL LAYER
3) 6" CONCRETE+CLEAN SUB-BASE MATERIAL LAYER

SOURCE LEVEL OF CONTAMINATION–CONCENTRATION OF A CONTAMINANT IN A MEDIUM THAT IS SUFFICIENT TO MIGRATE IN THE MEDIUM OR TO RELEASE SIGNIFICANT LEVELS OF THE CONTAMINANT TO ANOTHER ENVIRONMENTAL MEDIUM, WHICH COULD RESULT IN A POTENTIAL EXPOSURE TO PUBLIC HEALTH OR THE ENVIRONMENT. (FROM NYCRR 375–1.2(AU))

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ◆ Latham, New York 12110

CHARACTERIZATION FLOWCHART
FOR EXCAVATED SOILS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA
CHEMUNG CO., N.Y.

PROJ. No.:	28014	DATE:	1–8–09	SCALE:		DWG. NO.	28014039	FIGURE	F-1

APPENDIX G – HEALTH AND SAFETY PLAN

Appendix B: Task Hazard Analyses

TASKS	
①Direct-Push Borings for Soil Sample Collection	⑤Stormwater Structure Inspection
②Hand Augering for Shallow Soil Sample Collection	⑥Sub-Slab HVS Sampling
③Monitoring Well Inspection and Synoptic Water Level Measurements	⑦
④Groundwater Sampling	⑧

THAs for these tasks are presented in the following pages.

Geosyntec consultants

PRE-WORK TASK HAZARD ANALYSIS (THA)

TASK/ACTIVITY:	DPT Borings for Soil Sample Collection	**Date:**	7/18/2014
Project Name:	Former Sperry Remington Site North	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Geosyntec Proj. Mngr.:**	Aron Krasnopoler
Project Address:	777 Sourth Main Street, Elmira, New York	**Geosyntec Proj. Dir.:**	Paul Brookner
Task Description:	Collect soil samples from 0 to 3 feet below ground surface via direct-push technology (DPT) for laboratory analyses		

A. SUMMARY OF SITE-SPECIFIC TASK HAZARD ANALYSIS

Site-Specific Comments:

Sub-Tasks, Activities	Hazards	Hazard Controls
Task 1: Mobilize to Site	-Driving -Mobilization to and around unfamiliar facility	- Drive carefully to facility, be well rested and avoid distracted driving. - Review scope of work.
Task 2: Locate Soil Sampling Locations and clear drilling locations for above-ground and underground utiliites. Locate sampling locations. Place pin flags at all sampling locations. Boring location will be documented by GPS.	-Slips/trips/falls -Heat/cold stress -Biohazards: snakes, bees, spider, ticks, poison ivy	-Pay close attention to foot placement; slow deliberate movement. -Dress for weather conditions. Apply sunscreen if needed. -Beaware of surroundings and avoid biohazards.
Task 3: Conduct DPT drilling and soil sampling	-Same hazards noted above for Task 2. -Drill Rig Hazards -Sharp edges on knife and on acetate sleeves used with DPT sampling. -Potential contaminant exposure: VOCs, PCBs, SVOCs	-Same hazard controls noted above for Task 2. -Before entering work area, don level D personal protective equipment (PPE). PPE will include: hard hat, safety glasses, safety vests, steel toe boots, nitrile gloves; and ear plugs or ear muffs. -Avoid being in close proximity to drilling rig. -Have a private utility locator clear each boring location for underground utiltities. -Avoid direct contact with contaminated matrices. -Pay close attention to the sharp edges and wear hand protection, such as leather gloves, if necessary.
Task 4: Sample Collection, Labeling and Packing Homogenize samples in decontaminated stainless steel or disposable mixing containers. Place the homogenized sample in the laboratory-supplied sample containers and label the bottles. Pack samples in cooler with ice and proper quality assurance samples.	-Potential contaminant exposure: VOCs, PCBs, SVOCs -Back strain when transporting coolers full of collected samples packed with ice.	-Continue to wear level D PPE and minimize contact with sample material. -Use proper lifting techniques. Get assistance when possible, especially for containers heavier than 49 lbs.
Task 5: Equipment Decontamination Decontaminate equipment that will be reused (e.g. hand auger, trowel, et. al.)	-Slips, Trips, and Falls -Hand injuries during handling of equipment. -Potential contaminant exposure: VOCs, PCBs, SVOCs -Splash hazards	-Pay close attention to foot placement; slow deliberate movement. -Pay close attention to the sharp edge of steel hand trowel to avoid cutting or other injuries of hands. -Continue to wear level D PPE and minimize contact with water.
Task 6: Demobilization Demobilize from Site, making sure all work areas are clean and orderly	-Driving	-Drive carefully and avoid distracted driving. If too exhausted to drive safely back to the office make arrangements to stay at hotel.

B. HEALTH AND SAFETY EQUIPMENT/GEAR

Site-Specific Comments:

☒	PERSONAL PROTECTIVE EQUIPMENT (PPE)**:**	Level(s) of Protection (for chemical hazards):	☐ Level D (standard work clothes, no chemical protective clothing) ☒ Modified Level D (chemical protective clothing in addition to standard work clothes) ☐ Level C (air purifying respirator or dust mask, with chemical protective clothing) ☐ Level B or A (air supplied respirator, chemical protective suit)

		☒ Hard-toed boots/shoes
		☒ Hardhat
		☒ Noise/hearing protection
		☒ High-visibility/reflective vest
		☒ Work gloves
		☒ Eye/face protection
		  ☒ Safety glasses with side shields
		  ☐ Goggles
		  ☐ Face shield
		  ☐ Other:
		☒ Chemical protective clothing
		  ☒ Gloves, type: Nitrile
		  ☐ Coveralls, type:
		  ☐ Outer boots, boot covers
		  ☐ Other:
			☐ Respiratory Protection
			  ☐ Disposable n-95 face mask
			  ☐ Half-face air-purifying respirator
			  ☐ Full-face air-purifying respirator
			  ☐ Resp-cartridge, type:
			  ☐ Other:
			☐ Personal flotation device
			☐ Personal fall apparatus
			☐ Fire retardant clothing
			☐ EH (Electrical Hazard) rated boots, gloves
			☐ Other:

☒	OTHER H&S EQUIPMENT and GEAR:	☒ Fire extinguisher ☒ Caution tape ☒ Traffic control warning devices ☐ Warning signs or placards ☐ Decon supplies for personal decon ☐ Portable ground fault circuit interrupter (GFCI)	☐ Lockout/tagout equipment ☐ Ventilation equipment (fan, blower) ☒ First aid kit ☒ Vehicle emergency kit (flares, lights, reflective device) ☐ Other:

C. AIR MONITORING – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments:

☒	INSTRUMENT(S), EQUIPMENT	☒ PID, Lamp energy: 10.6 eV ☐ FID ☐ Carbon monoxide detector ☐ Hydrogen sulfide detector ☐ Oxygen (O_2) detector	☐ Flammable gas (LEL) detector ☐ Particulate (dust) detector ☐ Calibration kit for each detector type ☐ Others:
☐	ACTION LEVELS FOR **O2/LEL**	☐ Oxygen	≤19.5% - provide ventilation to raise oxygen to acceptable levels, or utilize Level B. ≥23.0% - provide ventilation to lower oxygen to acceptable levels, or utilize Level B and implement controls for fire hazards, control ignition sources.
		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10% through passive dissipation, or active vapor control measures.

		Parameters	**Level D, Modified D**	**Use levels C or B, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D.**
☒	ACTION LEVELS FOR **TOXICS** (sustained breathing zone concentrations)	☒ VOCs	< 50 ppm	> 50 ppm: Stop work, evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls.
		☐ Carbon Monoxide	< 35 ppm	≥35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< mg/m^3	> mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
1. PREMISES/ENVIRONMENTAL HAZARDS		
Site-Specific Comments:		

☒	LOCATION HAZARDS
	☒ Outdoor field work
	  ☒ Urban, suburban
	  ☐ Rural, remote location
	☐ Indoor field work
	  ☐ Operating facility
	  ☐ Vacant facility
	☐ Water hazards
		☒ Use routine safety precautions commensurate with routine work environment conditions
		☐ For non-routine, unique, or severe location hazards, see site-specific safety comments above.
		☐ For water-related work, see #2, “Water Hazards”
		☐ For worksite violence/security risks, see #3, “Violence, Security, Working Alone”
		☒ For transportation related hazards, see #5, “Worksite Traffic, Vehicle, Transportation Hazards”
		☒ For utility-related hazards, see # 6, “Utility-Related Hazards
		☐ For atmospheric hazards in enclosed, indoor, or confined spaces, see # 11 “Confined Spaces or Hazardous Enclosed/Indoor Spaces”

	HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
☒	WALKING/WORKING SURFACES, HOUSEKEEPING ☒ Uneven, rough terrain, riprap ☒ Slippery surfaces ☐ Holes, pits, openings ☐ Puncture, foot hazards	☒ Keep work areas clean, orderly, dispose of trash/debris, maintain sanitary conditions. ☒ Walkways are cleared of equipment, excavated material, tools and debris, snow ☐ Holes, pits, openings to be covered or otherwise marked or guarded ☐ Apply absorbent, salt or sand, for traction/slip resistance on slippery/icy/wet surfaces ☒ Wear proper work boots/shoes with ankle support and/or traction, as appropriate for conditions
☒	TEMPERATURE/WEATHER ☒ Heat Stress ☒ Cold Stress ☒ Severe Weather ☒ Lightning	☒ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☒ Provide sufficient fluids, shade, breaks, other precautions as appropriate to adderss heat hazards. ☒ Provide protection from sun (sun screen, shaded brake area). ☐ For cold stress, wear multiple layers, protect from wind/wet, frequent break in warm location. ☐ In high wind, discontinue working at heights (e.g. on ladders, scaffold, aerial lift, similar). ☒ Use precautions for lightning, thunderstorm, hale, tornado (monitor weather, "30/30 rule," shelter)
☒	BIOLOGICAL HAZARDS ☒ Insects, spiders, ticks ☐ Wild/feral/pet animals ☐ Mold, fungi ☒ Poisonous plants ☐ Bird Guano ☐ Infectious, wastewater, sewer ☐ Bloodborne pathogens	☒ Utilize safety practices commensurate with risk of biting/stinging insects, wild/feral/pet animals. ☒ For poisonous plants (poison ivy/oak/sumac/etc.), minimize exposed skin area, wear coveralls, use barrier cream/wash (Technu products or similar), as appropriate. For biological exposure hazards, use protective measures commensurate with hazard: ☒ Minor-moderate hazard - use ordinary hygiene practices, protective gloves, hand washing. ☐ Moderate-severe hazard - add protective clothing, respirator, decon, as appropriate. ☐ Bloodborne pathogen (human infectious agents) - implement "Universal Precautions"
☒	HAZARDOUS NOISE	☒ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period, or intermittent….)
☐	OVERHEAD HAZARDS, FALLING OBJECTS	☐ Wear hardhat when exposed to overhead hazards, "bump" hazards, falling objects ☐ Cordon off hazard zones, route access/egress around hazards of falling objects ☐ Secure objects from falling ☐ Provide overhead protection (canopy) to protect public pedestrians, workers
☐	ILLUMINATION ☐ Night work ☐ Indoor work	☐ Make site-specific arrangements for illumination of work areas and access routes.

2. BOATING, WATER, WET LOCATIONS, FLOOD, ETC. – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	WATER HAZARDS ☐ Drowning, hypothermia ☐ Boat, barge, raft ☐ Wading, wetland, mud/silt ☐ Dam release, flood, tide ☐ Diving	☐ Wear appropriate Coast Guard-approved Personal Flotation Device (PFD) ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares) ☐ Use fuel safety practices, fire extinguisher present in boat ☐ See site-specific safety comments above.

3. VIOLENCE, PUBLIC PROTECTION, WORKING ALONE – SPECIAL MEASURES – CHECK IF NOT ANTICIPATED: ☒

Site-Specific Comments:

☐	PERSONAL SECURITY, HIGH CRIME AREA	☐ Employ standard precautions, which may include: conduct work only during daylight hours, use buddy system, avoid parking in secluded location, lock vehicles, hide valuable items in vehicles from plain view ☐ See site-specific safety comments above for project-specific security measures.
☐	PUBLIC AT RISK, SITE SECURITY	☐ Provide safe pedestrian route around work areas, use appropriate barriers, signs, warning devices. ☐ Provide covers over excavation, secure fencing, overnight protection ☐ Provide protection from overhead hazards (canopy, etc.) where public at risk of overhead hazards ☐ Provide secure locked storage of hazardous chemicals, hazardous equipment, etc.
☐	WORKING ALONE	☐ Establish "check in" procedure with supervisor or project manager (arrival, mid-day, departure) ☐ Additional measures, as appropriate for the working conditions.

4. DRIVING, TRAFFIC, TRANSPORTATION HAZARDS – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments:

☒	DRIVING HAZARDS ☒ Routine work travel ☐ Unfamiliar location ☐ Unfamiliar vehicle ☒ Overnight travel, distance	☒ Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, no texting, safe cell phone use, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☒ Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Familiarize yourself with vehicle operational controls before operating unfamiliar vehicle.

	HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
☒	WORKERS EXPOSED TO TRAFFIC HAZARDS ☒ In/near public or private roadway ☒ Parking lot, driveway ☐ Worksite, construction site traffic	☒ Workers to wear reflective vests where exposed to traffic hazards. ☒ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ DOT signal devices will be used to re-route vehicles around work area, site entrances/exits. ☐ Flaggers will be used and have DOT Flagger Training; police detail where appropriate or required. ☒ Park vehicles in secure location away from heavy equipment use or other site operations. ☐ Mark temporary roadways clearly, provide berms/stop logs where needed.
☐	RAILROAD/AIRPORT HAZARD	☐ Coordinate with rail company/airport and implement required safety measures ☐ Site workers to receive safety training for railroad/airport work.
☐	OFF-ROAD DRIVING, USE OF ALL-TERRAIN VEHICLE	☐ For off road driving, do not exceed capability of vehicle ☐ Follow ATV specific procedures for training, safety equipment, operation.
☐	TRANSPORTING MATERIALS, TOWING/HAULING LOADS	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
5. UTILITY-RELATED HAZARDS (for underground/overhead work) – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments: Be aware of piping for sprinkler system on football field.		
☒	OVERHEAD UTILITIES	☒ Maintain proper clearance, employ other appropriate precautions for the conditions.
☒	UNDERGROUND UTILITIES	☒ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.
6. ELECTRICAL HAZARDS – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	WORKERS EXPOSED TO: ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/Transformer	☐ Implement electrical safe work practices commensurate with the work to be performed, pertaining to the following (as applicable): - Worker training/qualification - Electrical equipment and hazards, safe design features - Electrical safe work practices - Grounding, use of GFCIs - Electrical equipment installation, operation, maintenance, repair - Arc flash protection - Electrical equipment diagnostics
☐	BASIC ELECTRICAL HAZARDS ☐ Equipment/tool use/operation ☐ Use of extension cords	☐ Control water-related hazards, in a manner appropriate for the job tasks/equipment/tool. ☐ Use extension cords/power cords properly, prevent damage, take out of service if damaged. ☐ Inspect tool/equipment/extension cords/power cords before each use. ☐ Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements ☐ Ensure live parts are guarded, enclosures secure. ☐ Enclosures, circuits properly labeled.
☐	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate “authorized” personnel, notify “affected” personnel
7. FALL HAZARDS – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments:		
☐	WORKING AT HEIGHTS ☐ Roof, skylight ☐ Elevated platform ☐ Holes, side opening ☐ Retaining wall, cliff, ledge ☐ Trench, excavation ☐ Protruding rebar	☐ Ensure guardrails present ☐ Use personal fall apparatus (PFA) ☐ Use tether or positioning device ☐ Restrict access to hazard (barriers, tape, sign) ☐ Ensure covers in place over holes ☐ Watch person ☐ Use fall protection net ☐ Restrict access beneath work to protect other site personnel from overhead hazards ☐ Install caps on protruding rebar
☐	LADDERS / STAIRS ☐ Extension ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs	☐ Provide instruction/review pertaining to safe ladder use ☐ Extension ladders are properly footed, secured, setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.

PRE-WORK TASK HAZARD ANALYSIS (THA)

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☐	AERIAL LIFT ☐ Scissor lift ☐ Extensible boom ☐ Articulated boom ☐ Vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use.
☐	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold	☐ Identify/coordinate operations with competent person ☐ Supported scaffold level, stable, proper attachments, tiebacks, planking, ☐ Suspended scaffolds anchored properly ☐ Guardrails present above 10 feet or personal fall apparatus used. ☐ Proper means of accessing scaffold (proper ladders, stair tower). ☐ Total height of free-standing scaffold not to exceed four times the minimum base dimension.
8. TOOLS, EQUIPMENT, MACHINERY – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments:		
☒	HAND TOOLS Eye injury, puncture/bruise/ laceration hazard	☒ Use proper tool for the job, maintain tools in good condition (no damage, cutting tools sharp, etc.) use appropriate PPE for hand/eye/body protection, plan for safe "follow through" motion, use vise/clamp/work surface to hold/stabilize work piece
☐	POWER TOOLS ☐ Eye/hand/body injury ☐ Fuel-related hazards ☐ Inhalation hazard ☐ Noise ☐ Sparks, heat, fire hazard ☐ Electrical hazards	☐ For all power tools: - Inspect tools to ensure safe operating condition before each use. - Use tool in accordance with manufacturer's specifications. - Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection - Provide training or verify operator qualification for use of power tool. - Stay clear of hazard zone, "line of fire" when working near where power tools are used. ☐ Use safety practices for refueling, fuel handling/transport/storage. ☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. ☐ For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. ☐ For electrical hazards, see # 6, "Electrical Hazards".
☐	WELDING, CUTTING ☐ Gas welding/cutting ☐ Arc welding/cutting	☐ Hot work permit system to be implemented. ☐ Operator properly protected (eye protection, clothing, apron, etc.) ☐ Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles) ☐ Protect nearby personnel from hazardous UV, IR light (shielding, curtain) ☐ Electrical safe work practices for arc welding ☐ Gas cylinder safe practices (secured, upright, caps on when not in use, prevent damage).
☒	EQUIPMENT/MACHINERY ☒ Point-of-operation hazards ☒ Pinch points, moving parts ☒ 'Struck-by,' 'caught between' ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☒ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Compressed air/gas ☐ Kinetic, stored energy ☒ Noise ☐ Lockout/tagout ☒ Emissions, discharge gases ☐ Working at heights, falls ☐ Lifting, repetitive motion ☐ Illumination ☐ Electrical (see below)	☒ *Working Near* Equipment/Machinery ☒ Work at safe distance/restrict access, ensure guards in place, heed warning signs ☒ Implement measures necessary for adequate illumination ☒ Control exposue to emission/discharge gases (ventilation, PPE, other means). ☒ Ensure safe practices for fuels/fluids/machine-related hazardous materials ☒ Use PPE or other safety practices for eye/hearing/hand/head/body protection ☒ Segregate combustible materials from hot surfaces/hot exhaust (minimum 3 feet) ☐ Operation/Maintenance/Repair of Equipment/Machinery (see applicable control measures above) ☐ Orient/locate equipment for safe access during operation and maintenance ☐ Use equipment/machinery in accordance with manufacturer's specifications ☐ Use safe lifting practices, minimize repetitive motion hazards ☐ Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices ☐ Secure long hair/loose clothing/hanging jewelry near moving/rotating parts ☐ Ensure appropriate warning signs are in place and heeded ☐ Use safe practices for fueling, fuel transport & storage. ☐ Operate fuel-powered equipment in well ventilated location. ☐ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy ☐ Implement control-of-hazardous-energy practices (lockout/tagout), designate "authorized" personnel, notify "affected" personnel ☐ Protect from fall hazards (safe ladder use, personal fall protection, guardrails, other) ☐
☐	ELECTRICAL HAZARDS	☐ Implement provisions of # 6, "Electrical Hazards"
9. MANUAL MATERIAL HANDLING, MATERIAL STORAGE – CHECK IF NOT APPLICABLE: ☐		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
Site-Specific Comments: Drum Handling and Sample Coolers		
☒	LIFTING / ERGONOMIC Musculoskeletal strain, repetitive motion injury	☒ Use proper manual lifting techniques (straight back, bend at knees, firm grasp, firm footing). ☒ Seek assistance for lifting heavy objects (>50 lbs.) ☐ Use mechanical lifting equipment to reduce manual material handling hazard ☒ For repetitive motion activities, take breaks, switch hands, share task with others, employ other safe practices appropriate for the specific task(s).
☐	STORAGE OF MATERIALS See Sect. 12 for Chemical Storage	☐ Store materials in stable manner that prevents tipping, sliding, rolling, falling over. ☐ Materials stored in tiers to be stacked, racked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse ☐ Do not exceed load limits of racks, platform; ensure racks are stable, robust, secure ☐ On scaffold, do not store materials in excess of supplies needed for immediate use ☐ Ensure stored materials do not block aisles, passageways ☐ For used lumber, remove nails before stacking, and stack to be stable and self supporting, no higher than 20 feet (or 16 feet if lumber is to be handled manually) ☐ Debris will be removed regularly from storage area and place in designated area or disposed.
10. CONSTRUCTION OPERATIONS, HEAVY EQUIPMENT, HEAVY VEHICLES – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments: DPT Drilling Rig		
☒	HEAVY EQUIPMENT; CONSTRUCTION VEHICLES Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	☒ Trained/qualified persons operate all heavy equipment. ☒ No passengers on moving/operating equipment except where passenger seat/restraint is present. ☒ Equipment inspected upon mobilization and daily; maintained in good repair, backup alarms ☐ All leaks or defective safety equipment will be repaired before use. ☒ Operators required to use seatbelts. ☒ Eye contact with operator and use of hand signals prior to approaching near equipment. ☒ High visibility vests are required of all personnel in work area. ☒ Max. safe slope for each vehicle will be followed. ☒ Personnel to stay clear of swing radius of equipment. ☒ Spill equipment available for fuel and hydraulic fluid leaks. ☒ Equipment locked, secured, brakes set, buckets/forks lowered, when not in use.
☐	CRANES Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed by crane operator. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a dedicated channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to high winds. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Crane to be on level, stable base, dunnage used when necessary. ☐ Total weight of load not to exceed 50% of rated capacity for the crane radius and configuration. ☐ Rigging procedures – see Hoisting, Lifting, Rigging, below. ☐ Suspended personnel lifting is prohibited (unless per approved “man-lift” equipment). ☐ No personnel permitted beneath suspended loads.
☐	HOISTING, LIFTING, RIGGING ☐ Crane ☐ Drill rig ☐ Loader, excavator, etc. ☐ Mechanical, electrical hoist	☐ Identify, coordinate with competent person. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. ☐ Do not exceed loading limits of equipment. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane hooks will be equipped with safety latches.
☐	FORKLIFT Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Qualified operater, per established forklift training (certificate is required) ☐ Equipment inspected daily and documented on Forklift Preoperation Inspection Checklist ☐ Operators required to use seatbelts, and adhere to safe operating procedures.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		☐ Do not exceed lifting load limits. ☐ Forklift shall not be moved/driven with empty forks in raised position. ☐ When not in use, forks lowered, brake set, controls in neutral, key removed.
☐	EXCAVATION/TRENCHING ☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Overhead utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Activities under supervision/oversight of competent person ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Implement underground utility clearance procedures. ☐ Hand digging within 3' of utility locations. ☐ Excavations to be protected by perimeter fencing (not barricade tape) ☐ Use trench boxes in accordance with proper procedures. ☐ Workers in trenches to be within 25 feet of ladder or sloped entryway.
☒	DRILLING ☒ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☒ Underground utilities, aboveground ☒ Spills ☒ See Equipment/Machinery	☒ Contractor inspects drill rig daily before use. ☒ Drill rig equipped with operational emergency stop. ☒ Highpressure lines equipped with whip checks. ☒ High visibility vests, hard hats are being worn near the equipment. ☒ Operators and helpers will maintain a safe distance to moving parts. Individuals working near moving or rotating parts will secure loose hair, clothing, and equipment. ☒ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☒ Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. ☒ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig. ☒ Follow underground utility clearance procedures. ☒ Area is surveyed for overhead utilities, safe clearance distance maintained. ☒ Hearing protection is used when working near the rig. ☒ Spill equipment is available for fuel and hydraulic fluid leaks.
☐	DEMOLITION	☐ Develop/implement demolition safety plan
☐	BLASTING	☐ Develop/implement blasting safety plan
11. CONFINED SPACES, HAZARDOUS ENCLOSED or INDOOR SPACES – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	CONFINED SPACE(S) ☐ Permit required ☐ Non-permit required Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	☐ For personnel working near confined spaces: - Confined spaces have been identified, labeled. - Communication system in place to prevent unauthorized entry. ☐ For permit-required confined space entry, see separate entry permit. - All entrants, attendants, supervisors are trained/qualified. - Hazards properly characterized - Necessary equipment for safe entry utilized (access, retrieval, air monitoring) - Arrangements for rescue team have been made. ☐ For entry into a non-permit confined space, see site specific procedures delineated above in "site-specific comments," or see alternate/attached safety work plan.
☐	ENCLOSED/INDOOR SPACE(S) ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/Sub-basement ☐ Crawl space entry ☐ Indoor equipment/drilling	*For indoor use of gasoline/propane/diesel equipment:* ☐ Duct exhaust to outdoors, and/or introduce fresh air using ventilation/blowers/fans. ☐ Perform air monitoring (see section on Air Monitoring) *For entry into potentially hazardous indoor or enclosed spaces:* ☐ Ventilate and/or perform air monitoring for anticipated hazards. ☐ If space classified as confined space, follow confined space entry requirements (above).
12. COMMERCIAL CHEMICAL PRODUCTS USED AT WORK SITE – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments: Alconox, Isopropyl Alcohol, Nitric Acid, etc.		

	HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
☒	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☒ Safety Data Sheets available, either on site or readily available within same work shift ☒ Containers labelled properly ☒ Workers trained on hazards ☒ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☒	COMPRESSED GAS(ES): Isosbutylene Calibration Gas for PID	☒ Secure cylinders upright, caps on when not in use, handle with care, prevent damage ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench ☐ Store/use in a manner to prevent asphyxiation hazard ☐ Segregate oxygen and fuel gases by distance (20') or barrier ☐ Control ignition sources, no smoking signage ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	FLAMM./COMBUST. LIQ.	☐ Proper storage (flam. storage cabinets, other storage precautions) ☐ Control ignition sources ☐ Grounding and bonding where appropriate
☐	CORROSIVES	☐ Handle with care, use appropriate eye/face/skin protection ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate
☐	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption; use PPE as appropriate, conduct air monitoring as appropriate.
☐	CHEMICAL STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar ☐ Incompatible chemicals segregated ☐ Secondary containment ☐ Safety equipment will be located near chemical storage.

13. CHEMICAL HAZARDS FROM ON-SITE CONTAMINANTS, OPERATIONS, EMISSIONS – CHECK IF N/A: ☐

Site-Specific Comments:

CHECK AS APPROPRIATE BELOW. PROVIDE ADDITIONAL INFO. AS APPROPRIATE, IN SITE-SPECIFIC HAZARD ANALYSIS ABOVE.

☒ Soil/groundwater contaminants (historical release)
☐ Recent release, known high concentrations
☐ Former chemical disposal site, landfill
☐ Urban fill, residual contaminants
☐ Containerized waste (drums, process equipment)
☐ Buried drums (known or potential)
☐ Large containers, potential for spills
☐ Emissions from active industrial processes
☐ Emissions from welding/cutting/hot work
☐ Carbon monoxide (vehicle/equipment exhaust)
☐ Contaminated building surfaces
☐ Unexploded ordnance
☐ Explosive dust

☐ Oxygen deficiency
☒ Chlorinated VOCs (volatile org. cpds.)
☒ BTEX, petroleum derived VOCs
☐ Fuel oils, petroleum, waste oil, lubricants
☒ Metals, metal compounds, metal dusts
☐ Elemental mercury
☒ Polyaromatic hydrocarbons (PAHs)
☒ Polychlorinated biphenyls (PCBs)
☐ Potential for flammable vapors
☐ Potential for flammable gas (methane)
☐ Corrosive, acids/caustics, strong irritants
☐ Sulfides, hydrogen sulfide (H2S)
☐ Cyanides, hydrogen cyanide (HCN)

☐ Asbestos
☐ Lead paint
☐ Pesticides, herbicides, fungicides
☐ Sensitizers
☐ Radioactive contaminants
☐ Other:

☐ FOR SITE REGULATED AS "UNCONTROLLED HAZ. WASTE SITE," e.g. **REGULATED BY HAZWOPER** (OSHA 29 CFR 1910.120)

- Establish work zones & site control plan (Exclusion Zone - EZ, Contaminant Reduction Zone - CRZ, Support Zone - SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field expience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program.
- "Peripheral" site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection through engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination, spill containment (see Sections B and C, "Health and Safety Equipment/Gear" and "Air Monitoring"
- Include emergency response program in H&S plan.

☒ FOR SITE WITH CHEMICAL CONTAMINANTS BUT **NOT REGULATED BY HAZWOPER**

- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard
- Implement appropriate controls to minimize worker exposure (engineering controls, work practices) to levels below OSHA PELs.
- Use PPE as needed (see B, "Health and Safety Equipment/Gear").
- Conduct air monitoring or personal air sampling to monitor and/or evaluate worker exposure (see Section C, "Air Monitoring").

	HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
☐	ATMOSPHERIC HAZARDS GENERATED BY EXHAUST FROM OPERATING EQUIPMENT	☐ Position work upwind of exhaust source ☐ Use blowers, fans to dissipate atmospheric hazards ☐ Conduct air monitoring (see Section C, "Air Monitoring").
☐	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring is not anticipated with the current scope of work. ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

EMERGENCY RESPONSE **(911 Service is Available ☒ Yes ☐ No)** ☒ Verify wireless coverage at site, use alternate communication procedures as needed.

Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph's Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Urgent Care Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067

Emergency Response Comments:

Date:	
Project Name: Former Sperry Remington Site North	
THA Title: DPT Borings for Soil Sample Collection	
Subcontractor Name(s):	
Geosyntec Representative (reviewed by):	**Michael Hansen**
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

PRE-WORK TASK HAZARD ANALYSIS (THA)

TASK/ACTIVITY:	Hand Augering for Shallow Soil Sample Collection	**Date:**	7/18/2014
Project Name:	Former Sperry Remington Site North	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Geosyntec Proj. Mngr.:**	Aron Krasnopoler
Project Address:	777 Sourth Main Street, Elmira, New York	**Geosyntec Proj. Dir.:**	Paul Brookner
Task Description:	Collect surface soil samples from 0 to 2 inches below ground surface via hand augering for laboratory analyses		

A. SUMMARY OF SITE-SPECIFIC TASK HAZARD ANALYSIS

Site-Specific Comments:

Sub-Tasks, Activities	Hazards	Hazard Controls
Task 1: Mobilize to Site	-Driving -Mobilization to and around unfamiliar facility	- Drive carefully to facility, be well rested and avoid distracted driving. - Review scope of work.
Task 2: Locate Soil Sampling Locations Locate sampling locations. Place pin flags at all sampling locations. Boring location will be documented by GPS.	-Slips/trips/falls -Heat/cold stress -Biohazards: snakes, bees, spider, ticks, poison ivy	-Pay close attention to foot placement; slow deliberate movement. -Dress for weather conditions. Apply sunscreen if needed. -Beaware of surroundings and avoid biohazards.
Task 3: Surface Soil Sampling A decontaminated stainless steel hand auger or hand trowel will be used to collect each near surface soil sample.	-Same hazards noted above for Task 2. -Potential hand and back injuries. -Potential contaminant exposure: VOCs, PCBs, SVOCs	-Same hazard controls noted above for Task 2. -Before entering work area, don level D personal protective equipment (PPE). PPE will include: hard hat, safety glasses, safety vests, steel toe boots, nitrile gloves, and ear plugs or ear muffs. -Wear leather work gloves and safety glasses. -Avoid direct contact with contaminated matrices. -Pay close attention to the sharp edge of steel hand trowel to avoid cutting or other injuries to hands.
Task 4: Sample Collection, Labeling and Packing Homogenize samples in decontaminated stainless steel or disposable mixing containers. Place the homogenized sample in the laboratory-supplied sample containers and label the bottles. Pack samples in cooler with ice and proper quality assurance samples.	-Potential contaminant exposure: VOCs, PCBs, SVOCs -Back strain when transporting coolers full of collected samples packed with ice.	-Continue to wear level D PPE and minimize contact with sample material. -Use proper lifting techniques. Get assistance when possible, especially for containers heavier than 49 lbs.
Task 5: Equipment Decontamination Decontaminate equipment that will be reused (e.g. hand auger, trowel, et. al.)	-Slips, Trips, and Falls -Hand injuries during handling of equipment. -Potential contaminant exposure: VOCs, PCBs, SVOCs -Splash hazards	-Pay close attention to foot placement; slow deliberate movement. -Pay close attention to the sharp edge of steel hand trowel to avoid cutting or other injuries of hands. -Continue to wear level D PPE and minimize contact with water.
Task 6: Demobilization Demobilize from Site, making sure all work areas are clean and orderly	-Driving	-Drive carefully and avoid distracted driving. If too exhausted to drive safely back to the office make arrangements to stay at hotel.

B. HEALTH AND SAFETY EQUIPMENT/GEAR

Site-Specific Comments:

☒	PERSONAL PROTECTIVE EQUIPMENT (PPE):	Level(s) of Protection (for chemical hazards):	☐ Level D (standard work clothes, no chemical protective clothing) ☒ Modified Level D (chemical protective clothing in addition to standard work clothes) ☐ Level C (air purifying respirator or dust mask, with chemical protective clothing) ☐ Level B or A (air supplied respirator, chemical protective suit)

		☒ Hard-toed boots/shoes
		☒ Hardhat
		☐ Noise/hearing protection
		☒ High-visibility/reflective vest
		☒ Work gloves, leather
		☒ Eye/face protection
		  ☒ Safety glasses with side shields
		  ☐ Goggles
		  ☐ Face shield
		  ☐ Other:
		☒ Chemical protective clothing
		  ☒ Gloves, type: Nitrile
		  ☐ Coveralls, type:
		  ☐ Outer boots, boot covers
		  ☐ Other:
			☐ Respiratory Protection
			  ☐ Disposable n-95 face mask
			  ☐ Half-face air-purifying respirator
			  ☐ Full-face air-purifying respirator
			  ☐ Resp-cartridge, type:
			  ☐ Other:
			☐ Personal flotation device
			☐ Personal fall apparatus
			☐ Fire retardant clothing
			☐ EH (Electrical Hazard) rated boots, gloves
			☐ Other:

☒	OTHER H&S EQUIPMENT and GEAR:	☒ Fire extinguisher ☐ Caution tape ☒ Traffic control warning devices ☐ Warning signs or placards ☐ Decon supplies for personal decon ☐ Portable ground fault circuit interrupter (GFCI)	☐ Lockout/tagout equipment ☐ Ventilation equipment (fan, blower) ☒ First aid kit ☒ Vehicle emergency kit (flares, lights, reflective device) ☐ Other:

C. AIR MONITORING – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	INSTRUMENT(S), EQUIPMENT	☐ PID, Lamp energy: eV ☐ FID ☐ Carbon monoxide detector ☐ Hydrogen sulfide detector ☐ Oxygen (O_2) detector	☐ Flammable gas (LEL) detector ☐ Particulate (dust) detector ☐ Calibration kit for each detector type ☐ Others:

☐	ACTION LEVELS FOR **O2/LEL**	☐ Oxygen	≤19.5% - provide ventilation to raise oxygen to acceptable levels, or utilize Level B. ≥23.0% - provide ventilation to lower oxygen to acceptable levels, or utilize Level B and implement controls for fire hazards, control ignition sources.
		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10% through passive dissipation, or active vapor control measures.

☐	ACTION LEVELS FOR **TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D**	**Use levels C or B, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D.**
		☐ VOCs	< ppm	ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)
		☐ Carbon Monoxide	< 35 ppm	≥35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< mg/m^3	> mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
1. PREMISES/ENVIRONMENTAL HAZARDS		
Site-Specific Comments:		

☒	LOCATION HAZARDS
	☒ Outdoor field work
	  ☒ Urban, suburban
	  ☐ Rural, remote location
	☐ Indoor field work
	  ☐ Operating facility
	  ☐ Vacant facility
	☐ Water hazards
		☒ Use routine safety precautions commensurate with routine work environment conditions
		☐ For non-routine, unique, or severe location hazards, see site-specific safety comments above.
		☐ For water-related work, see #2, "Water Hazards"
		☐ For worksite violence/security risks, see #3, "Violence, Security, Working Alone"
		☒ For transportation related hazards, see #5, "Worksite Traffic, Vehicle, Transportation Hazards"
		☒ For utility-related hazards, see # 6, "Utility-Related Hazards
		☐ For atmospheric hazards in enclosed, indoor, or confined spaces, see # 11 "Confined Spaces or Hazardous Enclosed/Indoor Spaces"

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☒	WALKING/WORKING SURFACES, HOUSEKEEPING ☒ Uneven, rough terrain, riprap ☒ Slippery surfaces ☐ Holes, pits, openings ☐ Puncture, foot hazards	☒ Keep work areas clean, orderly, dispose of trash/debris, maintain sanitary conditions. ☒ Walkways are cleared of equipment, excavated material, tools and debris, snow ☐ Holes, pits, openings to be covered or otherwise marked or guarded ☐ Apply absorbent, salt or sand, for traction/slip resistance on slippery/icy/wet surfaces ☒ Wear proper work boots/shoes with ankle support and/or traction, as appropriate for conditions
☒	TEMPERATURE/WEATHER ☒ Heat Stress ☒ Cold Stress ☒ Severe Weather ☒ Lightning	☒ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☒ Provide sufficient fluids, shade, breaks, other precautions as appropriate to adderss heat hazards. ☒ Provide protection from sun (sun screen, shaded brake area). ☐ For cold stress, wear multiple layers, protect from wind/wet, frequent break in warm location. ☐ In high wind, discontinue working at heights (e.g. on ladders, scaffold, aerial lift, similar). ☒ Use precautions for lightning, thunderstorm, hale, tornado (monitor weather, "30/30 rule," shelter)
☒	BIOLOGICAL HAZARDS ☒ Insects, spiders, ticks ☐ Wild/feral/pet animals ☐ Mold, fungi ☒ Poisonous plants ☐ Bird Guano ☐ Infectious, wastewater, sewer ☐ Bloodborne pathogens	☒ Utilize safety practices commensurate with risk of biting/stinging insects, wild/feral/pet animals. ☒ For poisonous plants (poison ivy/oak/sumac/etc.), minimize exposed skin area, wear coveralls, use barrier cream/wash (Technu products or similar), as appropriate. For biological exposure hazards, use protective measures commensurate with hazard: ☒ Minor-moderate hazard - use ordinary hygiene practices, protective gloves, hand washing. ☐ Moderate-severe hazard - add protective clothing, respirator, decon, as appropriate. ☐ Bloodborne pathogen (human infectious agents) - implement "Universal Precautions"
☐	HAZARDOUS NOISE	☐ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period, or intermittent….)
☐	OVERHEAD HAZARDS, FALLING OBJECTS	☐ Wear hardhat when exposed to overhead hazards, "bump" hazards, falling objects ☐ Cordon off hazard zones, route access/egress around hazards of falling objects ☐ Secure objects from falling ☐ Provide overhead protection (canopy) to protect public pedestrians, workers
☐	ILLUMINATION ☐ Night work ☐ Indoor work	☐ Make site-specific arrangements for illumination of work areas and access routes.

2. BOATING, WATER, WET LOCATIONS, FLOOD, ETC. – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	WATER HAZARDS ☐ Drowning, hypothermia ☐ Boat, barge, raft ☐ Wading, wetland, mud/silt ☐ Dam release, flood, tide ☐ Diving	☐ Wear appropriate Coast Guard-approved Personal Flotation Device (PFD) ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares) ☐ Use fuel safety practices, fire extinguisher present in boat ☐ See site-specific safety comments above.

3. VIOLENCE, PUBLIC PROTECTION, WORKING ALONE – SPECIAL MEASURES – CHECK IF NOT ANTICIPATED: ☒

Site-Specific Comments:

☐	PERSONAL SECURITY, HIGH CRIME AREA	☐ Employ standard precautions, which may include: conduct work only during daylight hours, use buddy system, avoid parking in secluded location, lock vehicles, hide valuable items in vehicles from plain view ☐ See site-specific safety comments above for project-specific security measures.
☐	PUBLIC AT RISK, SITE SECURITY	☐ Provide safe pedestrian route around work areas, use appropriate barriers, signs, warning devices. ☐ Provide covers over excavation, secure fencing, overnight protection ☐ Provide protection from overhead hazards (canopy, etc.) where public at risk of overhead hazards ☐ Provide secure locked storage of hazardous chemicals, hazardous equipment, etc.
☐	WORKING ALONE	☐ Establish "check in" procedure with supervisor or project manager (arrival, mid-day, departure) ☐ Additional measures, as appropriate for the working conditions.

4. DRIVING, TRAFFIC, TRANSPORTATION HAZARDS – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments:

☒	DRIVING HAZARDS ☒ Routine work travel ☐ Unfamiliar location ☐ Unfamiliar vehicle ☒ Overnight travel, distance	☒ Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, no texting, safe cell phone use, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☒ Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Familiarize yourself with vehicle operational controls before operating unfamiliar vehicle.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)	
☒	WORKERS EXPOSED TO TRAFFIC HAZARDS ☒ In/near public or private roadway ☒ Parking lot, driveway ☐ Worksite, construction site traffic	☒ Workers to wear reflective vests where exposed to traffic hazards. ☒ Where possible, park vehicles as protective shield from oncoming traffic. ☒ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ DOT signal devices will be used to re-route vehicles around work area, site entrances/exits. ☐ Flaggers will be used and have DOT Flagger Training; police detail where appropriate or required. ☒ Park vehicles in secure location away from heavy equipment use or other site operations. ☐ Mark temporary roadways clearly, provide berms/stop logs where needed.	
☐	RAILROAD/AIRPORT HAZARD	☐ Coordinate with rail company/airport and implement required safety measures ☐ Site workers to receive safety training for railroad/airport work.	
☐	OFF-ROAD DRIVING, USE OF ALL-TERRAIN VEHICLE	☐ For off road driving, do not exceed capability of vehicle ☐ Follow ATV specific procedures for training, safety equipment, operation.	
☐	TRANSPORTING MATERIALS, TOWING/HAULING LOADS	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.	
5. UTILITY-RELATED HAZARDS (for underground/overhead work) – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	OVERHEAD UTILITIES	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.	
☐	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.	
6. ELECTRICAL HAZARDS – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	WORKERS EXPOSED TO: ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/Transformer	☐ Implement electrical safe work practices commensurate with the work to be performed, pertaining to the following (as applicable): - Worker training/qualification - Electrical equipment and hazards, safe design features - Electrical safe work practices - Grounding, use of GFCIs - Electrical equipment installation, operation, maintenance, repair - Arc flash protection - Electrical equipment diagnostics	
☐	BASIC ELECTRICAL HAZARDS ☐ Equipment/tool use/operation ☐ Use of extension cords	☐ Control water-related hazards, in a manner appropriate for the job tasks/equipment/tool. ☐ Use extension cords/power cords properly, prevent damage, take out of service if damaged. ☐ Inspect tool/equipment/extension cords/power cords before each use. ☐ Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements ☐ Ensure live parts are guarded, enclosures secure. ☐ Enclosures, circuits properly labeled.	
☐	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel	
7. FALL HAZARDS – CHECK IF NOT ANTICIPATED: ☒			
Site-Specific Comments:			
☐	WORKING AT HEIGHTS ☐ Roof, skylight ☐ Elevated platform ☐ Holes, side opening ☐ Retaining wall, cliff, ledge ☐ Trench, excavation ☐ Protruding rebar	☐ Ensure guardrails present ☐ Use personal fall apparatus (PFA) ☐ Use tether or positioning device ☐ Restrict access to hazard (barriers, tape, sign) ☐ Ensure covers in place over holes ☐ Watch person	☐ Use fall protection net ☐ Restrict access beneath work to protect other site personnel from overhead hazards ☐ Install caps on protruding rebar
☐	LADDERS / STAIRS ☐ Extension ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs	☐ Provide instruction/review pertaining to safe ladder use ☐ Extension ladders are properly footed, secured, setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.	

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☐	AERIAL LIFT ☐ Scissor lift ☐ Extensible boom ☐ Articulated boom ☐ Vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use.
☐	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold	☐ Identify/coordinate operations with competent person ☐ Supported scaffold level, stable, proper attachments, tiebacks, planking, ☐ Suspended scaffolds anchored properly ☐ Guardrails present above 10 feet or personal fall apparatus used. ☐ Proper means of accessing scaffold (proper ladders, stair tower). ☐ Total height of free-standing scaffold not to exceed four times the minimum base dimension.
8. TOOLS, EQUIPMENT, MACHINERY – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments:		
☒	HAND TOOLS Eye injury, puncture/bruise/ laceration hazard	☒ Use proper tool for the job, maintain tools in good condition (no damage, cutting tools sharp, etc.) use appropriate PPE for hand/eye/body protection, plan for safe “follow through” motion, use vise/clamp/work surface to hold/stabilize work piece
☐	POWER TOOLS ☐ Eye/hand/body injury ☐ Fuel-related hazards ☐ Inhalation hazard ☐ Noise ☐ Sparks, heat, fire hazard ☐ Electrical hazards	☐ For all power tools: - Inspect tools to ensure safe operating condition before each use. - Use tool in accordance with manufacturer’s specifications. - Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection - Provide training or verify operator qualification for use of power tool. - Stay clear of hazard zone, “line of fire” when working near where power tools are used. ☐ Use safety practices for refueling, fuel handling/transport/storage. ☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. ☐ For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. ☐ For electrical hazards, see # 6, “Electrical Hazards”.
☐	WELDING, CUTTING ☐ Gas welding/cutting ☐ Arc welding/cutting	☐ Hot work permit system to be implemented. ☐ Operator properly protected (eye protection, clothing, apron, etc.) ☐ Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles) ☐ Protect nearby personnel from hazardous UV, IR light (shielding, curtain) ☐ Electrical safe work practices for arc welding ☐ Gas cylinder safe practices (secured, upright, caps on when not in use, prevent damage).
☐	EQUIPMENT/MACHINERY ☐ Point-of-operation hazards ☐ Pinch points, moving parts ☐ ‘Struck-by,’ ‘caught between’ ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☐ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Compressed air/gas ☐ Kinetic, stored energy ☐ Noise ☐ Lockout/tagout ☐ Emissions, discharge gases ☐ Working at heights, falls ☐ Lifting, repetitive motion ☐ Illumination ☐ Electrical (see below)	☐ *Working Near* Equipment/Machinery ☐ Work at safe distance/restrict access, ensure guards in place, heed warning signs ☐ Implement measures necessary for adequate illumination ☐ Control exposue to emission/discharge gases (ventilation, PPE, other means). ☐ Ensure safe practices for fuels/fluids/machine-related hazardous materials ☐ Use PPE or other safety practices for eye/hearing/hand/head/body protection ☐ Segregate combustible materials from hot surfaces/hot exhaust (minimum 3 feet) ☐ Operation/Maintenance/Repair of Equipment/Machinery (see applicable control measures above) ☐ Orient/locate equipment for safe access during operation and maintenance ☐ Use equipment/machinery in accordance with manufacturer’s specifications ☐ Use safe lifting practices, minimize repetitive motion hazards ☐ Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices ☐ Secure long hair/loose clothing/hanging jewelry near moving/rotating parts ☐ Ensure appropriate warning signs are in place and heeded ☐ Use safe practices for fueling, fuel transport & storage. ☐ Operate fuel-powered equipment in well ventilated location. ☐ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy ☐ Implement control-of-hazardous-energy practices (lockout/tagout), designate “authorized” personnel, notify “affected” personnel ☐ Protect from fall hazards (safe ladder use, personal fall protection, guardrails, other) ☐
☐	ELECTRICAL HAZARDS	☐ Implement provisions of # 6, “Electrical Hazards”
9. MANUAL MATERIAL HANDLING, MATERIAL STORAGE – CHECK IF NOT APPLICABLE: ☐		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
Site-Specific Comments:		
☒	LIFTING / ERGONOMIC Musculoskeletal strain, repetitive motion injury	☒ Use proper manual lifting techniques (straight back, bend at knees, firm grasp, firm footing). ☒ Seek assistance for lifting heavy objects (>50 lbs.) ☐ Use mechanical lifting equipment to reduce manual material handling hazard ☒ For repetitive motion activities, take breaks, switch hands, share task with others, employ other safe practices appropriate for the specific task(s).
☐	STORAGE OF MATERIALS See Sect. 12 for Chemical Storage	☐ Store materials in stable manner that prevents tipping, sliding, rolling, falling over. ☐ Materials stored in tiers to be stacked, racked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse ☐ Do not exceed load limits of racks, platform; ensure racks are stable, robust, secure ☐ On scaffold, do not store materials in excess of supplies needed for immediate use ☐ Ensure stored materials do not block aisles, passageways ☐ For used lumber, remove nails before stacking, and stack to be stable and self supporting, no higher than 20 feet (or 16 feet if lumber is to be handled manually) ☐ Debris will be removed regularly from storage area and place in designated area or disposed.
10. CONSTRUCTION OPERATIONS, HEAVY EQUIPMENT, HEAVY VEHICLES – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments:		
☐	HEAVY EQUIPMENT; CONSTRUCTION VEHICLES Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	☐ Trained/qualified persons operate all heavy equipment. ☐ No passengers on moving/operating equipment except where passenger seat/restraint is present. ☐ Equipment inspected upon mobilization and daily; maintained in good repair, backup alarms ☐ All leaks or defective safety equipment will be repaired before use. ☐ Operators required to use seatbelts. ☐ Eye contact with operator and use of hand signals prior to approaching near equipment. ☐ High visibility vests are required of all personnel in work area. ☐ Max. safe slope for each vehicle will be followed. ☐ Personnel to stay clear of swing radius of equipment. ☐ Spill equipment available for fuel and hydraulic fluid leaks. ☐ Equipment locked, secured, brakes set, buckets/forks lowered, when not in use.
☐	CRANES Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed by crane operator. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a dedicated channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to high winds. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Crane to be on level, stable base, dunnage used when necessary. ☐ Total weight of load not to exceed 50% of rated capacity for the crane radius and configuration. ☐ Rigging procedures – see Hoisting, Lifting, Rigging, below. ☐ Suspended personnel lifting is prohibited (unless per approved “man-lift” equipment). ☐ No personnel permitted beneath suspended loads.
☐	HOISTING, LIFTING, RIGGING ☐ Crane ☐ Drill rig ☐ Loader, excavator, etc. ☐ Mechanical, electrical hoist	☐ Identify, coordinate with competent person. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. ☐ Do not exceed loading limits of equipment. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane hooks will be equipped with safety latches.
☐	FORKLIFT Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Qualified operater, per established forklift training (certificate is required) ☐ Equipment inspected daily and documented on Forklift Preoperation Inspection Checklist ☐ Operators required to use seatbelts, and adhere to safe operating procedures.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		☐ Do not exceed lifting load limits. ☐ Forklift shall not be moved/driven with empty forks in raised position. ☐ When not in use, forks lowered, brake set, controls in neutral, key removed.
☐	EXCAVATION/TRENCHING ☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Overhead utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Activities under supervision/oversight of competent person ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Implement underground utility clearance procedures. ☐ Hand digging within 3' of utility locations. ☐ Excavations to be protected by perimeter fencing (not barricade tape) ☐ Use trench boxes in accordance with proper procedures. ☐ Workers in trenches to be within 25 feet of ladder or sloped entryway.
☐	DRILLING ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Underground utilities, aboveground ☐ Spills ☐ See Equipment/Machinery	☐ Contractor inspects drill rig daily before use. ☐ Drill rig equipped with operational emergency stop. ☐ Highpressure lines equipped with whip checks. ☐ High visibility vests, hard hats are being worn near the equipment. ☐ Operators and helpers will maintain a safe distance to moving parts. Individuals working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☐ Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. ☐ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig. ☐ Follow underground utility clearance procedures. ☐ Area is surveyed for overhead utilities, safe clearance distance maintained. ☐ Hearing protection is used when working near the rig. ☐ Spill equipment is available for fuel and hydraulic fluid leaks.
☐	DEMOLITION	☐ Develop/implement demolition safety plan
☐	BLASTING	☐ Develop/implement blasting safety plan

11. CONFINED SPACES, HAZARDOUS ENCLOSED or INDOOR SPACES – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	CONFINED SPACE(S) ☐ Permit required ☐ Non-permit required Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	☐ For personnel <u>working near confined</u> spaces: - Confined spaces have been identified, labeled. - Communication system in place to prevent unauthorized entry. ☐ For <u>permit-required confined space entry</u>, see separate entry permit. - All entrants, attendants, supervisors are trained/qualified. - Hazards properly characterized - Necessary equipment for safe entry utilized (access, retrieval, air monitoring) - Arrangements for rescue team have been made. ☐ For entry into a <u>non-permit</u> confined space, see site specific procedures delineated above in “site-specific comments,” or see alternate/attached safety work plan.
☐	ENCLOSED/INDOOR SPACE(S) ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/Sub-basement ☐ Crawl space entry ☐ Indoor equipment/drilling	*<u>For indoor use of gasoline/propane/diesel equipment:</u>* ☐ Duct exhaust to outdoors, and/or introduce fresh air using ventilation/blowers/fans. ☐ Perform air monitoring (see section on Air Monitoring) *<u>For entry into potentially hazardous indoor or enclosed spaces:</u>* ☐ Ventilate and/or perform air monitoring for anticipated hazards. ☐ If space classified as confined space, follow confined space entry requirements (above).

12. COMMERCIAL CHEMICAL PRODUCTS USED AT WORK SITE – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments:

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☒	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☒ Safety Data Sheets available, either on site or readily available within same work shift ☒ Containers labelled properly ☒ Workers trained on hazards ☒ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☒	COMPRESSED GAS(ES): Isosbutylene Calibration Gas for PID	☒ Secure cylinders upright, caps on when not in use, handle with care, prevent damage ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench ☐ Store/use in a manner to prevent asphyxiation hazard ☐ Segregate oxygen and fuel gases by distance (20') or barrier ☐ Control ignition sources, no smoking signage ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	FLAMM./COMBUST. LIQ.	☐ Proper storage (flam. storage cabinets, other storage precautions) ☐ Control ignition sources ☐ Grounding and bonding where appropriate
☐	CORROSIVES	☐ Handle with care, use appropriate eye/face/skin protection ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate
☐	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption; use PPE as appropriate, conduct air monitoring as appropriate.
☐	CHEMICAL STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar ☐ Incompatible chemicals segregated ☐ Secondary containment ☐ Safety equipment will be located near chemical storage.

13. **CHEMICAL HAZARDS FROM ON-SITE CONTAMINANTS, OPERATIONS, EMISSIONS** – CHECK IF N/A: ☐

Site-Specific Comments:

CHECK AS APPROPRIATE BELOW. PROVIDE ADDITIONAL INFO. AS APPROPRIATE, IN SITE-SPECIFIC HAZARD ANALYSIS ABOVE.

☒ Soil/groundwater contaminants (historical release)
☐ Recent release, known high concentrations
☐ Former chemical disposal site, landfill
☐ Urban fill, residual contaminants
☐ Containerized waste (drums, process equipment)
☐ Buried drums (known or potential)
☐ Large containers, potential for spills
☐ Emissions from active industrial processes
☐ Emissions from welding/cutting/hot work
☐ Carbon monoxide (vehicle/equipment exhaust)
☐ Contaminated building surfaces
☐ Unexploded ordnance
☐ Explosive dust

☐ Oxygen deficiency
☒ Chlorinated VOCs (volatile org. cpds.)
☒ BTEX, petroleum derived VOCs
☐ Fuel oils, petroleum, waste oil, lubricants
☒ Metals, metal compounds, metal dusts
☐ Elemental mercury
☒ Polyaromatic hydrocarbons (PAHs)
☒ Polychlorinated biphenyls (PCBs)
☐ Potential for flammable vapors
☐ Potential for flammable gas (methane)
☐ Corrosive, acids/caustics, strong irritants
☐ Sulfides, hydrogen sulfide (H2S)
☐ Cyanides, hydrogen cyanide (HCN)

☐ Asbestos
☐ Lead paint
☐ Pesticides, herbicides, fungicides
☐ Sensitizers
☐ Radioactive contaminants
☐ Other:

☐ FOR SITE REGULATED AS "UNCONTROLLED HAZ. WASTE SITE," e.g. **REGULATED BY HAZWOPER** (OSHA 29 CFR 1910.120)

- Establish work zones & site control plan (Exclusion Zone - EZ, Contaminant Reduction Zone - CRZ, Support Zone - SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field expience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program.
- "Peripheral" site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection through engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination, spill containment (see Sections B and C, "Health and Safety Equipment/Gear" and "Air Monitoring"
- Include emergency response program in H&S plan.

☒ FOR SITE WITH CHEMICAL CONTAMINANTS BUT **NOT REGULATED BY HAZWOPER**

- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard
- Implement appropriate controls to minimize worker exposure (engineering controls, work practices) to levels below OSHA PELs.
- Use PPE as needed (see B, "Health and Safety Equipment/Gear").
- Conduct air monitoring or personal air sampling to monitor and/or evaluate worker exposure (see Section C, "Air Monitoring").

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
☐	ATMOSPHERIC HAZARDS GENERATED BY EXHAUST FROM OPERATING EQUIPMENT ☐ Position work upwind of exhaust source ☐ Use blowers, fans to dissipate atmospheric hazards ☐ Conduct air monitoring (see Section C, "Air Monitoring").	
☐	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring is not anticipated with the current scope of work. ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

EMERGENCY RESPONSE **(911 Service is Available ☒ Yes ☐ No)** ☒ Verify wireless coverage at site, use alternate communication procedures as needed.

Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph's Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Urgent Care Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067

Emergency Response Comments:

Date:	
Project Name: Former Sperry Remington Site North	
THA Title: Hand Augering for Shallow Soil Sample Collection	
Subcontractor Name(s):	
Geosyntec Representative (reviewed by):	**Michael Hansen**
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

PRE-WORK TASK HAZARD ANALYSIS (THA)

TASK/ACTIVITY:	Monitoring Well Inspection and Synoptic Water Level Measurements	**Date:**	7/18/2014
Project Name:	Former Sperry Remington Site North	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Geosyntec Proj. Mngr.:**	Aron Krasnopoler
Project Address:	777 Sourth Main Street, Elmira, New York	**Geosyntec Proj. Dir.:**	Paul Brookner
Task Description:	Inspect existing monitoring wells and take depth to water and depth to bottom measurements at each location.		

A. SUMMARY OF SITE-SPECIFIC TASK HAZARD ANALYSIS

Site-Specific Comments: Some monitoring locations are in parking lot areas and may have traffic related hazards.

Sub-Tasks, Activities	Hazards	Hazard Controls
Task 1: Mobilize to Site	-Driving -Mobilization to and around unfamiliar facility	- Drive carefully to facility, be well rested and avoid distracted driving. - Review scope of work.
Task 2: Locate monitoring well	-Slips/trips/falls -Heat/cold stress -Biohazards: snakes, bees, spider, ticks, poison ivy -Potential contaminant exposure: VOCs, PCBs, SVOCs -Traffic	-Pay close attention to foot placement; slow deliberate movement. -Dress for weather conditions. Apply sunscreen if needed. -Beaware of surroundings and avoid biohazards. - don level D personal protective equipment (PPE). PPE will include: safety glasses, safety vests, steel toe boots, and nitrile gloves. - see traffic hazard controls
Task 3: Measure depth to water, depth to bottom, and complete monitoring well inspections.	-Same hazards noted above for Task 2. -Splash harzards. .	-Same hazard controls noted above for Task 2. -Avoid direct contact with contaminated matrices and/or equipment.
Task 4: Equipment Decontamination Decontaminate equipment that will be reused (e.g. water level indicator)	-Slips, Trips, and Falls -Potential contaminant exposure: VOCs, PCBs, SVOCs -Splash hazards	-Pay close attention to foot placement; slow deliberate movement. -Continue to wear level D PPE and minimize contact with water.
Task 5: Demobilization Demobilize from Site, making sure all work areas are clean and orderly.	-Driving	-Drive carefully and avoid distracted driving. If too exhausted to drive safely back to the office make arrangements to stay at hotel.

B. HEALTH AND SAFETY EQUIPMENT/GEAR

Site-Specific Comments:

☒	PERSONAL PROTECTIVE EQUIPMENT (PPE)**:**	Level(s) of Protection (for chemical hazards):	☐ Level D (standard work clothes, no chemical protective clothing) ☒ Modified Level D (chemical protective clothing in addition to standard work clothes) ☐ Level C (air purifying respirator or dust mask, with chemical protective clothing) ☐ Level B or A (air supplied respirator, chemical protective suit)

		☒ Hard-toed boots/shoes ☐ Hardhat ☐ Noise/hearing protection ☒ High-visibility/reflective vest ☒ Work gloves ☒ Eye/face protection ☒ Safety glasses with side shields ☐ Goggles ☐ Face shield ☐ Other: ☒ Chemical protective clothing ☒ Gloves, type: Nitrile ☐ Coveralls, type: ☐ Outer boots, boot covers ☐ Other:	☐ Respiratory Protection ☐ Disposable n-95 face mask ☐ Half-face air-purifying respirator ☐ Full-face air-purifying respirator ☐ Resp-cartridge, type: ☐ Other: ☐ Personal flotation device ☐ Personal fall apparatus ☐ Fire retardant clothing ☐ EH (Electrical Hazard) rated boots, gloves ☐ Other:
☒	OTHER H&S EQUIPMENT and GEAR:	☒ Fire extinguisher ☐ Caution tape ☒ Traffic control warning devices ☐ Warning signs or placards ☐ Decon supplies for personal decon ☐ Portable ground fault circuit interrupter (GFCI)	☐ Lockout/tagout equipment ☐ Ventilation equipment (fan, blower) ☒ First aid kit ☒ Vehicle emergency kit (flares, lights, reflective device) ☐ Other:

C. AIR MONITORING – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	INSTRUMENT(S), EQUIPMENT	☐ PID, Lamp energy: eV ☐ FID ☐ Carbon monoxide detector ☐ Hydrogen sulfide detector ☐ Oxygen (O_2) detector	☐ Flammable gas (LEL) detector ☐ Particulate (dust) detector ☐ Calibration kit for each detector type ☐ Others:

☐	ACTION LEVELS FOR **O2/LEL**	☐ Oxygen	$\leq$19.5% - provide ventilation to raise oxygen to acceptable levels, or utilize Level B. $\geq$23.0% - provide ventilation to lower oxygen to acceptable levels, or utilize Level B and implement controls for fire hazards, control ignition sources.
		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At $\geq$10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10% through passive dissipation, or active vapor control measures.

☐	ACTION LEVELS FOR **TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D**	**Use levels C or B, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D.**
		☐ VOCs	< ppm	ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)
		☐ Carbon Monoxide	< 35 ppm	$\geq$35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	$\geq$10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< mg/m^3	> mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
1. PREMISES/ENVIRONMENTAL HAZARDS		
Site-Specific Comments:		
☒	LOCATION HAZARDS ☒ Outdoor field work ☒ Urban, suburban ☐ Rural, remote location ☐ Indoor field work ☐ Operating facility ☐ Vacant facility ☐ Water hazards	☒ Use routine safety precautions commensurate with routine work environment conditions ☐ For non-routine, unique, or severe location hazards, see site-specific safety comments above. ☐ For water-related work, see #2, “Water Hazards” ☐ For worksite violence/security risks, see #3, “Violence, Security, Working Alone” ☒ For transportation related hazards, see #5, “Worksite Traffic, Vehicle, Transportation Hazards” ☐ For utility-related hazards, see # 6, “Utility-Related Hazards ☐ For atmospheric hazards in enclosed, indoor, or confined spaces, see # 11 “Confined Spaces or Hazardous Enclosed/Indoor Spaces”

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
☒	WALKING/WORKING SURFACES, HOUSEKEEPING ☒ Uneven, rough terrain, riprap ☒ Slippery surfaces ☐ Holes, pits, openings ☐ Puncture, foot hazards	☒ Keep work areas clean, orderly, dispose of trash/debris, maintain sanitary conditions. ☒ Walkways are cleared of equipment, excavated material, tools and debris, snow ☐ Holes, pits, openings to be covered or otherwise marked or guarded ☐ Apply absorbent, salt or sand, for traction/slip resistance on slippery/icy/wet surfaces ☒ Wear proper work boots/shoes with ankle support and/or traction, as appropriate for conditions
☒	TEMPERATURE/WEATHER ☒ Heat Stress ☒ Cold Stress ☒ Severe Weather ☒ Lightning	☒ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☒ Provide sufficient fluids, shade, breaks, other precautions as appropriate to adderss heat hazards. ☒ Provide protection from sun (sun screen, shaded brake area). ☐ For cold stress, wear multiple layers, protect from wind/wet, frequent break in warm location. ☐ In high wind, discontinue working at heights (e.g. on ladders, scaffold, aerial lift, similar). ☒ Use precautions for lightning, thunderstorm, hale, tornado (monitor weather, “30/30 rule,” shelter)
☒	BIOLOGICAL HAZARDS ☒ Insects, spiders, ticks ☐ Wild/feral/pet animals ☐ Mold, fungi ☒ Poisonous plants ☐ Bird Guano ☐ Infectious, wastewater, sewer ☐ Bloodborne pathogens	☒ Utilize safety practices commensurate with risk of biting/stinging insects, wild/feral/pet animals. ☒ For poisonous plants (poison ivy/oak/sumac/etc.), minimize exposed skin area, wear coveralls, use barrier cream/wash (Technu products or similar), as appropriate. For biological exposure hazards, use protective measures commensurate with hazard: ☒ Minor-moderate hazard - use ordinary hygiene practices, protective gloves, hand washing. ☐ Moderate-severe hazard - add protective clothing, respirator, decon, as appropriate. ☐ Bloodborne pathogen (human infectious agents) - implement “Universal Precautions”
☐	HAZARDOUS NOISE	☐ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period, or intermittent….)
☐	OVERHEAD HAZARDS, FALLING OBJECTS	☐ Wear hardhat when exposed to overhead hazards, “bump” hazards, falling objects ☐ Cordon off hazard zones, route access/egress around hazards of falling objects ☐ Secure objects from falling ☐ Provide overhead protection (canopy) to protect public pedestrians, workers
☐	ILLUMINATION ☐ Night work ☐ Indoor work	☐ Make site-specific arrangements for illumination of work areas and access routes.
2. BOATING, WATER, WET LOCATIONS, FLOOD, ETC. – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	WATER HAZARDS ☐ Drowning, hypothermia ☐ Boat, barge, raft ☐ Wading, wetland, mud/silt ☐ Dam release, flood, tide ☐ Diving	☐ Wear appropriate Coast Guard-approved Personal Flotation Device (PFD) ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares) ☐ Use fuel safety practices, fire extinguisher present in boat ☐ See site-specific safety comments above.
3. VIOLENCE, PUBLIC PROTECTION, WORKING ALONE – SPECIAL MEASURES – CHECK IF NOT ANTICIPATED: ☐		
Site-Specific Comments:		
☐	PERSONAL SECURITY, HIGH CRIME AREA	☐ Employ standard precautions, which may include: conduct work only during daylight hours, use buddy system, avoid parking in secluded location, lock vehicles, hide valuable items in vehicles from plain view ☐ See site-specific safety comments above for project-specific security measures.
☐	PUBLIC AT RISK, SITE SECURITY	☐ Provide safe pedestrian route around work areas, use appropriate barriers, signs, warning devices. ☐ Provide covers over excavation, secure fencing, overnight protection ☐ Provide protection from overhead hazards (canopy, etc.) where public at risk of overhead hazards ☐ Provide secure locked storage of hazardous chemicals, hazardous equipment, etc.
☒	WORKING ALONE	☒ Establish “check in” procedure with supervisor or project manager (arrival, mid-day, departure) ☒ Additional measures, as appropriate for the working conditions.
4. DRIVING, TRAFFIC, TRANSPORTATION HAZARDS – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments:		
☒	DRIVING HAZARDS ☒ Routine work travel ☐ Unfamiliar location ☐ Unfamiliar vehicle ☒ Overnight travel, distance	☒ Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, no texting, safe cell phone use, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☒ Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Familiarize yourself with vehicle operational controls before operating unfamiliar vehicle.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☒	WORKERS EXPOSED TO TRAFFIC HAZARDS ☒ In/near public or private roadway ☒ Parking lot, driveway ☐ Worksite, construction site traffic	☒ Workers to wear reflective vests where exposed to traffic hazards. ☒ Where possible, park vehicles as protective shield from oncoming traffic. ☒ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ DOT signal devices will be used to re-route vehicles around work area, site entrances/exits. ☐ Flaggers will be used and have DOT Flagger Training; police detail where appropriate or required. ☒ Park vehicles in secure location away from heavy equipment use or other site operations. ☐ Mark temporary roadways clearly, provide berms/stop logs where needed.
☐	RAILROAD/AIRPORT HAZARD	☐ Coordinate with rail company/airport and implement required safety measures ☐ Site workers to receive safety training for railroad/airport work.
☐	OFF-ROAD DRIVING, USE OF ALL-TERRAIN VEHICLE	☐ For off road driving, do not exceed capability of vehicle ☐ Follow ATV specific procedures for training, safety equipment, operation.
☐	TRANSPORTING MATERIALS, TOWING/HAULING LOADS	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.

5. **UTILITY-RELATED HAZARDS** (for underground/overhead work) – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	OVERHEAD UTILITIES	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.
☐	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.

6. ELECTRICAL HAZARDS – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	WORKERS EXPOSED TO: ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/Transformer	☐ Implement electrical safe work practices commensurate with the work to be performed, pertaining to the following (as applicable): - Worker training/qualification - Electrical equipment and hazards, safe design features - Electrical safe work practices - Grounding, use of GFCIs - Electrical equipment installation, operation, maintenance, repair - Arc flash protection - Electrical equipment diagnostics
☐	BASIC ELECTRICAL HAZARDS ☐ Equipment/tool use/operation ☐ Use of extension cords	☐ Control water-related hazards, in a manner appropriate for the job tasks/equipment/tool. ☐ Use extension cords/power cords properly, prevent damage, take out of service if damaged. ☐ Inspect tool/equipment/extension cords/power cords before each use. ☐ Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements ☐ Ensure live parts are guarded, enclosures secure. ☐ Enclosures, circuits properly labeled.
☐	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate “authorized” personnel, notify “affected” personnel

7. **FALL HAZARDS** – CHECK IF NOT ANTICIPATED: ☒

Site-Specific Comments:

☐	WORKING AT HEIGHTS ☐ Roof, skylight ☐ Elevated platform ☐ Holes, side opening ☐ Retaining wall, cliff, ledge ☐ Trench, excavation ☐ Protruding rebar	☐ Ensure guardrails present ☐ Use personal fall apparatus (PFA) ☐ Use tether or positioning device ☐ Restrict access to hazard (barriers, tape, sign) ☐ Ensure covers in place over holes ☐ Watch person	☐ Use fall protection net ☐ Restrict access beneath work to protect other site personnel from overhead hazards ☐ Install caps on protruding rebar
☐	LADDERS / STAIRS ☐ Extension ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs	☐ Provide instruction/review pertaining to safe ladder use ☐ Extension ladders are properly footed, secured, setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.	

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☐	AERIAL LIFT ☐ Scissor lift ☐ Extensible boom ☐ Articulated boom ☐ Vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use.
☐	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold	☐ Identify/coordinate operations with competent person ☐ Supported scaffold level, stable, proper attachments, tiebacks, planking, ☐ Suspended scaffolds anchored properly ☐ Guardrails present above 10 feet or personal fall apparatus used. ☐ Proper means of accessing scaffold (proper ladders, stair tower). ☐ Total height of free-standing scaffold not to exceed four times the minimum base dimension.
8. TOOLS, EQUIPMENT, MACHINERY – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments: May use hand tools to open monitoring wells		
☒	HAND TOOLS Eye injury, puncture/bruise/ laceration hazard	☒ Use proper tool for the job, maintain tools in good condition (no damage, cutting tools sharp, etc.) use appropriate PPE for hand/eye/body protection, plan for safe "follow through" motion, use vise/clamp/work surface to hold/stabilize work piece
☐	POWER TOOLS ☐ Eye/hand/body injury ☐ Fuel-related hazards ☐ Inhalation hazard ☐ Noise ☐ Sparks, heat, fire hazard ☐ Electrical hazards	☐ For all power tools: - Inspect tools to ensure safe operating condition before each use. - Use tool in accordance with manufacturer's specifications. - Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection - Provide training or verify operator qualification for use of power tool. - Stay clear of hazard zone, "line of fire" when working near where power tools are used. ☐ Use safety practices for refueling, fuel handling/transport/storage. ☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. ☐ For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. ☐ For electrical hazards, see # 6, "Electrical Hazards".
☐	WELDING, CUTTING ☐ Gas welding/cutting ☐ Arc welding/cutting	☐ Hot work permit system to be implemented. ☐ Operator properly protected (eye protection, clothing, apron, etc.) ☐ Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles) ☐ Protect nearby personnel from hazardous UV, IR light (shielding, curtain) ☐ Electrical safe work practices for arc welding ☐ Gas cylinder safe practices (secured, upright, caps on when not in use, prevent damage).
☐	EQUIPMENT/MACHINERY ☐ Point-of-operation hazards ☐ Pinch points, moving parts ☐ 'Struck-by,' 'caught between' ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☐ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Compressed air/gas ☐ Kinetic, stored energy ☐ Noise ☐ Lockout/tagout ☐ Emissions, discharge gases ☐ Working at heights, falls ☐ Lifting, repetitive motion ☐ Illumination ☐ Electrical (see below)	☐ *Working Near* Equipment/Machinery ☐ Work at safe distance/restrict access, ensure guards in place, heed warning signs ☐ Implement measures necessary for adequate illumination ☐ Control exposue to emission/discharge gases (ventilation, PPE, other means). ☐ Ensure safe practices for fuels/fluids/machine-related hazardous materials ☐ Use PPE or other safety practices for eye/hearing/hand/head/body protection ☐ Segregate combustible materials from hot surfaces/hot exhaust (minimum 3 feet) ☐ Operation/Maintenance/Repair of Equipment/Machinery (see applicable control measures above) ☐ Orient/locate equipment for safe access during operation and maintenance ☐ Use equipment/machinery in accordance with manufacturer's specifications ☐ Use safe lifting practices, minimize repetitive motion hazards ☐ Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices ☐ Secure long hair/loose clothing/hanging jewelry near moving/rotating parts ☐ Ensure appropriate warning signs are in place and heeded ☐ Use safe practices for fueling, fuel transport & storage. ☐ Operate fuel-powered equipment in well ventilated location. ☐ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy ☐ Implement control-of-hazardous-energy practices (lockout/tagout), designate "authorized" personnel, notify "affected" personnel ☐ Protect from fall hazards (safe ladder use, personal fall protection, guardrails, other) ☐
☐	ELECTRICAL HAZARDS	☐ Implement provisions of # 6, "Electrical Hazards"
9. MANUAL MATERIAL HANDLING, MATERIAL STORAGE – CHECK IF NOT APPLICABLE: ☒		

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
Site-Specific Comments:		
☐	LIFTING / ERGONOMIC Musculoskeletal strain, repetitive motion injury	☐ Use proper manual lifting techniques (straight back, bend at knees, firm grasp, firm footing). ☐ Seek assistance for lifting heavy objects (>50 lbs.) ☐ Use mechanical lifting equipment to reduce manual material handling hazard ☐ For repetitive motion activities, take breaks, switch hands, share task with others, employ other safe practices appropriate for the specific task(s).
☐	STORAGE OF MATERIALS See Sect. 12 for Chemical Storage	☐ Store materials in stable manner that prevents tipping, sliding, rolling, falling over. ☐ Materials stored in tiers to be stacked, racked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse ☐ Do not exceed load limits of racks, platform; ensure racks are stable, robust, secure ☐ On scaffold, do not store materials in excess of supplies needed for immediate use ☐ Ensure stored materials do not block aisles, passageways ☐ For used lumber, remove nails before stacking, and stack to be stable and self supporting, no higher than 20 feet (or 16 feet if lumber is to be handled manually) ☐ Debris will be removed regularly from storage area and place in designated area or disposed.
10. CONSTRUCTION OPERATIONS, HEAVY EQUIPMENT, HEAVY VEHICLES – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments:		
☐	HEAVY EQUIPMENT; CONSTRUCTION VEHICLES Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	☐ Trained/qualified persons operate all heavy equipment. ☐ No passengers on moving/operating equipment except where passenger seat/restraint is present. ☐ Equipment inspected upon mobilization and daily; maintained in good repair, backup alarms ☐ All leaks or defective safety equipment will be repaired before use. ☐ Operators required to use seatbelts. ☐ Eye contact with operator and use of hand signals prior to approaching near equipment. ☐ High visibility vests are required of all personnel in work area. ☐ Max. safe slope for each vehicle will be followed. ☐ Personnel to stay clear of swing radius of equipment. ☐ Spill equipment available for fuel and hydraulic fluid leaks. ☐ Equipment locked, secured, brakes set, buckets/forks lowered, when not in use.
☐	CRANES Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed by crane operator. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a dedicated channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to high winds. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Crane to be on level, stable base, dunnage used when necessary. ☐ Total weight of load not to exceed 50% of rated capacity for the crane radius and configuration. ☐ Rigging procedures – see Hoisting, Lifting, Rigging, below. ☐ Suspended personnel lifting is prohibited (unless per approved “man-lift” equipment). ☐ No personnel permitted beneath suspended loads.
☐	HOISTING, LIFTING, RIGGING ☐ Crane ☐ Drill rig ☐ Loader, excavator, etc. ☐ Mechanical, electrical hoist	☐ Identify, coordinate with competent person. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. ☐ Do not exceed loading limits of equipment. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane hooks will be equipped with safety latches.
☐	FORKLIFT Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Qualified operater, per established forklift training (certificate is required) ☐ Equipment inspected daily and documented on Forklift Preoperation Inspection Checklist ☐ Operators required to use seatbelts, and adhere to safe operating procedures.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		☐ Do not exceed lifting load limits. ☐ Forklift shall not be moved/driven with empty forks in raised position. ☐ When not in use, forks lowered, brake set, controls in neutral, key removed.
☐	EXCAVATION/TRENCHING ☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Overhead utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Activities under supervision/oversight of competent person ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Implement underground utility clearance procedures. ☐ Hand digging within 3' of utility locations. ☐ Excavations to be protected by perimeter fencing (not barricade tape) ☐ Use trench boxes in accordance with proper procedures. ☐ Workers in trenches to be within 25 feet of ladder or sloped entryway.
☐	DRILLING ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Underground utilities, aboveground ☐ Spills ☐ See Equipment/Machinery	☐ Contractor inspects drill rig daily before use. ☐ Drill rig equipped with operational emergency stop. ☐ Highpressure lines equipped with whip checks. ☐ High visibility vests, hard hats are being worn near the equipment. ☐ Operators and helpers will maintain a safe distance to moving parts. Individuals working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☐ Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. ☐ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig. ☐ Follow underground utility clearance procedures. ☐ Area is surveyed for overhead utilities, safe clearance distance maintained. ☐ Hearing protection is used when working near the rig. ☐ Spill equipment is available for fuel and hydraulic fluid leaks.
☐	DEMOLITION	☐ Develop/implement demolition safety plan
☐	BLASTING	☐ Develop/implement blasting safety plan

11. CONFINED SPACES, HAZARDOUS ENCLOSED or INDOOR SPACES – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	CONFINED SPACE(S) ☐ Permit required ☐ Non-permit required Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	☐ For personnel working near confined spaces: - Confined spaces have been identified, labeled. - Communication system in place to prevent unauthorized entry. ☐ For permit-required confined space entry, see separate entry permit. - All entrants, attendants, supervisors are trained/qualified. - Hazards properly characterized - Necessary equipment for safe entry utilized (access, retrieval, air monitoring) - Arrangements for rescue team have been made. ☐ For entry into a non-permit confined space, see site specific procedures delineated above in “site-specific comments,” or see alternate/attached safety work plan.
☐	ENCLOSED/INDOOR SPACE(S) ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/Sub-basement ☐ Crawl space entry ☐ Indoor equipment/drilling	*For indoor use of gasoline/propane/diesel equipment:* ☐ Duct exhaust to outdoors, and/or introduce fresh air using ventilation/blowers/fans. ☐ Perform air monitoring (see section on Air Monitoring) *For entry into potentially hazardous indoor or enclosed spaces:* ☐ Ventilate and/or perform air monitoring for anticipated hazards. ☐ If space classified as confined space, follow confined space entry requirements (above).

12. COMMERCIAL CHEMICAL PRODUCTS USED AT WORK SITE – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments: Alconox

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☒	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☒ Safety Data Sheets available, either on site or readily available within same work shift ☒ Containers labelled properly ☒ Workers trained on hazards ☒ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☐	COMPRESSED GAS(ES):	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench ☐ Store/use in a manner to prevent asphyxiation hazard ☐ Segregate oxygen and fuel gases by distance (20') or barrier ☐ Control ignition sources, no smoking signage ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	FLAMM./COMBUST. LIQ.	☐ Proper storage (flam. storage cabinets, other storage precautions) ☐ Control ignition sources ☐ Grounding and bonding where appropriate
☐	CORROSIVES	☐ Handle with care, use appropriate eye/face/skin protection ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate
☐	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption; use PPE as appropriate, conduct air monitoring as appropriate.
☐	CHEMICAL STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar ☐ Incompatible chemicals segregated ☐ Secondary containment ☐ Safety equipment will be located near chemical storage.

13. CHEMICAL HAZARDS FROM ON-SITE CONTAMINANTS, OPERATIONS, EMISSIONS – CHECK IF N/A: ☐

Site-Specific Comments:

CHECK AS APPROPRIATE BELOW. PROVIDE ADDITIONAL INFO. AS APPROPRIATE, IN SITE-SPECIFIC HAZARD ANALYSIS ABOVE.

☒ Soil/groundwater contaminants (historical release)
☐ Recent release, known high concentrations
☐ Former chemical disposal site, landfill
☐ Urban fill, residual contaminants
☐ Containerized waste (drums, process equipment)
☐ Buried drums (known or potential)
☐ Large containers, potential for spills
☐ Emissions from active industrial processes
☐ Emissions from welding/cutting/hot work
☐ Carbon monoxide (vehicle/equipment exhaust)
☐ Contaminated building surfaces
☐ Unexploded ordnance
☐ Explosive dust

☐ Oxygen deficiency
☒ Chlorinated VOCs (volatile org. cpds.)
☒ BTEX, petroleum derived VOCs
☐ Fuel oils, petroleum, waste oil, lubricants
☒ Metals, metal compounds, metal dusts
☐ Elemental mercury
☒ Polyaromatic hydrocarbons (PAHs)
☒ Polychlorinated biphenyls (PCBs)
☐ Potential for flammable vapors
☐ Potential for flammable gas (methane)
☐ Corrosive, acids/caustics, strong irritants
☐ Sulfides, hydrogen sulfide (H2S)
☐ Cyanides, hydrogen cyanide (HCN)

☐ Asbestos
☐ Lead paint
☐ Pesticides, herbicides, fungicides
☐ Sensitizers
☐ Radioactive contaminants
☐ Other:

☐ FOR SITE REGULATED AS "UNCONTROLLED HAZ. WASTE SITE," e.g. **REGULATED BY HAZWOPER** (OSHA 29 CFR 1910.120)

- Establish work zones & site control plan (Exclusion Zone - EZ, Contaminant Reduction Zone - CRZ, Support Zone - SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field expience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program.
- "Peripheral" site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection through engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination, spill containment (see Sections B and C, "Health and Safety Equipment/Gear" and "Air Monitoring"
- Include emergency response program in H&S plan.

☒ FOR SITE WITH CHEMICAL CONTAMINANTS BUT **NOT REGULATED BY HAZWOPER**

- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard
- Implement appropriate controls to minimize worker exposure (engineering controls, work practices) to levels below OSHA PELs.
- Use PPE as needed (see B, "Health and Safety Equipment/Gear").
- Conduct air monitoring or personal air sampling to monitor and/or evaluate worker exposure (see Section C, "Air Monitoring").

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☐	ATMOSPHERIC HAZARDS GENERATED BY EXHAUST FROM OPERATING EQUIPMENT ☐ Position work upwind of exhaust source ☐ Use blowers, fans to dissipate atmospheric hazards ☐ Conduct air monitoring (see Section C, "Air Monitoring").	
☐	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring is not anticipated with the current scope of work. ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

EMERGENCY RESPONSE **(911 Service is Available ☒ Yes ☐ No)** ☒ Verify wireless coverage at site, use alternate communication procedures as needed.

Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph's Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Urgent Care Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067

Emergency Response Comments:

Date:	
Project Name: Former Sperry Remington Site North	
THA Title: Monitoring Well Inspections and Synoptic Water Level Measurements	
Subcontractor Name(s):	
Geosyntec Representative (reviewed by):	**Michael Hansen**
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

PRE-WORK TASK HAZARD ANALYSIS (THA)

TASK/ACTIVITY:	Groundwater Sampling	**Date:**	7/18/2014
Project Name:	Former Sperry Remington Site North	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Geosyntec Proj. Mngr.:**	Aron Krasnopoler
Project Address:	777 Sourth Main Street, Elmira, New York	**Geosyntec Proj. Dir.:**	Paul Brookner
Task Description:	Collect groundwater samples via low-flow sampling procedures from site monitoring wells.		

A. SUMMARY OF SITE-SPECIFIC TASK HAZARD ANALYSIS

Site-Specific Comments: Submersible electric centrifugal pumps (e.g. mega monsoon) are expected to be used for sampling.

Sub-Tasks, Activities	Hazards	Hazard Controls
Task 1: Mobilize to Site	-Driving -Mobilization to and around unfamiliar facility	- Drive carefully to facility, be well rested and avoid distracted driving. - Review scope of work.
Task 2: Locate sampling location and measure depth to water.	-Slips/trips/falls -Heat/cold stress -Biohazards: snakes, bees, spider, ticks, poison ivy -Potential contaminant exposure: VOCs, PCBs, SVOCs	-Pay close attention to foot placement; slow deliberate movement. -Dress for weather conditions. Apply sunscreen if needed. -Beaware of surroundings and avoid biohazards. - don level D personal protective equipment (PPE). PPE will include: safety glasses, safety vests, steel toe boots, and nitrile gloves.
Task 3: Groundwater Sampling Collect groundwater sample from monitoring well using low-flow sampling procedures.	-Same hazards noted above for Task 2. -Splash harzards. .	-Same hazard controls noted above for Task 2. -Avoid direct contact with contaminated matrices.
Task 4: Sample Labeling and Packing	-Potential contaminant exposure: VOCs, PCBs, SVOCs -Back strain when transporting coolers full of collected samples packed with ice.	-Continue to wear level D PPE and minimize contact with sample material. -Use proper lifting techniques. Get assistance when possible, especially for containers heavier than 49 lbs.
Task 5: Equipment Decontamination Decontaminate equipment that will be reused (e.g. pump, water level indicator, et. al.)	-Slips, Trips, and Falls -Potential contaminant exposure: VOCs, PCBs, SVOCs -Splash hazards	-Pay close attention to foot placement; slow deliberate movement. -Continue to wear level D PPE and minimize contact with water.
Task 6: Demobilization Demobilize from Site, making sure all work areas are clean and orderly.	-Driving	-Drive carefully and avoid distracted driving. If too exhausted to drive safely back to the office make arrangements to stay at hotel.

B. HEALTH AND SAFETY EQUIPMENT/GEAR

Site-Specific Comments:

☒	PERSONAL PROTECTIVE EQUIPMENT (PPE):	Level(s) of Protection (for chemical hazards):	☐ Level D (standard work clothes, no chemical protective clothing) ☒ Modified Level D (chemical protective clothing in addition to standard work clothes) ☐ Level C (air purifying respirator or dust mask, with chemical protective clothing) ☐ Level B or A (air supplied respirator, chemical protective suit)

		☒ Hard-toed boots/shoes ☐ Hardhat ☐ Noise/hearing protection ☒ High-visibility/reflective vest ☒ Work gloves ☒ Eye/face protection ☒ Safety glasses with side shields ☐ Goggles ☐ Face shield ☐ Other: ☒ Chemical protective clothing ☒ Gloves, type: Nitrile ☐ Coveralls, type: ☐ Outer boots, boot covers ☐ Other:	☐ Respiratory Protection ☐ Disposable n-95 face mask ☐ Half-face air-purifying respirator ☐ Full-face air-purifying respirator ☐ Resp-cartridge, type: ☐ Other: ☐ Personal flotation device ☐ Personal fall apparatus ☐ Fire retardant clothing ☐ EH (Electrical Hazard) rated boots, gloves ☐ Other:
☒	OTHER H&S EQUIPMENT and GEAR:	☒ Fire extinguisher ☐ Caution tape ☒ Traffic control warning devices ☐ Warning signs or placards ☐ Decon supplies for personal decon ☐ Portable ground fault circuit interrupter (GFCI)	☐ Lockout/tagout equipment ☐ Ventilation equipment (fan, blower) ☒ First aid kit ☒ Vehicle emergency kit (flares, lights, reflective device) ☐ Other:

C. AIR MONITORING – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	INSTRUMENT(S), EQUIPMENT	☐ PID, Lamp energy: eV ☐ FID ☐ Carbon monoxide detector ☐ Hydrogen sulfide detector ☐ Oxygen (O_2) detector	☐ Flammable gas (LEL) detector ☐ Particulate (dust) detector ☐ Calibration kit for each detector type ☐ Others:

☐	ACTION LEVELS FOR **O2/LEL**	☐ Oxygen	≤19.5% - provide ventilation to raise oxygen to acceptable levels, or utilize Level B. ≥23.0% - provide ventilation to lower oxygen to acceptable levels, or utilize Level B and implement controls for fire hazards, control ignition sources.
		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10% through passive dissipation, or active vapor control measures.

☐	ACTION LEVELS FOR **TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D**	**Use levels C or B, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D.**
		☐ VOCs	< ppm	ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)
		☐ Carbon Monoxide	< 35 ppm	≥35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< mg/m^3	> mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**

1. PREMISES/ENVIRONMENTAL HAZARDS

Site-Specific Comments:

☒	LOCATION HAZARDS ☒ Outdoor field work ☒ Urban, suburban ☐ Rural, remote location ☐ Indoor field work ☐ Operating facility ☐ Vacant facility ☐ Water hazards	☒ Use routine safety precautions commensurate with routine work environment conditions ☐ For non-routine, unique, or severe location hazards, see site-specific safety comments above. ☐ For water-related work, see #2, “Water Hazards” ☐ For worksite violence/security risks, see #3, “Violence, Security, Working Alone” ☒ For transportation related hazards, see #5, “Worksite Traffic, Vehicle, Transportation Hazards” ☒ For utility-related hazards, see # 6, “Utility-Related Hazards ☐ For atmospheric hazards in enclosed, indoor, or confined spaces, see # 11 “Confined Spaces or Hazardous Enclosed/Indoor Spaces”

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☒	WALKING/WORKING SURFACES, HOUSEKEEPING ☒ Uneven, rough terrain, riprap ☒ Slippery surfaces ☐ Holes, pits, openings ☐ Puncture, foot hazards	☒ Keep work areas clean, orderly, dispose of trash/debris, maintain sanitary conditions. ☒ Walkways are cleared of equipment, excavated material, tools and debris, snow ☐ Holes, pits, openings to be covered or otherwise marked or guarded ☐ Apply absorbent, salt or sand, for traction/slip resistance on slippery/icy/wet surfaces ☒ Wear proper work boots/shoes with ankle support and/or traction, as appropriate for conditions
☒	TEMPERATURE/WEATHER ☒ Heat Stress ☒ Cold Stress ☒ Severe Weather ☒ Lightning	☒ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☒ Provide sufficient fluids, shade, breaks, other precautions as appropriate to adderss heat hazards. ☒ Provide protection from sun (sun screen, shaded brake area). ☐ For cold stress, wear multiple layers, protect from wind/wet, frequent break in warm location. ☐ In high wind, discontinue working at heights (e.g. on ladders, scaffold, aerial lift, similar). ☒ Use precautions for lightning, thunderstorm, hale, tornado (monitor weather, “30/30 rule,” shelter)
☒	BIOLOGICAL HAZARDS ☒ Insects, spiders, ticks ☐ Wild/feral/pet animals ☐ Mold, fungi ☒ Poisonous plants ☐ Bird Guano ☐ Infectious, wastewater, sewer ☐ Bloodborne pathogens	☒ Utilize safety practices commensurate with risk of biting/stinging insects, wild/feral/pet animals. ☒ For poisonous plants (poison ivy/oak/sumac/etc.), minimize exposed skin area, wear coveralls, use barrier cream/wash (Technu products or similar), as appropriate. For biological exposure hazards, use protective measures commensurate with hazard: ☒ Minor-moderate hazard - use ordinary hygiene practices, protective gloves, hand washing. ☐ Moderate-severe hazard - add protective clothing, respirator, decon, as appropriate. ☐ Bloodborne pathogen (human infectious agents) - implement “Universal Precautions”
☐	HAZARDOUS NOISE	☐ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period, or intermittent….)
☐	OVERHEAD HAZARDS, FALLING OBJECTS	☐ Wear hardhat when exposed to overhead hazards, “bump” hazards, falling objects ☐ Cordon off hazard zones, route access/egress around hazards of falling objects ☐ Secure objects from falling ☐ Provide overhead protection (canopy) to protect public pedestrians, workers
☐	ILLUMINATION ☐ Night work ☐ Indoor work	☐ Make site-specific arrangements for illumination of work areas and access routes.
2. BOATING, WATER, WET LOCATIONS, FLOOD, ETC. – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	WATER HAZARDS ☐ Drowning, hypothermia ☐ Boat, barge, raft ☐ Wading, wetland, mud/silt ☐ Dam release, flood, tide ☐ Diving	☐ Wear appropriate Coast Guard-approved Personal Flotation Device (PFD) ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares) ☐ Use fuel safety practices, fire extinguisher present in boat ☐ See site-specific safety comments above.
3. VIOLENCE, PUBLIC PROTECTION, WORKING ALONE – SPECIAL MEASURES – CHECK IF NOT ANTICIPATED: ☐		
Site-Specific Comments:		
☐	PERSONAL SECURITY, HIGH CRIME AREA	☐ Employ standard precautions, which may include: conduct work only during daylight hours, use buddy system, avoid parking in secluded location, lock vehicles, hide valuable items in vehicles from plain view ☐ See site-specific safety comments above for project-specific security measures.
☐	PUBLIC AT RISK, SITE SECURITY	☐ Provide safe pedestrian route around work areas, use appropriate barriers, signs, warning devices. ☐ Provide covers over excavation, secure fencing, overnight protection ☐ Provide protection from overhead hazards (canopy, etc.) where public at risk of overhead hazards ☐ Provide secure locked storage of hazardous chemicals, hazardous equipment, etc.
☒	WORKING ALONE	☒ Establish “check in” procedure with supervisor or project manager (arrival, mid-day, departure) ☒ Additional measures, as appropriate for the working conditions.
4. DRIVING, TRAFFIC, TRANSPORTATION HAZARDS – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments:		
☒	DRIVING HAZARDS ☒ Routine work travel ☐ Unfamiliar location ☐ Unfamiliar vehicle ☒ Overnight travel, distance	☒ Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, no texting, safe cell phone use, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☒ Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Familiarize yourself with vehicle operational controls before operating unfamiliar vehicle.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)	
☒	WORKERS EXPOSED TO TRAFFIC HAZARDS ☒ In/near public or private roadway ☒ Parking lot, driveway ☐ Worksite, construction site traffic	☒ Workers to wear reflective vests where exposed to traffic hazards. ☒ Where possible, park vehicles as protective shield from oncoming traffic. ☒ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ DOT signal devices will be used to re-route vehicles around work area, site entrances/exits. ☐ Flaggers will be used and have DOT Flagger Training; police detail where appropriate or required. ☒ Park vehicles in secure location away from heavy equipment use or other site operations. ☐ Mark temporary roadways clearly, provide berms/stop logs where needed.	
☐	RAILROAD/AIRPORT HAZARD	☐ Coordinate with rail company/airport and implement required safety measures ☐ Site workers to receive safety training for railroad/airport work.	
☒	OFF-ROAD DRIVING, USE OF ALL-TERRAIN VEHICLE	☒ For off road driving, do not exceed capability of vehicle ☐ Follow ATV specific procedures for training, safety equipment, operation.	
☐	TRANSPORTING MATERIALS, TOWING/HAULING LOADS	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.	
5. UTILITY-RELATED HAZARDS (for underground/overhead work) – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	OVERHEAD UTILITIES	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.	
☐	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.	
6. ELECTRICAL HAZARDS – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	WORKERS EXPOSED TO: ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/Transformer	☐ Implement electrical safe work practices commensurate with the work to be performed, pertaining to the following (as applicable): - Worker training/qualification - Electrical equipment and hazards, safe design features - Electrical safe work practices - Grounding, use of GFCIs - Electrical equipment installation, operation, maintenance, repair - Arc flash protection - Electrical equipment diagnostics	
☐	BASIC ELECTRICAL HAZARDS ☐ Equipment/tool use/operation ☐ Use of extension cords	☐ Control water-related hazards, in a manner appropriate for the job tasks/equipment/tool. ☐ Use extension cords/power cords properly, prevent damage, take out of service if damaged. ☐ Inspect tool/equipment/extension cords/power cords before each use. ☐ Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements ☐ Ensure live parts are guarded, enclosures secure. ☐ Enclosures, circuits properly labeled.	
☐	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate “authorized” personnel, notify “affected” personnel	
7. FALL HAZARDS – CHECK IF NOT ANTICIPATED: ☒			
Site-Specific Comments:			
☐	WORKING AT HEIGHTS ☐ Roof, skylight ☐ Elevated platform ☐ Holes, side opening ☐ Retaining wall, cliff, ledge ☐ Trench, excavation ☐ Protruding rebar	☐ Ensure guardrails present ☐ Use personal fall apparatus (PFA) ☐ Use tether or positioning device ☐ Restrict access to hazard (barriers, tape, sign) ☐ Ensure covers in place over holes ☐ Watch person	☐ Use fall protection net ☐ Restrict access beneath work to protect other site personnel from overhead hazards ☐ Install caps on protruding rebar
☐	LADDERS / STAIRS ☐ Extension ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs	☐ Provide instruction/review pertaining to safe ladder use ☐ Extension ladders are properly footed, secured, setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.	

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☐	AERIAL LIFT ☐ Scissor lift ☐ Extensible boom ☐ Articulated boom ☐ Vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use.
☐	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold	☐ Identify/coordinate operations with competent person ☐ Supported scaffold level, stable, proper attachments, tiebacks, planking, ☐ Suspended scaffolds anchored properly ☐ Guardrails present above 10 feet or personal fall apparatus used. ☐ Proper means of accessing scaffold (proper ladders, stair tower). ☐ Total height of free-standing scaffold not to exceed four times the minimum base dimension.
8. TOOLS, EQUIPMENT, MACHINERY – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☒	HAND TOOLS Eye injury, puncture/bruise/ laceration hazard	☒ Use proper tool for the job, maintain tools in good condition (no damage, cutting tools sharp, etc.) use appropriate PPE for hand/eye/body protection, plan for safe "follow through" motion, use vise/clamp/work surface to hold/stabilize work piece
☐	POWER TOOLS ☐ Eye/hand/body injury ☐ Fuel-related hazards ☐ Inhalation hazard ☐ Noise ☐ Sparks, heat, fire hazard ☐ Electrical hazards	☐ For all power tools: - Inspect tools to ensure safe operating condition before each use. - Use tool in accordance with manufacturer's specifications. - Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection - Provide training or verify operator qualification for use of power tool. - Stay clear of hazard zone, "line of fire" when working near where power tools are used. ☐ Use safety practices for refueling, fuel handling/transport/storage. ☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. ☐ For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. ☐ For electrical hazards, see # 6, "Electrical Hazards".
☐	WELDING, CUTTING ☐ Gas welding/cutting ☐ Arc welding/cutting	☐ Hot work permit system to be implemented. ☐ Operator properly protected (eye protection, clothing, apron, etc.) ☐ Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles) ☐ Protect nearby personnel from hazardous UV, IR light (shielding, curtain) ☐ Electrical safe work practices for arc welding ☐ Gas cylinder safe practices (secured, upright, caps on when not in use, prevent damage).
☐	EQUIPMENT/MACHINERY ☐ Point-of-operation hazards ☐ Pinch points, moving parts ☐ 'Struck-by,' 'caught between' ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☐ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Compressed air/gas ☐ Kinetic, stored energy ☐ Noise ☐ Lockout/tagout ☐ Emissions, discharge gases ☐ Working at heights, falls ☐ Lifting, repetitive motion ☐ Illumination ☐ Electrical (see below)	☐ *Working Near* Equipment/Machinery ☐ Work at safe distance/restrict access, ensure guards in place, heed warning signs ☐ Implement measures necessary for adequate illumination ☐ Control exposue to emission/discharge gases (ventilation, PPE, other means). ☐ Ensure safe practices for fuels/fluids/machine-related hazardous materials ☐ Use PPE or other safety practices for eye/hearing/hand/head/body protection ☐ Segregate combustible materials from hot surfaces/hot exhaust (minimum 3 feet) ☐ Operation/Maintenance/Repair of Equipment/Machinery (see applicable control measures above) ☐ Orient/locate equipment for safe access during operation and maintenance ☐ Use equipment/machinery in accordance with manufacturer's specifications ☐ Use safe lifting practices, minimize repetitive motion hazards ☐ Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices ☐ Secure long hair/loose clothing/hanging jewelry near moving/rotating parts ☐ Ensure appropriate warning signs are in place and heeded ☐ Use safe practices for fueling, fuel transport & storage. ☐ Operate fuel-powered equipment in well ventilated location. ☐ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy ☐ Implement control-of-hazardous-energy practices (lockout/tagout), designate "authorized" personnel, notify "affected" personnel ☐ Protect from fall hazards (safe ladder use, personal fall protection, guardrails, other) ☐
☐	ELECTRICAL HAZARDS	☐ Implement provisions of # 6, "Electrical Hazards"
9. MANUAL MATERIAL HANDLING, MATERIAL STORAGE – CHECK IF NOT APPLICABLE: ☒		

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
Site-Specific Comments: Cooler Lifting		
☒	LIFTING / ERGONOMIC Musculoskeletal strain, repetitive motion injury	☒ Use proper manual lifting techniques (straight back, bend at knees, firm grasp, firm footing). ☒ Seek assistance for lifting heavy objects (>50 lbs.) ☐ Use mechanical lifting equipment to reduce manual material handling hazard ☒ For repetitive motion activities, take breaks, switch hands, share task with others, employ other safe practices appropriate for the specific task(s).
☐	STORAGE OF MATERIALS See Sect. 12 for Chemical Storage	☐ Store materials in stable manner that prevents tipping, sliding, rolling, falling over. ☐ Materials stored in tiers to be stacked, racked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse ☐ Do not exceed load limits of racks, platform; ensure racks are stable, robust, secure ☐ On scaffold, do not store materials in excess of supplies needed for immediate use ☐ Ensure stored materials do not block aisles, passageways ☐ For used lumber, remove nails before stacking, and stack to be stable and self supporting, no higher than 20 feet (or 16 feet if lumber is to be handled manually) ☐ Debris will be removed regularly from storage area and place in designated area or disposed.
10. CONSTRUCTION OPERATIONS, HEAVY EQUIPMENT, HEAVY VEHICLES – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments:		
☐	HEAVY EQUIPMENT; CONSTRUCTION VEHICLES Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	☐ Trained/qualified persons operate all heavy equipment. ☐ No passengers on moving/operating equipment except where passenger seat/restraint is present. ☐ Equipment inspected upon mobilization and daily; maintained in good repair, backup alarms ☐ All leaks or defective safety equipment will be repaired before use. ☐ Operators required to use seatbelts. ☐ Eye contact with operator and use of hand signals prior to approaching near equipment. ☐ High visibility vests are required of all personnel in work area. ☐ Max. safe slope for each vehicle will be followed. ☐ Personnel to stay clear of swing radius of equipment. ☐ Spill equipment available for fuel and hydraulic fluid leaks. ☐ Equipment locked, secured, brakes set, buckets/forks lowered, when not in use.
☐	CRANES Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed by crane operator. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a dedicated channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to high winds. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Crane to be on level, stable base, dunnage used when necessary. ☐ Total weight of load not to exceed 50% of rated capacity for the crane radius and configuration. ☐ Rigging procedures – see Hoisting, Lifting, Rigging, below. ☐ Suspended personnel lifting is prohibited (unless per approved “man-lift” equipment). ☐ No personnel permitted beneath suspended loads.
☐	HOISTING, LIFTING, RIGGING ☐ Crane ☐ Drill rig ☐ Loader, excavator, etc. ☐ Mechanical, electrical hoist	☐ Identify, coordinate with competent person. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. ☐ Do not exceed loading limits of equipment. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane hooks will be equipped with safety latches.
☐	FORKLIFT Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Qualified operater, per established forklift training (certificate is required) ☐ Equipment inspected daily and documented on Forklift Preoperation Inspection Checklist ☐ Operators required to use seatbelts, and adhere to safe operating procedures.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		☐ Do not exceed lifting load limits. ☐ Forklift shall not be moved/driven with empty forks in raised position. ☐ When not in use, forks lowered, brake set, controls in neutral, key removed.
☐	EXCAVATION/TRENCHING ☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Overhead utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Activities under supervision/oversight of competent person ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Implement underground utility clearance procedures. ☐ Hand digging within 3' of utility locations. ☐ Excavations to be protected by perimeter fencing (not barricade tape) ☐ Use trench boxes in accordance with proper procedures. ☐ Workers in trenches to be within 25 feet of ladder or sloped entryway.
☐	DRILLING ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Underground utilities, aboveground ☐ Spills ☐ See Equipment/Machinery	☐ Contractor inspects drill rig daily before use. ☐ Drill rig equipped with operational emergency stop. ☐ Highpressure lines equipped with whip checks. ☐ High visibility vests, hard hats are being worn near the equipment. ☐ Operators and helpers will maintain a safe distance to moving parts. Individuals working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☐ Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. ☐ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig. ☐ Follow underground utility clearance procedures. ☐ Area is surveyed for overhead utilities, safe clearance distance maintained. ☐ Hearing protection is used when working near the rig. ☐ Spill equipment is available for fuel and hydraulic fluid leaks.
☐	DEMOLITION	☐ Develop/implement demolition safety plan
☐	BLASTING	☐ Develop/implement blasting safety plan

11. CONFINED SPACES, HAZARDOUS ENCLOSED or INDOOR SPACES – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	CONFINED SPACE(S) ☐ Permit required ☐ Non-permit required Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	☐ For personnel working near confined spaces: - Confined spaces have been identified, labeled. - Communication system in place to prevent unauthorized entry. ☐ For permit-required confined space entry, see separate entry permit. - All entrants, attendants, supervisors are trained/qualified. - Hazards properly characterized - Necessary equipment for safe entry utilized (access, retrieval, air monitoring) - Arrangements for rescue team have been made. ☐ For entry into a non-permit confined space, see site specific procedures delineated above in “site-specific comments,” or see alternate/attached safety work plan.
☐	ENCLOSED/INDOOR SPACE(S) ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/Sub-basement ☐ Crawl space entry ☐ Indoor equipment/drilling	*For indoor use of gasoline/propane/diesel equipment:* ☐ Duct exhaust to outdoors, and/or introduce fresh air using ventilation/blowers/fans. ☐ Perform air monitoring (see section on Air Monitoring) *For entry into potentially hazardous indoor or enclosed spaces:* ☐ Ventilate and/or perform air monitoring for anticipated hazards. ☐ If space classified as confined space, follow confined space entry requirements (above).

12. COMMERCIAL CHEMICAL PRODUCTS USED AT WORK SITE – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments: Alconox, Isopropyl Alcohol, Nitric Acid

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☒	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☒ Safety Data Sheets available, either on site or readily available within same work shift ☒ Containers labelled properly ☒ Workers trained on hazards ☒ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☐	COMPRESSED GAS(ES):	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench ☐ Store/use in a manner to prevent asphyxiation hazard ☐ Segregate oxygen and fuel gases by distance (20’) or barrier ☐ Control ignition sources, no smoking signage ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	FLAMM./COMBUST. LIQ.	☐ Proper storage (flam. storage cabinets, other storage precautions) ☐ Control ignition sources ☐ Grounding and bonding where appropriate
☐	CORROSIVES	☐ Handle with care, use appropriate eye/face/skin protection ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate
☐	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption; use PPE as appropriate, conduct air monitoring as appropriate.
☐	CHEMICAL STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar ☐ Incompatible chemicals segregated ☐ Secondary containment ☐ Safety equipment will be located near chemical storage.

13. CHEMICAL HAZARDS FROM ON-SITE CONTAMINANTS, OPERATIONS, EMISSIONS – CHECK IF N/A: ☐

Site-Specific Comments:

CHECK AS APPROPRIATE BELOW. PROVIDE ADDITIONAL INFO. AS APPROPRIATE, IN SITE-SPECIFIC HAZARD ANALYSIS ABOVE.

☒ Soil/groundwater contaminants (historical release)
☐ Recent release, known high concentrations
☐ Former chemical disposal site, landfill
☐ Urban fill, residual contaminants
☐ Containerized waste (drums, process equipment)
☐ Buried drums (known or potential)
☐ Large containers, potential for spills
☐ Emissions from active industrial processes
☐ Emissions from welding/cutting/hot work
☐ Carbon monoxide (vehicle/equipment exhaust)
☐ Contaminated building surfaces
☐ Unexploded ordnance
☐ Explosive dust

☐ Oxygen deficiency
☒ Chlorinated VOCs (volatile org. cpds.)
☒ BTEX, petroleum derived VOCs
☐ Fuel oils, petroleum, waste oil, lubricants
☒ Metals, metal compounds, metal dusts
☐ Elemental mercury
☒ Polyaromatic hydrocarbons (PAHs)
☒ Polychlorinated biphenyls (PCBs)
☐ Potential for flammable vapors
☐ Potential for flammable gas (methane)
☐ Corrosive, acids/caustics, strong irritants
☐ Sulfides, hydrogen sulfide (H2S)
☐ Cyanides, hydrogen cyanide (HCN)

☐ Asbestos
☐ Lead paint
☐ Pesticides, herbicides, fungicides
☐ Sensitizers
☐ Radioactive contaminants
☐ Other:

☐ FOR SITE REGULATED AS “UNCONTROLLED HAZ. WASTE SITE,” e.g. **REGULATED BY HAZWOPER** (OSHA 29 CFR 1910.120)

- Establish work zones & site control plan (Exclusion Zone - EZ, Contaminant Reduction Zone - CRZ, Support Zone - SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field expience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program.
- “Peripheral” site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection through engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination, spill containment (see Sections B and C, “Health and Safety Equipment/Gear” and “Air Monitoring”
- Include emergency response program in H&S plan.

☒ FOR SITE WITH CHEMICAL CONTAMINANTS BUT **NOT REGULATED BY HAZWOPER**

- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard
- Implement appropriate controls to minimize worker exposure (engineering controls, work practices) to levels below OSHA PELs.
- Use PPE as needed (see B, “Health and Safety Equipment/Gear”).
- Conduct air monitoring or personal air sampling to monitor and/or evaluate worker exposure (see Section C, “Air Monitoring”).

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☐	ATMOSPHERIC HAZARDS GENERATED BY EXHAUST FROM OPERATING EQUIPMENT ☐ Position work upwind of exhaust source ☐ Use blowers, fans to dissipate atmospheric hazards ☐ Conduct air monitoring (see Section C, ”Air Monitoring”).	
☐	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring is not anticipated with the current scope of work. ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

EMERGENCY RESPONSE **(911 Service is Available ☒ Yes ☐ No)** ☒ Verify wireless coverage at site, use alternate communication procedures as needed.

Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph’s Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Urgent Care Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067

Emergency Response Comments:

Date:	
Project Name: Former Sperry Remington Site North	
THA Title: Groundwater Sampling	
Subcontractor Name(s):	
Geosyntec Representative (reviewed by):	**Michael Hansen**
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

Geosyntec consultants

PRE-WORK TASK HAZARD ANALYSIS (THA)

TASK/ACTIVITY:	Stormwater Structure Inspection	**Date:**	7/18/2014
Project Name:	Former Sperry Remington Site North	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Geosyntec Proj. Mngr.:**	Aron Krasnopoler
Project Address:	777 Sourth Main Street, Elmira, New York	**Geosyntec Proj. Dir.:**	Paul Brookner
Task Description:	Manhole SW-73 will be inspected for structural integrity, hydraulic connections to the storm sewer system and the presence of accumulated fine-grained material. If present, the depth fo the material will be measured, to the extent practical, and recorded. If an adequate volume of material is present, a composite sample for laboratory analyses will be collected.		

A. SUMMARY OF SITE-SPECIFIC TASK HAZARD ANALYSIS

Site-Specific Comments:

Sub-Tasks, Activities	Hazards	Hazard Controls
Task 1: Mobilize to Site	-Driving -Mobilization to and around unfamiliar facility	- Drive carefully to facility, be well rested and avoid distracted driving. - Review scope of work.
Task 2: Locate SW-73 Manhole	-Slips/trips/falls -Heat/cold stress -Biohazards: snakes, bees, spider, ticks, poison ivy	-Pay close attention to foot placement; slow deliberate movement. -Dress for weather conditions. Apply sunscreen if needed. -Beaware of surroundings and avoid biohazards.
Task 3: Remove manhole lid and inspect conditions in sump from ground surface. Do not enter the manhole.	-Same hazards noted above for Task 2. -lifting/removing manhole lid -falling in manhole/sump Potential contaminant exposure: VOCs, PCBs, SVOCs	-Same hazard controls noted above for Task 2. -don level D personal protective equipment (PPE). PPE will include: safety glasses, safety vests, steel toe boots, and nitrile gloves. -Avoid direct contact with contaminated matrices and/or equipment. -Use safe lifting practices for manhole -Keep center of gravity outside of manhole and close manhole when observations are complete. -Do not break plane of manhole
Task 4: If necessary, collect fine-grained sample from the manhole using a reach sampler or similar device. Do not enter the manhole.	-Same hazards as Task 3. -Potential contaminant exposure: VOCs, PCBs, SVOCs -Splash hazards	-Continue to wear level D PPE and minimize contact with water. -Do not break plane of manhole

B. HEALTH AND SAFETY EQUIPMENT/GEAR

Site-Specific Comments:

☒	PERSONAL PROTECTIVE EQUIPMENT (PPE)**:**	Level(s) of Protection (for chemical hazards):	☐ Level D (standard work clothes, no chemical protective clothing) ☒ Modified Level D (chemical protective clothing in addition to standard work clothes) ☐ Level C (air purifying respirator or dust mask, with chemical protective clothing) ☐ Level B or A (air supplied respirator, chemical protective suit)

		☒ Hard-toed boots/shoes
		☐ Hardhat
		☐ Noise/hearing protection
		☒ High-visibility/reflective vest
		☒ Work gloves
		☒ Eye/face protection
		  ☒ Safety glasses with side shields
		  ☐ Goggles
		  ☐ Face shield
		  ☐ Other:
		☒ Chemical protective clothing
		  ☒ Gloves, type: Nitrile
		  ☐ Coveralls, type:
		  ☐ Outer boots, boot covers
		  ☐ Other:
			☐ Respiratory Protection
			  ☐ Disposable n-95 face mask
			  ☐ Half-face air-purifying respirator
			  ☐ Full-face air-purifying respirator
			  ☐ Resp-cartridge, type:
			  ☐ Other:
			☐ Personal flotation device
			☐ Personal fall apparatus
			☐ Fire retardant clothing
			☐ EH (Electrical Hazard) rated boots, gloves
			☐ Other:

☒	OTHER H&S EQUIPMENT and GEAR:	☒ Fire extinguisher ☐ Caution tape ☒ Traffic control warning devices ☐ Warning signs or placards ☐ Decon supplies for personal decon ☐ Portable ground fault circuit interrupter (GFCI)	☐ Lockout/tagout equipment ☐ Ventilation equipment (fan, blower) ☒ First aid kit ☒ Vehicle emergency kit (flares, lights, reflective device) ☐ Other:
C. AIR MONITORING – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	INSTRUMENT(S), EQUIPMENT	☐ PID, Lamp energy: eV ☐ FID ☐ Carbon monoxide detector ☐ Hydrogen sulfide detector ☐ Oxygen (O_2) detector	☐ Flammable gas (LEL) detector ☐ Particulate (dust) detector ☐ Calibration kit for each detector type ☐ Others:
☐	ACTION LEVELS FOR **O2/LEL**	☐ Oxygen	≤19.5% - provide ventilation to raise oxygen to acceptable levels, or utilize Level B. ≥23.0% - provide ventilation to lower oxygen to acceptable levels, or utilize Level B and implement controls for fire hazards, control ignition sources.
		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10% through passive dissipation, or active vapor control measures.

☐	ACTION LEVELS FOR **TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D**	**Use levels C or B, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D.**
		☐ VOCs	< ppm	ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)
		☐ Carbon Monoxide	< 35 ppm	≥35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< mg/m^3	> mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
1. PREMISES/ENVIRONMENTAL HAZARDS		
Site-Specific Comments: Open Manholes will be blocked by traffic cones and/or caution tape. A dedicated watch person may also be used.		
☒	LOCATION HAZARDS ☒ Outdoor field work ☒ Urban, suburban ☐ Rural, remote location ☐ Indoor field work ☐ Operating facility ☐ Vacant facility ☐ Water hazards	☒ Use routine safety precautions commensurate with routine work environment conditions ☐ For non-routine, unique, or severe location hazards, see site-specific safety comments above. ☐ For water-related work, see #2, "Water Hazards" ☐ For worksite violence/security risks, see #3, "Violence, Security, Working Alone" ☒ For transportation related hazards, see #5, "Worksite Traffic, Vehicle, Transportation Hazards" ☒ For utility-related hazards, see # 6, "Utility-Related Hazards ☒ For atmospheric hazards in enclosed, indoor, or confined spaces, see # 11 "Confined Spaces or Hazardous Enclosed/Indoor Spaces"
☒	WALKING/WORKING SURFACES, HOUSEKEEPING ☒ Uneven, rough terrain, riprap ☒ Slippery surfaces ☒ Holes, pits, openings ☐ Puncture, foot hazards	☒ Keep work areas clean, orderly, dispose of trash/debris, maintain sanitary conditions. ☒ Walkways are cleared of equipment, excavated material, tools and debris, snow ☒ Holes, pits, openings to be covered or otherwise marked or guarded ☐ Apply absorbent, salt or sand, for traction/slip resistance on slippery/icy/wet surfaces ☒ Wear proper work boots/shoes with ankle support and/or traction, as appropriate for conditions
☒	TEMPERATURE/WEATHER ☒ Heat Stress ☒ Cold Stress ☒ Severe Weather ☒ Lightning	☒ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☒ Provide sufficient fluids, shade, breaks, other precautions as appropriate to adderss heat hazards. ☒ Provide protection from sun (sun screen, shaded brake area). ☐ For cold stress, wear multiple layers, protect from wind/wet, frequent break in warm location. ☐ In high wind, discontinue working at heights (e.g. on ladders, scaffold, aerial lift, similar). ☒ Use precautions for lightning, thunderstorm, hale, tornado (monitor weather, "30/30 rule," shelter)
☒	BIOLOGICAL HAZARDS ☒ Insects, spiders, ticks ☐ Wild/feral/pet animals ☐ Mold, fungi ☒ Poisonous plants ☐ Bird Guano ☐ Infectious, wastewater, sewer	☒ Utilize safety practices commensurate with risk of biting/stinging insects, wild/feral/pet animals. ☒ For poisonous plants (poison ivy/oak/sumac/etc.), minimize exposed skin area, wear coveralls, use barrier cream/wash (Technu products or similar), as appropriate. For biological exposure hazards, use protective measures commensurate with hazard: ☒ Minor-moderate hazard - use ordinary hygiene practices, protective gloves, hand washing. ☐ Moderate-severe hazard - add protective clothing, respirator, decon, as appropriate. ☐ Bloodborne pathogen (human infectious agents) - implement "Universal Precautions"

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
	☐ Bloodborne pathogens	
☐	HAZARDOUS NOISE	☐ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period, or intermittent….)
☐	OVERHEAD HAZARDS, FALLING OBJECTS	☐ Wear hardhat when exposed to overhead hazards, “bump” hazards, falling objects ☐ Cordon off hazard zones, route access/egress around hazards of falling objects ☐ Secure objects from falling ☐ Provide overhead protection (canopy) to protect public pedestrians, workers
☐	ILLUMINATION ☐ Night work ☐ Indoor work	☐ Make site-specific arrangements for illumination of work areas and access routes.
2. BOATING, WATER, WET LOCATIONS, FLOOD, ETC. – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	WATER HAZARDS ☐ Drowning, hypothermia ☐ Boat, barge, raft ☐ Wading, wetland, mud/silt ☐ Dam release, flood, tide ☐ Diving	☐ Wear appropriate Coast Guard-approved Personal Flotation Device (PFD) ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares) ☐ Use fuel safety practices, fire extinguisher present in boat ☐ See site-specific safety comments above.
3. VIOLENCE, PUBLIC PROTECTION, WORKING ALONE – SPECIAL MEASURES – CHECK IF NOT ANTICIPATED: ☒		
Site-Specific Comments:		
☐	PERSONAL SECURITY, HIGH CRIME AREA	☐ Employ standard precautions, which may include: conduct work only during daylight hours, use buddy system, avoid parking in secluded location, lock vehicles, hide valuable items in vehicles from plain view ☐ See site-specific safety comments above for project-specific security measures.
☐	PUBLIC AT RISK, SITE SECURITY	☐ Provide safe pedestrian route around work areas, use appropriate barriers, signs, warning devices. ☐ Provide covers over excavation, secure fencing, overnight protection ☐ Provide protection from overhead hazards (canopy, etc.) where public at risk of overhead hazards ☐ Provide secure locked storage of hazardous chemicals, hazardous equipment, etc.
☐	WORKING ALONE	☐ Establish “check in” procedure with supervisor or project manager (arrival, mid-day, departure) ☐ Additional measures, as appropriate for the working conditions.
4. DRIVING, TRAFFIC, TRANSPORTATION HAZARDS – CHECK IF NOT APPLICABLE: ☐		
Site-Specific Comments:		
☒	DRIVING HAZARDS ☒ Routine work travel ☐ Unfamiliar location ☐ Unfamiliar vehicle ☒ Overnight travel, distance	☒ Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, no texting, safe cell phone use, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☒ Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Familiarize yourself with vehicle operational controls before operating unfamiliar vehicle.
☒	WORKERS EXPOSED TO TRAFFIC HAZARDS ☒ In/near public or private roadway ☒ Parking lot, driveway ☐ Worksite, construction site traffic	☒ Workers to wear reflective vests where exposed to traffic hazards. ☒ Where possible, park vehicles as protective shield from oncoming traffic. ☒ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ DOT signal devices will be used to re-route vehicles around work area, site entrances/exits. ☐ Flaggers will be used and have DOT Flagger Training; police detail where appropriate or required. ☒ Park vehicles in secure location away from heavy equipment use or other site operations. ☐ Mark temporary roadways clearly, provide berms/stop logs where needed.
☐	RAILROAD/AIRPORT HAZARD	☐ Coordinate with rail company/airport and implement required safety measures ☐ Site workers to receive safety training for railroad/airport work.
☐	OFF-ROAD DRIVING, USE OF ALL-TERRAIN VEHICLE	☐ For off road driving, do not exceed capability of vehicle ☐ Follow ATV specific procedures for training, safety equipment, operation.
☐	TRANSPORTING MATERIALS, TOWING/HAULING LOADS	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
5. UTILITY-RELATED HAZARDS (for underground/overhead work) – CHECK IF NOT APPLICABLE: ☒		
Site-Specific Comments:		
☐	OVERHEAD UTILITIES	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)	
☐	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.	
6. ELECTRICAL HAZARDS – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	WORKERS EXPOSED TO: ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/Transformer	☐ Implement electrical safe work practices commensurate with the work to be performed, pertaining to the following (as applicable): - Worker training/qualification - Electrical equipment and hazards, safe design features - Electrical safe work practices - Grounding, use of GFCIs - Electrical equipment installation, operation, maintenance, repair - Arc flash protection - Electrical equipment diagnostics	
☐	BASIC ELECTRICAL HAZARDS ☐ Equipment/tool use/operation ☐ Use of extension cords	☐ Control water-related hazards, in a manner appropriate for the job tasks/equipment/tool. ☐ Use extension cords/power cords properly, prevent damage, take out of service if damaged. ☐ Inspect tool/equipment/extension cords/power cords before each use. ☐ Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements ☐ Ensure live parts are guarded, enclosures secure. ☐ Enclosures, circuits properly labeled.	
☐	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate “authorized” personnel, notify “affected” personnel	
7. FALL HAZARDS – CHECK IF NOT ANTICIPATED: ☐			
Site-Specific Comments:			
☒	WORKING AT HEIGHTS ☐ Roof, skylight ☐ Elevated platform ☒ Holes, side opening ☐ Retaining wall, cliff, ledge ☐ Trench, excavation ☐ Protruding rebar	☐ Ensure guardrails present ☐ Use personal fall apparatus (PFA) ☐ Use tether or positioning device ☒ Restrict access to hazard (barriers, tape, sign) ☐ Ensure covers in place over holes ☒ Watch person	☐ Use fall protection net ☐ Restrict access beneath work to protect other site personnel from overhead hazards ☐ Install caps on protruding rebar
☐	LADDERS / STAIRS ☐ Extension ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs	☐ Provide instruction/review pertaining to safe ladder use ☐ Extension ladders are properly footed, secured, setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.	
☐	AERIAL LIFT ☐ Scissor lift ☐ Extensible boom ☐ Articulated boom ☐ Vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use.	
☐	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold	☐ Identify/coordinate operations with competent person ☐ Supported scaffold level, stable, proper attachments, tiebacks, planking, ☐ Suspended scaffolds anchored properly ☐ Guardrails present above 10 feet or personal fall apparatus used. ☐ Proper means of accessing scaffold (proper ladders, stair tower). ☐ Total height of free-standing scaffold not to exceed four times the minimum base dimension.	
8. TOOLS, EQUIPMENT, MACHINERY – CHECK IF NOT APPLICABLE: ☒			
Site-Specific Comments:			
☐	HAND TOOLS Eye injury, puncture/bruise/ laceration hazard	☐ Use proper tool for the job, maintain tools in good condition (no damage, cutting tools sharp, etc.) use appropriate PPE for hand/eye/body protection, plan for safe “follow through” motion, use vise/clamp/work surface to hold/stabilize work piece	

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☐	POWER TOOLS ☐ Eye/hand/body injury ☐ Fuel-related hazards ☐ Inhalation hazard ☐ Noise ☐ Sparks, heat, fire hazard ☐ Electrical hazards	☐ For all power tools: - Inspect tools to ensure safe operating condition before each use. - Use tool in accordance with manufacturer's specifications. - Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection - Provide training or verify operator qualification for use of power tool. - Stay clear of hazard zone, "line of fire" when working near where power tools are used. ☐ Use safety practices for refueling, fuel handling/transport/storage. ☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. ☐ For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. ☐ For electrical hazards, see # 6, "Electrical Hazards".
☐	WELDING, CUTTING ☐ Gas welding/cutting ☐ Arc welding/cutting	☐ Hot work permit system to be implemented. ☐ Operator properly protected (eye protection, clothing, apron, etc.) ☐ Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles) ☐ Protect nearby personnel from hazardous UV, IR light (shielding, curtain) ☐ Electrical safe work practices for arc welding ☐ Gas cylinder safe practices (secured, upright, caps on when not in use, prevent damage).
☐	EQUIPMENT/MACHINERY ☐ Point-of-operation hazards ☐ Pinch points, moving parts ☐ 'Struck-by,' 'caught between' ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☐ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Compressed air/gas ☐ Kinetic, stored energy ☐ Noise ☐ Lockout/tagout ☐ Emissions, discharge gases ☐ Working at heights, falls ☐ Lifting, repetitive motion ☐ Illumination ☐ Electrical (see below)	☐ *Working Near* Equipment/Machinery ☐ Work at safe distance/restrict access, ensure guards in place, heed warning signs ☐ Implement measures necessary for adequate illumination ☐ Control exposue to emission/discharge gases (ventilation, PPE, other means). ☐ Ensure safe practices for fuels/fluids/machine-related hazardous materials ☐ Use PPE or other safety practices for eye/hearing/hand/head/body protection ☐ Segregate combustible materials from hot surfaces/hot exhaust (minimum 3 feet) ☐ Operation/Maintenance/Repair of Equipment/Machinery (see applicable control measures above) ☐ Orient/locate equipment for safe access during operation and maintenance ☐ Use equipment/machinery in accordance with manufacturer's specifications ☐ Use safe lifting practices, minimize repetitive motion hazards ☐ Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices ☐ Secure long hair/loose clothing/hanging jewelry near moving/rotating parts ☐ Ensure appropriate warning signs are in place and heeded ☐ Use safe practices for fueling, fuel transport & storage. ☐ Operate fuel-powered equipment in well ventilated location. ☐ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy ☐ Implement control-of-hazardous-energy practices (lockout/tagout), designate "authorized" personnel, notify "affected" personnel ☐ Protect from fall hazards (safe ladder use, personal fall protection, guardrails, other) ☐
☐	ELECTRICAL HAZARDS	☐ Implement provisions of # 6, "Electrical Hazards"

9. MANUAL MATERIAL HANDLING, MATERIAL STORAGE – CHECK IF NOT APPLICABLE: ☐

Site-Specific Comments:

☒	LIFTING / ERGONOMIC Musculoskeletal strain, repetitive motion injury	☒ Use proper manual lifting techniques (straight back, bend at knees, firm grasp, firm footing). ☒ Seek assistance for lifting heavy objects (>50 lbs.) ☐ Use mechanical lifting equipment to reduce manual material handling hazard ☐ For repetitive motion activities, take breaks, switch hands, share task with others, employ other safe practices appropriate for the specific task(s).
☐	STORAGE OF MATERIALS See Sect. 12 for Chemical Storage	☐ Store materials in stable manner that prevents tipping, sliding, rolling, falling over. ☐ Materials stored in tiers to be stacked, racked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse ☐ Do not exceed load limits of racks, platform; ensure racks are stable, robust, secure ☐ On scaffold, do not store materials in excess of supplies needed for immediate use ☐ Ensure stored materials do not block aisles, passageways ☐ For used lumber, remove nails before stacking, and stack to be stable and self supporting, no higher than 20 feet (or 16 feet if lumber is to be handled manually) ☐ Debris will be removed regularly from storage area and place in designated area or disposed.

10. CONSTRUCTION OPERATIONS, HEAVY EQUIPMENT, HEAVY VEHICLES – CHECK IF NOT ANTICIPATED: ☒

Site-Specific Comments:

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
☐	HEAVY EQUIPMENT; CONSTRUCTION VEHICLES Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	☐ Trained/qualified persons operate all heavy equipment. ☐ No passengers on moving/operating equipment except where passenger seat/restraint is present. ☐ Equipment inspected upon mobilization and daily; maintained in good repair, backup alarms ☐ All leaks or defective safety equipment will be repaired before use. ☐ Operators required to use seatbelts. ☐ Eye contact with operator and use of hand signals prior to approaching near equipment. ☐ High visibility vests are required of all personnel in work area. ☐ Max. safe slope for each vehicle will be followed. ☐ Personnel to stay clear of swing radius of equipment. ☐ Spill equipment available for fuel and hydraulic fluid leaks. ☐ Equipment locked, secured, brakes set, buckets/forks lowered, when not in use.
☐	CRANES Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed by crane operator. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a dedicated channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to high winds. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Crane to be on level, stable base, dunnage used when necessary. ☐ Total weight of load not to exceed 50% of rated capacity for the crane radius and configuration. ☐ Rigging procedures – see Hoisting, Lifting, Rigging, below. ☐ Suspended personnel lifting is prohibited (unless per approved “man-lift” equipment). ☐ No personnel permitted beneath suspended loads.
☐	HOISTING, LIFTING, RIGGING ☐ Crane ☐ Drill rig ☐ Loader, excavator, etc. ☐ Mechanical, electrical hoist	☐ Identify, coordinate with competent person. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. ☐ Do not exceed loading limits of equipment. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane hooks will be equipped with safety latches.
☐	FORKLIFT Hazards: Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks	**In addition to general safety practices for heavy equipment (above), as applicable:** ☐ Qualified operater, per established forklift training (certificate is required) ☐ Equipment inspected daily and documented on Forklift Preoperation Inspection Checklist ☐ Operators required to use seatbelts, and adhere to safe operating procedures. ☐ Do not exceed lifting load limits. ☐ Forklift shall not be moved/driven with empty forks in raised position. ☐ When not in use, forks lowered, brake set, controls in neutral, key removed.
☐	EXCAVATION/TRENCHING ☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Overhead utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Activities under supervision/oversight of competent person ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Implement underground utility clearance procedures. ☐ Hand digging within 3' of utility locations. ☐ Excavations to be protected by perimeter fencing (not barricade tape) ☐ Use trench boxes in accordance with proper procedures. ☐ Workers in trenches to be within 25 feet of ladder or sloped entryway.

HAZARD		**HAZARD CONTROLS (check all that apply and comment as required)**
☐	DRILLING ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Underground utilities, aboveground ☐ Spills ☐ See Equipment/Machinery	☐ Contractor inspects drill rig daily before use. ☐ Drill rig equipped with operational emergency stop. ☐ Highpressure lines equipped with whip checks. ☐ High visibility vests, hard hats are being worn near the equipment. ☐ Operators and helpers will maintain a safe distance to moving parts. Individuals working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☐ Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. ☐ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig. ☐ Follow underground utility clearance procedures. ☐ Area is surveyed for overhead utilities, safe clearance distance maintained. ☐ Hearing protection is used when working near the rig. ☐ Spill equipment is available for fuel and hydraulic fluid leaks.
☐	DEMOLITION	☐ Develop/implement demolition safety plan
☐	BLASTING	☐ Develop/implement blasting safety plan

11. CONFINED SPACES, HAZARDOUS ENCLOSED or INDOOR SPACES – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments: Manhole must not be entered by Geosyntec.

☐	CONFINED SPACE(S) ☐ Permit required ☐ Non-permit required Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	☐ For personnel working near confined spaces: - Confined spaces have been identified, labeled. - Communication system in place to prevent unauthorized entry. ☐ For permit-required confined space entry, see separate entry permit. - All entrants, attendants, supervisors are trained/qualified. - Hazards properly characterized - Necessary equipment for safe entry utilized (access, retrieval, air monitoring) - Arrangements for rescue team have been made. ☐ For entry into a non-permit confined space, see site specific procedures delineated above in “site-specific comments,” or see alternate/attached safety work plan.
☐	ENCLOSED/INDOOR SPACE(S) ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/Sub-basement ☐ Crawl space entry ☐ Indoor equipment/drilling	*For indoor use of gasoline/propane/diesel equipment:* ☐ Duct exhaust to outdoors, and/or introduce fresh air using ventilation/blowers/fans. ☐ Perform air monitoring (see section on Air Monitoring) *For entry into potentially hazardous indoor or enclosed spaces:* ☐ Ventilate and/or perform air monitoring for anticipated hazards. ☐ If space classified as confined space, follow confined space entry requirements (above).

12. COMMERCIAL CHEMICAL PRODUCTS USED AT WORK SITE – CHECK IF NOT APPLICABLE: ☒

Site-Specific Comments:

☐	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☐ Safety Data Sheets available, either on site or readily available within same work shift ☐ Containers labelled properly ☐ Workers trained on hazards ☐ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☐	COMPRESSED GAS(ES):	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench ☐ Store/use in a manner to prevent asphyxiation hazard ☐ Segregate oxygen and fuel gases by distance (20’) or barrier ☐ Control ignition sources, no smoking signage ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	FLAMM./COMBUST. LIQ.	☐ Proper storage (flam. storage cabinets, other storage precautions) ☐ Control ignition sources ☐ Grounding and bonding where appropriate

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
☐	CORROSIVES	☐ Handle with care, use appropriate eye/face/skin protection ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate
☐	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption; use PPE as appropriate, conduct air monitoring as appropriate.
☐	CHEMICAL STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar ☐ Incompatible chemicals segregated ☐ Secondary containment ☐ Safety equipment will be located near chemical storage.

13. CHEMICAL HAZARDS FROM ON-SITE CONTAMINANTS, OPERATIONS, EMISSIONS – CHECK IF N/A: ☐

Site-Specific Comments:

CHECK AS APPROPRIATE BELOW. PROVIDE ADDITIONAL INFO. AS APPROPRIATE, IN SITE-SPECIFIC HAZARD ANALYSIS ABOVE.

☒ Soil/groundwater contaminants (historical release)
☐ Recent release, known high concentrations
☐ Former chemical disposal site, landfill
☐ Urban fill, residual contaminants
☐ Containerized waste (drums, process equipment)
☐ Buried drums (known or potential)
☐ Large containers, potential for spills
☐ Emissions from active industrial processes
☐ Emissions from welding/cutting/hot work
☐ Carbon monoxide (vehicle/equipment exhaust)
☐ Contaminated building surfaces
☐ Unexploded ordnance
☐ Explosive dust

☐ Oxygen deficiency
☒ Chlorinated VOCs (volatile org. cpds.)
☒ BTEX, petroleum derived VOCs
☐ Fuel oils, petroleum, waste oil, lubricants
☒ Metals, metal compounds, metal dusts
☐ Elemental mercury
☒ Polyaromatic hydrocarbons (PAHs)
☒ Polychlorinated biphenyls (PCBs)
☐ Potential for flammable vapors
☐ Potential for flammable gas (methane)
☐ Corrosive, acids/caustics, strong irritants
☐ Sulfides, hydrogen sulfide (H2S)
☐ Cyanides, hydrogen cyanide (HCN)

☐ Asbestos
☐ Lead paint
☐ Pesticides, herbicides, fungicides
☐ Sensitizers
☐ Radioactive contaminants
☐ Other:

☐ FOR SITE REGULATED AS "UNCONTROLLED HAZ. WASTE SITE," e.g. **REGULATED BY HAZWOPER** (OSHA 29 CFR 1910.120)

- Establish work zones & site control plan (Exclusion Zone - EZ, Contaminant Reduction Zone - CRZ, Support Zone - SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field expience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program.
- "Peripheral" site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection through engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination, spill containment (see Sections B and C, "Health and Safety Equipment/Gear" and "Air Monitoring"
- Include emergency response program in H&S plan.

☒ FOR SITE WITH CHEMICAL CONTAMINANTS BUT **NOT REGULATED BY HAZWOPER**

- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard
- Implement appropriate controls to minimize worker exposure (engineering controls, work practices) to levels below OSHA PELs.
- Use PPE as needed (see B, "Health and Safety Equipment/Gear").
- Conduct air monitoring or personal air sampling to monitor and/or evaluate worker exposure (see Section C, "Air Monitoring").

☐ ATMOSPHERIC HAZARDS GENERATED BY EXHAUST FROM OPERATING EQUIPMENT

☐ Position work upwind of exhaust source
☐ Use blowers, fans to dissipate atmospheric hazards
☐ Conduct air monitoring (see Section C, "Air Monitoring").

☐	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring is not anticipated with the current scope of work. ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

EMERGENCY RESPONSE **(911 Service is Available ☒ Yes ☐ No)** ☒ Verify wireless coverage at site, use alternate communication procedures as needed.

Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph's Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Urgent Care Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100

PRE-WORK TASK HAZARD ANALYSIS (THA)

HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**		
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067
Emergency Response Comments:			

Date:	
Project Name: Former Sperry Remington Site North	
THA Title: Stormwater Structure Inspection	
Subcontractor Name(s):	
Geosyntec Representative (reviewed by):	**Michael Hansen**
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

Geosyntec consultants

PRE-WORK THA

THA Title:	High Volume Sampling (HVS)	**Date:**	6/10/14
Project Name:	Elmira Wetlands	**Client Name:**	Unisys Corporation
Project Number:	MN0832	**Client Project Manager:**	Kevin Krueger
Project Location:	Elmira NY	**Geosyntec Project Manager:**	Aron Krasnopoler
Scope of Work Summary:	Building survey, indoor and outdoor air sampling, HVS point installation, high volume sub-slab purge and sampling		

Work Steps	**Process or Activity**	**Hazards**	**Hazard Control**
1)Walk throughout the school building to confirm HVS test locations		Slips, trips, falls	Pay attention to presence of electrical cords and wires. .
2)Indoor Air and Outdoor Air Sampling		Slips, trips, falls	Pay attention to presence of objects and wet spots on floor surfaces.
3) Sub-slab suction and monitoring point installation		Asbestos exposure Slips, trips, falls Noise from Drill Dust and particulatesSub-slab utilities	Asbestos floor material will be removed by a certified asbestos mitigator prior to work. Pay attention to presence of electrical cords and wires. Wear ear plugs as necessary if loud noises are present. Eye protection for dust and particulates. Capture dust during drilling with a vacuum. Confirm that underground electrical and other utilities are not present in the proposed locations prior to drilling.
4)HPVS Sampling and Pneumatic Testing		Slips, trips, falls Noise from Suction Fan	Pay attention to presence of electrical cords and wires. Wear ear plugs as necessary if loud noises are present. Eye protection for dust and particulates when working with vents.

Min. Personal Protective Equipment (PPE):	Ear plugs, Steel-toed boots

Individuals Must Sign the last page of this THA after review.

	HAZARD	**HAZARD CONTROLS (check all that apply and comment as required)**
WALKING/WORKING SURFACES (EHS 210, 501)		
☒	☐ Uneven terrain ☐ Slippery surfaces	☐ Walkways are cleared of equipment, vegetation, excavated material, tools and debris ☐ Pits and floor openings are covered or otherwise guarded ☒ Work areas are illuminated adequately; field operations are not conducted before sunrise or after sunset unless adequate lighting is provided. ☐ Spills are cleaned up promptly ☐ Salt applied to icy areas, snow cleared from walkways
☐	LADDERS / STAIRS ☐ Extension Ladders ☐ Step Ladders ☐ Fixed Ladders ☐ Stairs	☐ Employees trained in safe ladder use at safety meeting ☐ Extension ladders are properly footed, secured at top, and setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. ☐ Ladders/Stairs Comments: ☐ Never use a step ladder as a straight ladder. All straight ladders shall be extended three rungs past leading edge. Never use metal ladders while working with electricity.
☐	MANLIFT used to reach work ☐ Scissor Lift ☐ Extensible Boom ☐ Articulated Boom ☐ vertical Lift ("Genie")	☐ Operators are sufficiently trained, experienced and qualified. ☐ Equipment is inspected after mobilization and is in good condition. ☐ Harness & Lanyard worn whenever operating the lift (scissor lifts may be excepted) ☐ Overhead and surface obstructions are reviewed with operators prior to use. **Manlift Comments:**

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
WORKING ALONE (EHS 207)		
☒	☐ Getting injured or incapacitated with no one else around to help ☐ Falling victim to crime	☒ Someone else knows your whereabouts, what you're doing and when you should be expected back to their office or project site location. This will be accomplished by communicating three (3) times at a minimum with the supervisor or the project manager 1 – Upon Arrival 2 – Midway through the day 3 – Upon Departure ☒ Ensure the area has wireless coverage, summon alternate communication method if wireless phones are not operable. ☒ Checked the weather forecast to avoid being caught up in bad weather conditions; ☒ Ensured that vehicle has sufficient fuel and is well maintained; ☒ Allowed self sufficient time for the trip so that you are not rushing; ☒ Drive with any bags, records and equipment hidden so that you are not seen hiding them as you park; **Working Alone Comments:**
EXCAVATIONS / TRENCHING/UNDERGROUND HAZARDS (EHS 402)		
☐	☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥ 4' ☐ Underground utilities ☐ Structures/foundations ☐ Falls into excavations	☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. (specify below) ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard (specify below) ☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Underground utilities have been identified and marked. ☐ Local "dig safe" organization has been notified for utility locations in public areas or rights of way. Number: ____________________________ Date: ____________________ ☐ Hand digging within 3' of utility locations. ☐ Excavations are protected by perimeter fencing (not barricade tape): (☐ rigid fence - chain link or wood, safety fence 6' from edge.) **Excavation Comments:**
CONFINED SPACES (EHS 118)		
☐	☐ No <u>Serious</u> Hazards ☐ Toxic atmosphere ☐ carbon monoxide ☐ hydrogen sulfide ☐ ☐ Flammable atmosphere ☐ Low oxygen ☐ Combustible dust ☐ Other Serious Hazard:	☐ Confined space is altered so that it is no longer a confined space. (describe below) ☐ Confined space is downgraded to a non-permit confined space. (identify which spaces below) ☐ Alternate Entry is used. (Identify which space qualify for confined space entry below) ☐ Full permit-required confined space entry is used due to presence of serious hazards. ☐ Rescue team has been notified (☐ Paid FD ☐ Volunteer FD ☐ Plant Rescue) Rescue Team:____________________________ Phone Number: ____________________ ☐ All entrants and attendants for Alternate Entry and Permit-Required Entry have confined space entry training. **Confined Space Comments:**
BOAT OPERATIONS/WORKING ON or NEAR WATER and ICE (EHS 306)		
☐	☐ Drowning ☐ Hypothermia	☐ Only qualified employees are operating the boat ☐ Coast Guard-approved Personal Flotation Device (PFD), sized and adjusted to the wearer, is worn by all when involved in boat operations. ☐ A float plan is completed prior to leaving dock. ☐ Emergency equipment like ring buoy, flares and fire extinguishers are present **Boat, water operations Comments:**
DRILLING (EHS 403)		
☒	☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☒ Underground utilities, aboveground ☐ Spills	☐Contractor inspected the drill rig ☐ High visibility vests, hard hats are being worn near the equipment ☐ Operators and helpers will maintain a safe distance to moving parts. All those working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Drill rigs will only be moved with masts lowered. Masts will be erected with outriggers fully extended when equipped with outriggers. ☐ Max. safe slope for rig will be followed ☒ Spinning parts of the rig are guarded when possible, no loose clothing being worn near the rig ☐ Local "dig safe" organization has been notified for utility locations in public areas or rights of way. Number: ____________________________ Date: ____________________ ☐ IDW is being managed as per regulations ☐ Area is surveyed for overhead utilities ☒ Hearing protection is used when working near the rig ☐ Spill equipment is available for fuel and hydraulic fluid leaks. Spill Kit Located: __________ **Drilling operations Comments: Hand drilling through the building floor.**

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
HEAVY EQUIPMENT [other than cranes] (EHS 504)		
☐	☐ Max. safe slope for each vehicle will be followed Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Bulldozer ☐ Excavator ☐ Front Loader ☐ mini Skid Steer (bobcat) ☐ mini Excavator ☐ Dump Truck ☐ Drill/Boring Rig ☐ Lull / Material Handler ☐ Forklift ☐ Manlift - specify type(s) ☐ Land Clearing loader	☐ Qualified persons operate all heavy equipment. (certificate is required for forklift and lull operators) ☐ Equipment will be inspected upon mobilization ☐ All leaks or defective safety equipment will be repaired before use. ☐ Operators will be reminded of seatbelt use by: ________________________________ ☐ Eye contact with the operator is made prior to approaching near equipment or swing radius ☐ High visibility vests are required ☐ Max. safe slope for each vehicle will be followed ☐ Counterweight swing radius will be barricaded. ☐ Rigging directly to the forks of a lull, forklift, or front loader equipped forks is prohibited. Crane hook attachments will be used (specify):________________________________ ☐ Spill equipment is available for fuel and hydraulic fluid leaks. Spill kit located:___________
CRANES		
☐	☐ Overhead hazards – utility lines, swing radius, falling objects, wire ropes and hoisting equipment ☐ Overbalancing – high winds, outrigger placement, overloading, safe slope ☐ Wire rope failure – condition, loading, safety lines ☐ Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ ☐ ☐	☐ Only qualified persons operate cranes (certificate required). ☐ A Critical Lift Plan will be developed and approved prior to mobilization. ☐ Equipment will be inspected prior to mobilization and a Crane Pre-Operational Safety Checklist (see EHS 506) will be completed and signed. ☐ A Critical Lift Checklist (see EHS 506) will be completed and signed prior to crane mobilization. ☐ Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. ☐ Crane operator will remain at the controls at all times during operation. ☐ Crane operation must be performed under the direction of an appointed signal person at all times. ☐ Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Radio equipment, if used, will be equipped with a discrete channel. ☐ Lifting or lowering will not exceed 100ft/minute. Lowering must be controlled i.e. no free fall. ☐ Stop work will be issued whenever hoisting equipment is exposed to winds exceeding 35mph. Hoisting equipment will be re-inspected and confirmed to be in operable condition prior to re-use. ☐ Cranes will not travel with personnel on the platform. Note that Geosyntec personnel are prohibited from entering the immediate vicinity of the crane during operation, unless prior approval has been obtained from the Corporate EHS Dept. ☐ Outriggers will be fully extended/locked with a firm footing within the maximum safe slope (<1%). ☐ Total weight of the load will not exceed 50% of the rated capacity for the crane radius and configuration. ☐ Crane hooks will be moused or provided with safety latches. ☐ Eye contact with the operator is made prior to approaching near equipment or swing radius ☐ High visibility vests are required ☐ Max. safe slope (<1%) will be followed ☐ Counterweight swing radius will be barricaded. ☐ Spill equipment is available for fuel and hydraulic fluid leaks. Spill kit located:___________ **Crane Hazards Comments:** Geosyntec personnel are prohibited from suspended personnel lifting.
ENVIRONMENTAL HAZARDS (NON CHEMICAL) (EHS 124, 125, 127)		
☐	☐ Heat Stress ☐ Cold Stress ☐ Insects, spiders, ticks ☐ Wild animals ☐ Mold, fungi ☐ Poisonous plants ☐ Hazardous noise	☐ Heat/Cold stress are monitored in accordance with Geosyntec procedures EHS 124 & EHS 125 ☐ Fluids are provided to prevent worker dehydration ☐ Types and injury potential of snakes, insects, spiders are reviewed with workers ☐ Insect repellant is used, PPE is used to protect against sting/bite injuries. ☐ All potentially poisonous plants such as poison ivy, poison oak, poison sumac are identified, long sleeve shirt or Tyvek is worn or a barrier cream is used when near these plants ☐ Hearing protection is used when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period) **Environmental Hazards Comments:**
POWER TOOLS, HAND TOOLS, and EXTENSION CORDS (EHS 121)		
☒	Eye injury, hand/arm cuts, electrical shock, strains, foot injuries, dust ☐ Grinders ☐ Needle Gun ☐ Chop saw	☒ All tools and electrical cords will be inspected upon mobilization by: __User_____________ ☒ All tools and electrical cords in-use will be inspected daily by: ___User_____________ ☐ Grinder speeds will not exceed grinding wheel ratings. ☐ Water or wet cutting performed to control dust ☐ Respirators used to prevent exposure to dust (respirator type:______________________) ☒ Thorough utility survey conducted prior to any concrete cutting, coring

PRE-WORK THA

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
	☐ Chain saw ☐ Trimmer ☐ concrete/asphalt saw	☐ Face shield and safety glasses used (required for all grinders, jackhammers, chain saws, etc.) ☐ Kevlar chaps and jacket (required for all chainsaw work) ☒ Hearing protection required for which tools or areas: ___**blower door fan**____________ ____ ☐ All extension cords are in good condition with no cuts through outer insulation, ground plugs are present, and no "vinyl tape" repairs. **Tool & Cord Comments:**
MANUAL MATERIAL HANDLING / MATERIAL STORAGE / HOUSEKEEPING (EHS 401)		
☐	Back or shoulder strain, struck by falling objects, trips and falls, incompatible materials (fire or explosion) ☐ hvy manual lifting (>30 lbs) ☐ chemical storage ☐ compressed gas storage ☐ Tall storage greater than 2 pallets stacked. ☐ Material & equipment laydown areas ☐ Debris removal	☐ Mechanical lifting equipment used to reduce manual material handling: (☐ Forklift/Lull ☐ Heavy Equipment ☐ chainfall ☐ ____________________) ☐ Manual lifting more than 50 lbs by a single person will be avoided. ☐ Good manual lifting techniques will be reviewed prior to site work. ☐ Incompatible chemicals will be separated by 20' ☐ Secondary containment will be provided for the following chemicals: __________________ ☐ Safety equipment will be located near chemical storage. ☐ Spill Kit ☐ Emergency Shower ☐ Eyewash ☐ Drench Hose ☐ Splash PPE ☐ Flammable gases and oxygen will be separated by 20'. ☐ All compressed gas cylinders will be transported vertically and secured upright. ☐ Equipment and materials will not be stored on site ☐ Debris will be moved daily and placed in designated areas. **Material Handling & Housekeeping Comments:**
TRAFFIC & SIDEWALK OBSTRUCTION (EHS 517)		
☐	☐ Vehicle accidents ☐ Pedestrians struck by vehicles or heavy equipment ☐ Pedestrians falls ☐ Pedestrian struck-by falling objects	☐ DOT signal devices will be used to re-route vehicles around excavations or busy site entrances/exits that affect road traffic. ☐ Flaggers will be used and have DOT Flagger Training ☐ Pedestrian traffic will be safely routed around or over excavations. ☐ Pedestrian traffic will be safely routed around or under overhead work. **Traffic & Sidewalk Comments:**
HAZARDOUS WASTE SITE WORK (EHS 108, 112, 301)		
☐	☐ exposure to hazardous vapors or dust, contact with contaminated materials, fire, and explosion. Contaminants of Concern and hazardous chemicals include: ☐ volatile organic compounds (describe:_____________ ____________________) ☐ semivolatile organic cmpds (describe:_____________ ____________________) ☐ metal dusts (describe:_____________ ____________________) ☐ PCBs ☐ caustic (NaOH) ☐ Acid (H_2SO_4, HCl) ☐ Other hazardous waste site hazards are covered elsewhere in the HASP)	☐ Site workers with a potential for contact with contaminated materials will have OSHA 40-hour training, current 8-hour refresher, and medical exam. ☐ No intrusive work activities or areas are anticipated with current scope of work. Intrusive work activities include: ____ ____ The perimeter of intrusive work areas are identified by:___________________________ Decontamination of personnel or equipment is <u>not</u> anticipated with the current scope of work. ☐ Decontamination of personnel and small tools will be conducted as follows: ____ ☐ Decontamination of heavy equipment will be conducted as follows: ____ ☐ Heavy equipment leaving the site will be inspected by____________________ ☐ Work area monitoring is not anticipated with the current scope of work. ☐ Work Area Air Monitoring as follows for (dust, VOCs, etc.) **OR** see attached. ________ ________ Level C Tyvek, boot covers, nitrile gloves, half or full face respirator with _____________ cartridges changed daily ________ ________ Level B Same as above except supplied air respirator ________ ________ STOP work, contact EHS Department ☐ Community Air Monitoring is not anticipated with the current scope of work. ☐ Community Air Monitoring is required per the attached document. **Comments/Other:**

EMERGENCY RESPONSE (911 Service is Available ☒ Yes ☐ No)			
Emergency Medical Treatment - Hospital Name: Hospital Address:	St Joseph's Hospital 555 E. Market St Elmira NY 14901	**Number:**	607.733.6541
Non-Emergency Med. Treatment - Clinic Name: Occupational Clinic Address:	Elmira Urgent Care 306 W. Water St., Elmira, NY 14905	**Number:**	607.732.1100
Fire Department Name	West Elmira Fire Department	**Number:**	911
Spill Response:	West Elmira Fire Department	**Number:**	911

PRE-WORK THA

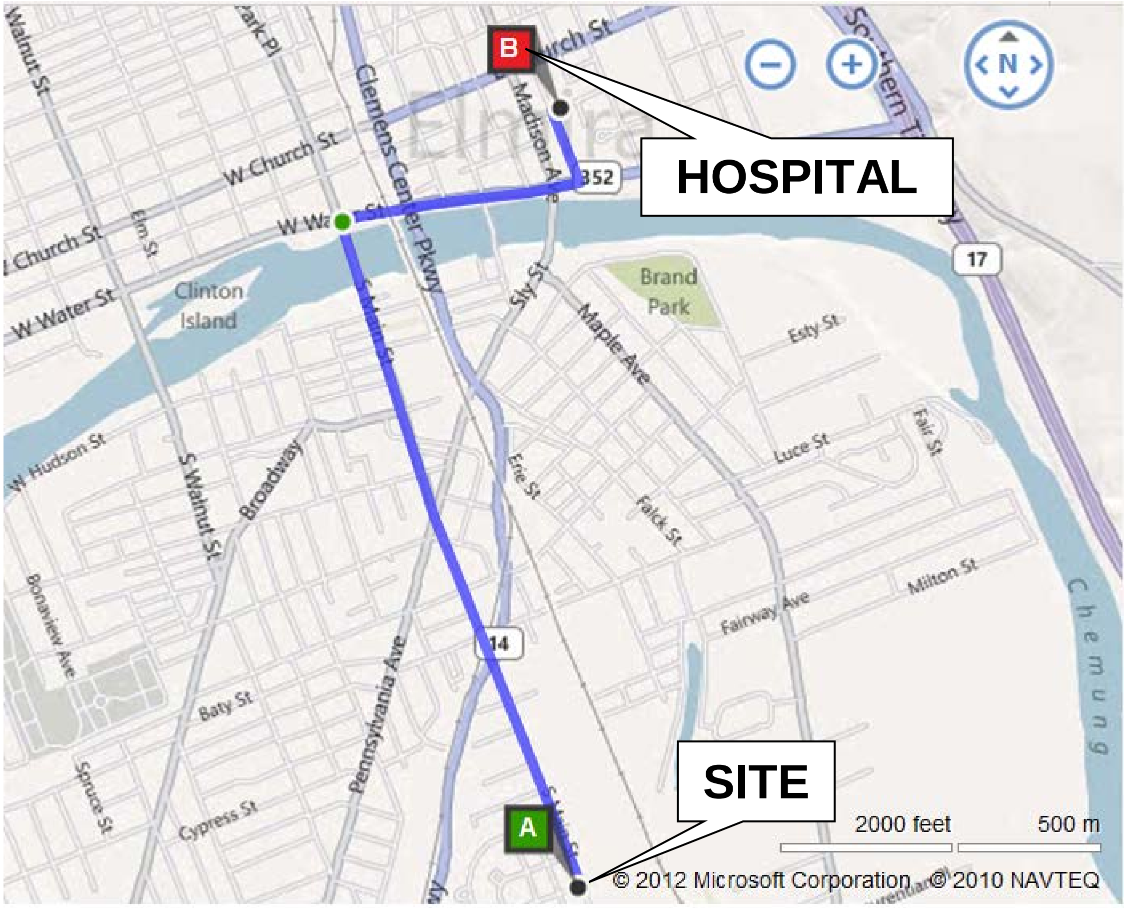
Client Representative Name::	Kevin Krueger	**Office Number:**	(651) 687-2210
		Cell Number:	
Geosyntec **Project Manager** Name:	Aron Krasnopoler	**Office Number:**	(410) 381-4333
		Cell Number:	(202)-550-7724
Geosyntec **Corporate H&S** Name:	Dale Prokopchak	**Office Number:**	804 332 6376
		Cell Number:	(804) 349-8067
Emergency Response Comments:			

Date:7/25/14	
Project Name: Former Sperry Remington Supplemental Investigation	
THA Title: HVAC Analysis	
Subcontractor Name:	
Geosyntec Representative (reviewed by):	
Subcontractor Foreman/Supervisor Signature (authorize):	
Crew Signatures (acknowledge):	
Print Name	**Signature**
William E Wertz	William E Wertz

PLEASE RETURN A COPY OF THIS SIGNED PAGE TO GEOSYNTEC PROJECT MGR., SUPERINTENDENT UPON REVIEW AND ACKOWLEDGMENT BY THE CREW MEMBERS. ALL NEW CREW MEMBERS SHALL BE ORIENTATED THE SAME AND A SUBMITTAL OF A NEW SIGN IN SHEET SHALL BE COMPLETED.

FIGURE 1

ROUTE TO HOSPITAL



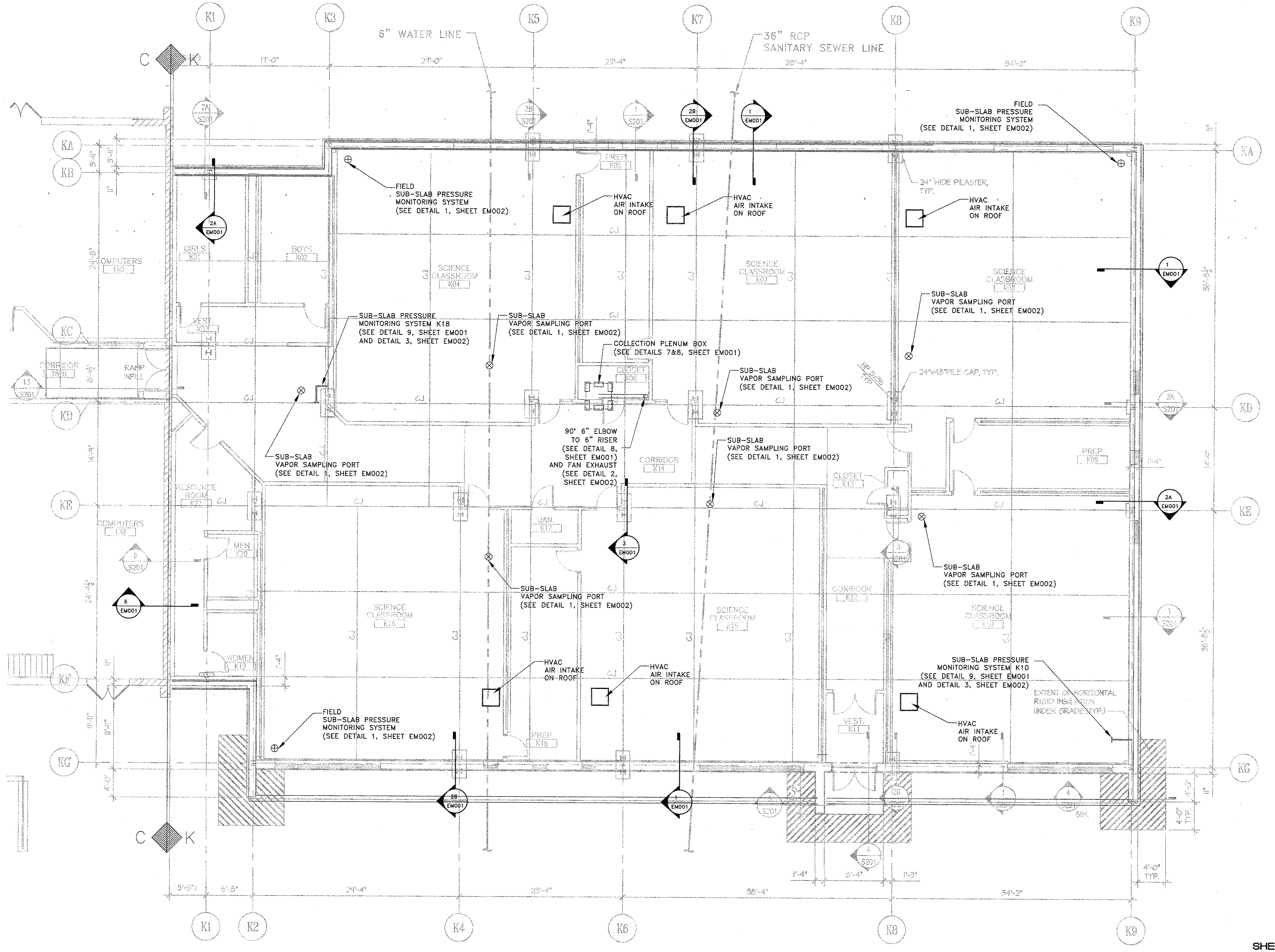
St. Joseph's Hospital
607-733-6541
555 E. Market Street
Elmira, NY 14901

Written Directions to Hospital from Site:

1. Depart S Main St toward Robert St (1.6 miles)
2. Turn right onto RT-352 East / W Water St (0.5 miles)
3. Turn left onto Dewitt Ave (0.2 miles)
4. Turn right onto E Market St (167 ft)
5. Arrive at **St. Joseph's Hospital**

APPENDIX H

AS-BUILT DRAWINGS



SHEET EM000

NOTES:

1) SEE SHEET EM001 FOR PROFILES OF SUB-SLAB PIPE AND PLENUM.

2) SEE SHEET EM001 FOR DETAILS AT WALLS AND PILE CAPS.

3) ROOF TOP EXHAUST MUST BE AT LEAST 25 FEET FROM ANY AIR INTAKE DEVICES.

4) CONTRACTOR TO FIELD ADJUST TO MEET SYSTEM LAYOUT AS SHOWN.

PLAN REFERENCES:

1) BASE PLAN: BY KEYSTONE ASSOCIATES ENTITLED FOUNDATION\FIRST FLOOR PLAN UNIT K, NOTES, DETAILS, SED PROJECT NUMBER 07-06-00-01-0-016-016, DATED OCTOBER 9, 2007.

2) DRAWING: BY KEYSTONE ASSOCIATES ENTITLED SANITARY WASTE & VENT PLAN-UNIT K, SED PROJECT NUMBER 07-06-00-01-0-016-016, DATED OCTOBER 9, 2007.

LEGEND:

⊢	DIFFERENTIAL PRESSURE GAUGE PIPING
═	6" SOLID RIGID FIBERGLASS CLASS 0 OR 1 PER UL 181, WITH WET LAY-UP JOINTS
▯	8"x8"x16" CONCRETE BLOCKS

No. 059778

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NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1.	4/3/09	ADDED HVAC AIR INTAKES, ADDED TO NOTE CONCERNING RISER	JDC	PJK	RLA
2.	4/7/09	ADDED SUB-SLAB VAPOR SAMPLING PORTS IN ROOMS K08 AND K10.	JDC	PJK	R

PROJECT

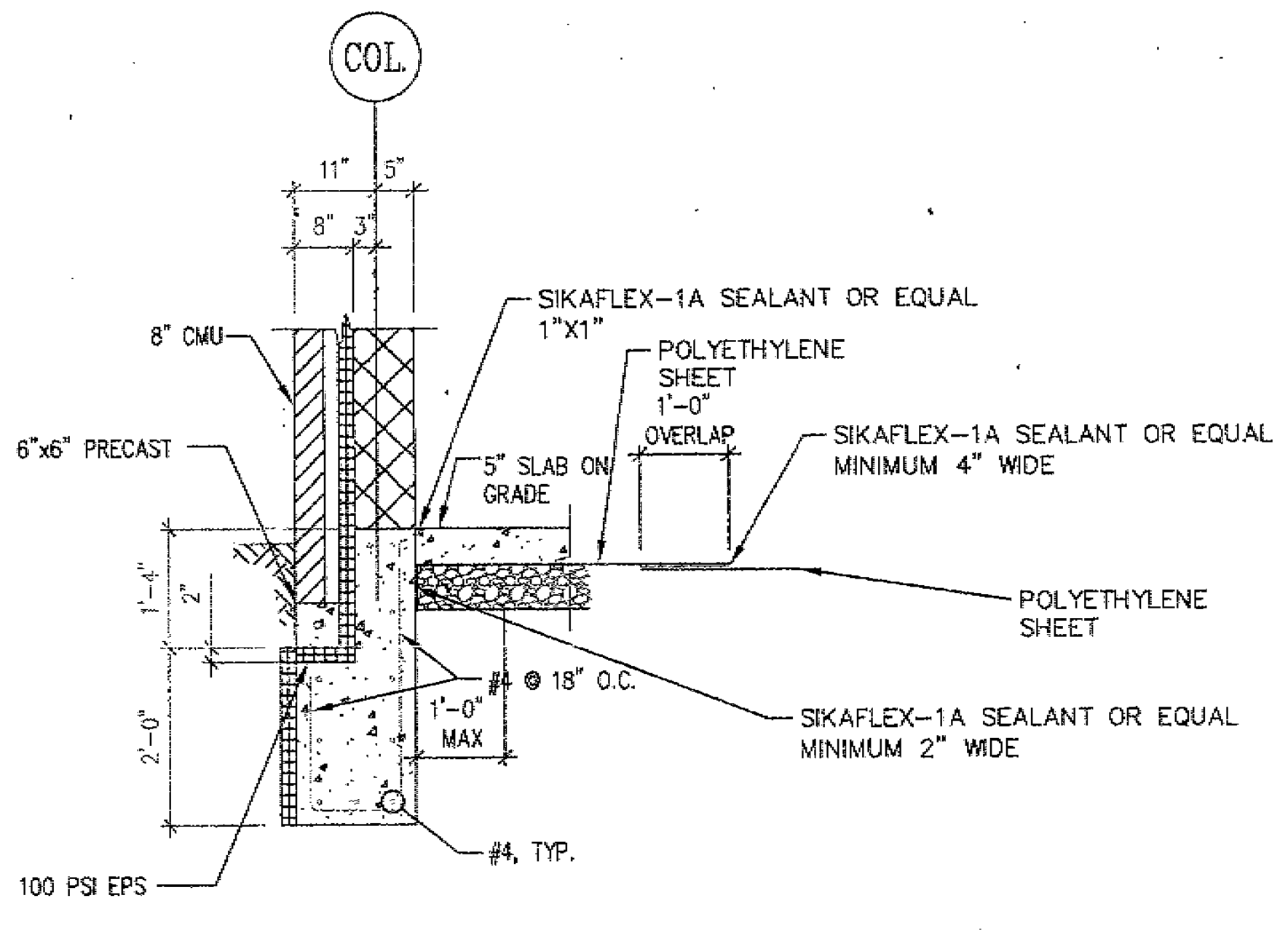
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: J.D. Croote
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: R. Aldrich
DATUM:
CONTOUR INTERVAL = FEET

3/16"=1'-0"

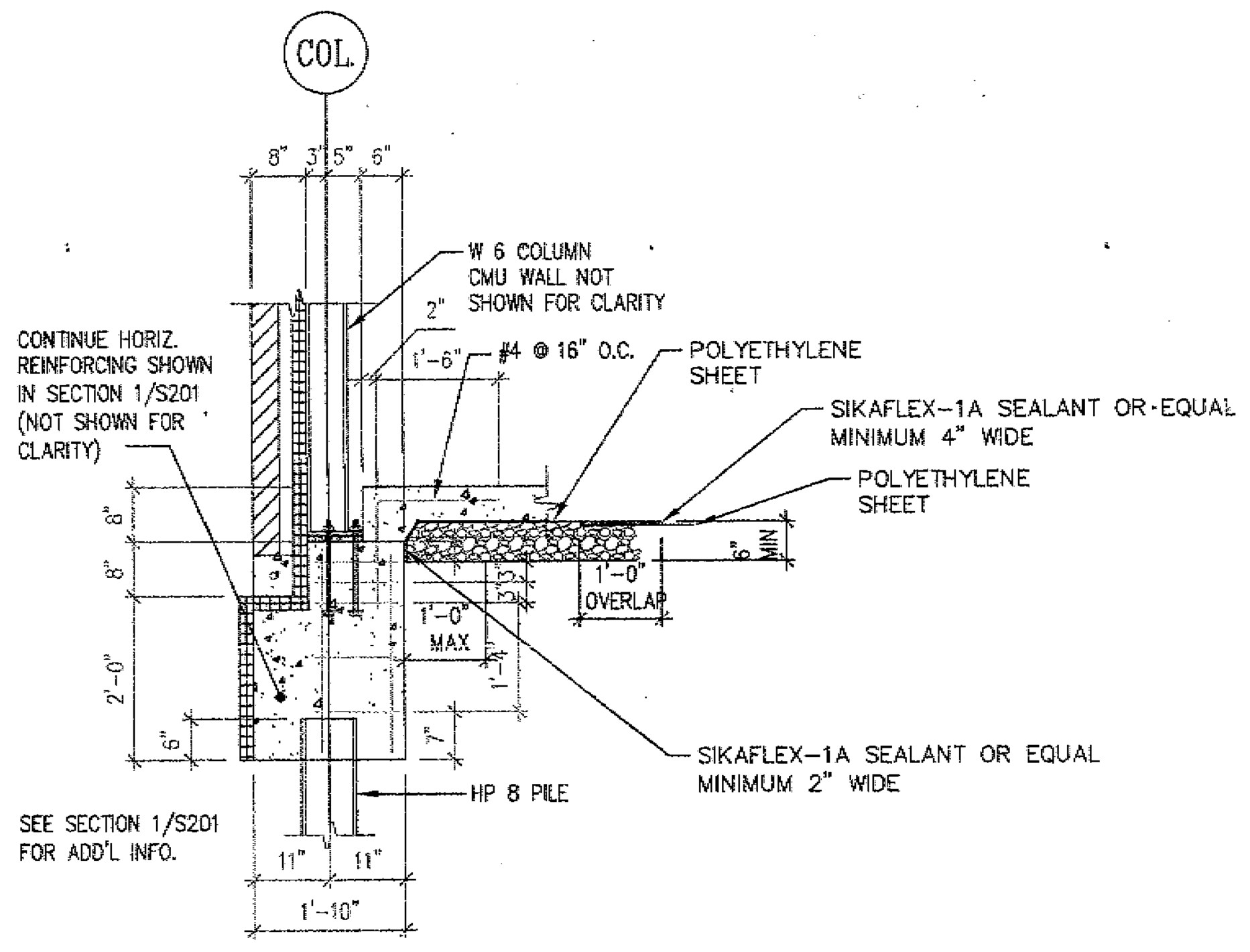
SUB-SLAB
DEPRESSURIZATION SYSTEM
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

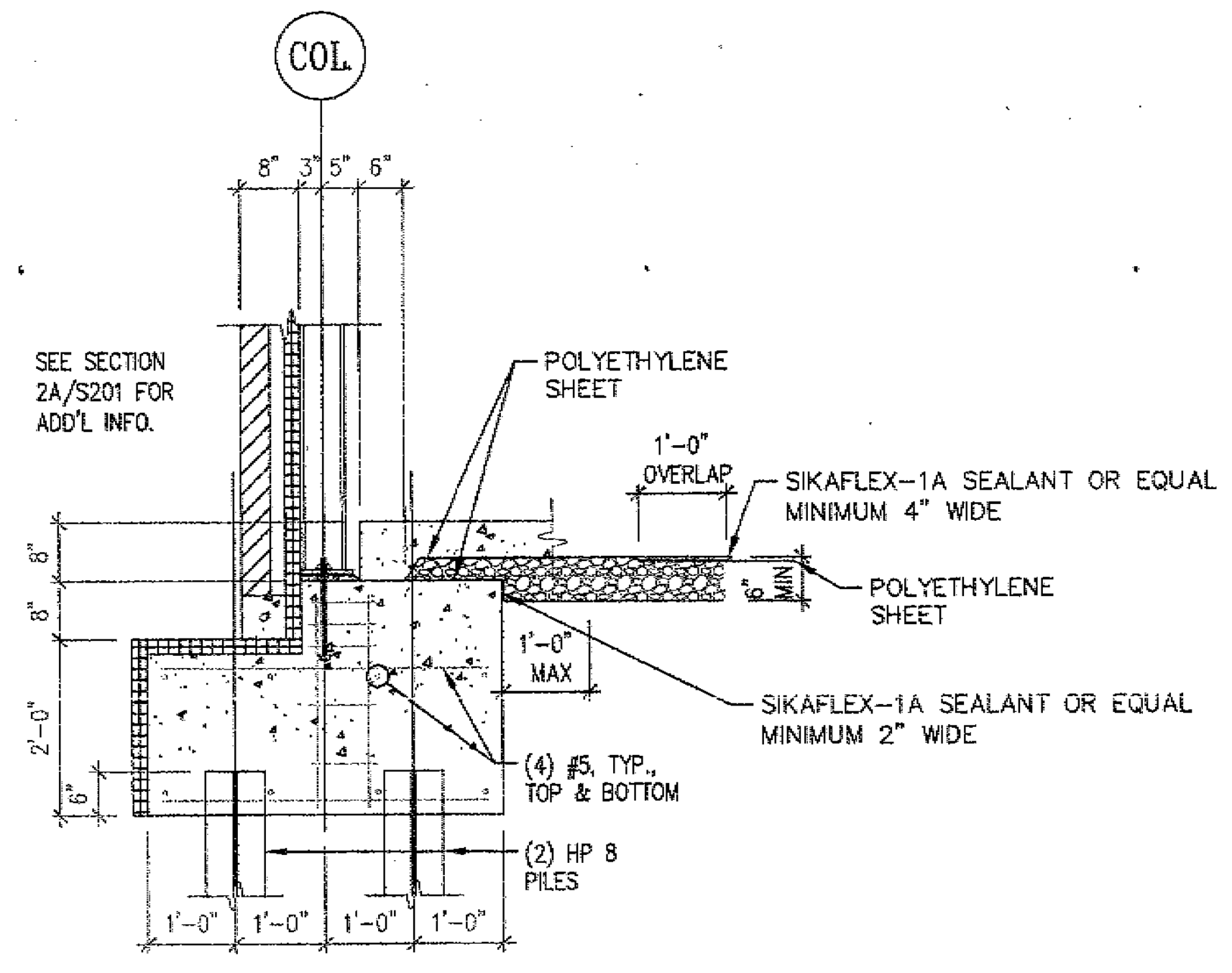
DATE: 2/24/09 SCALE: 3/16"=1'-0" DWG. NO. 28014045 SHEET 1 OF 3



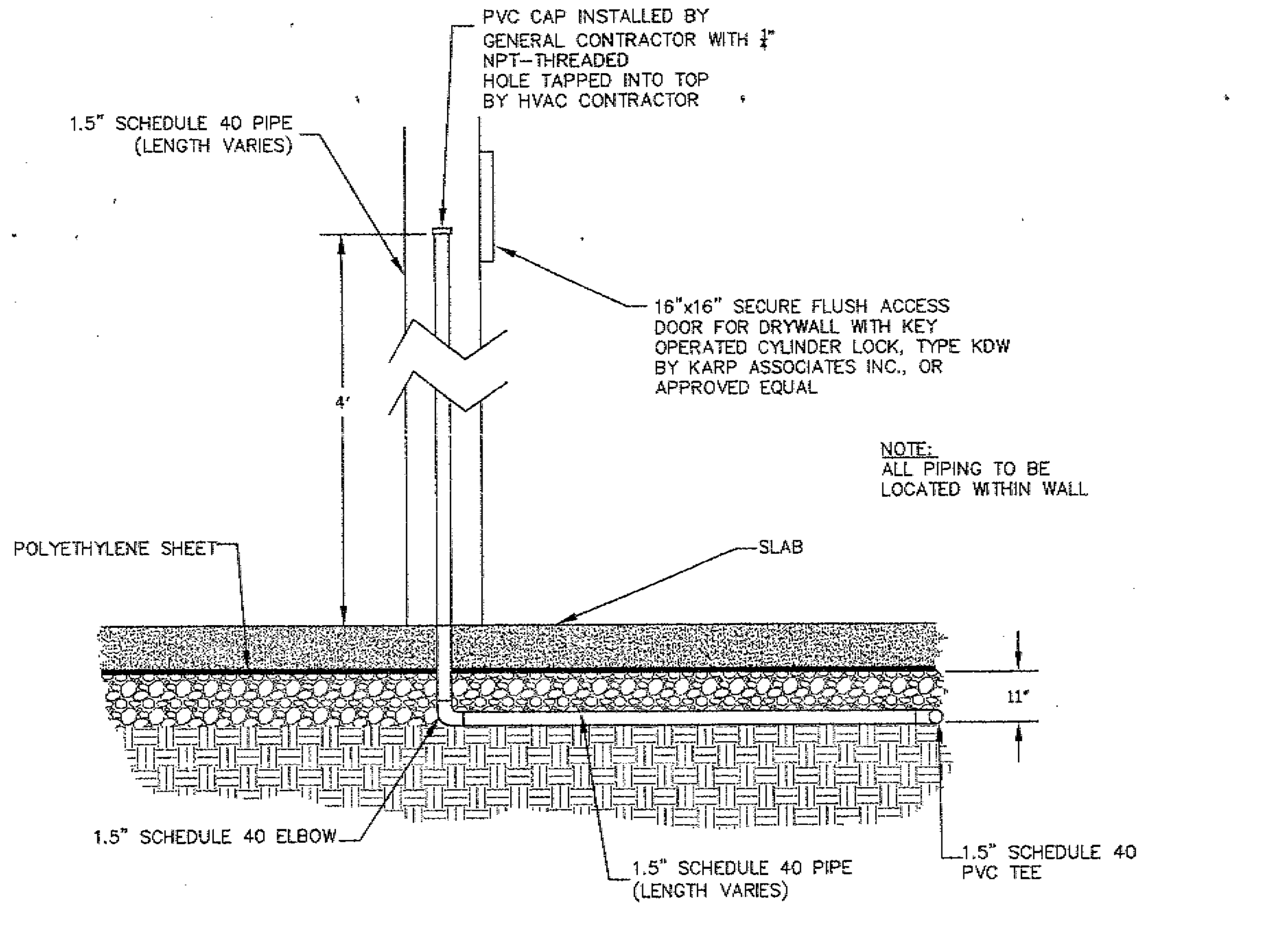
1 EM001 SECTION
SCALE: 1/2" = 1'-0"



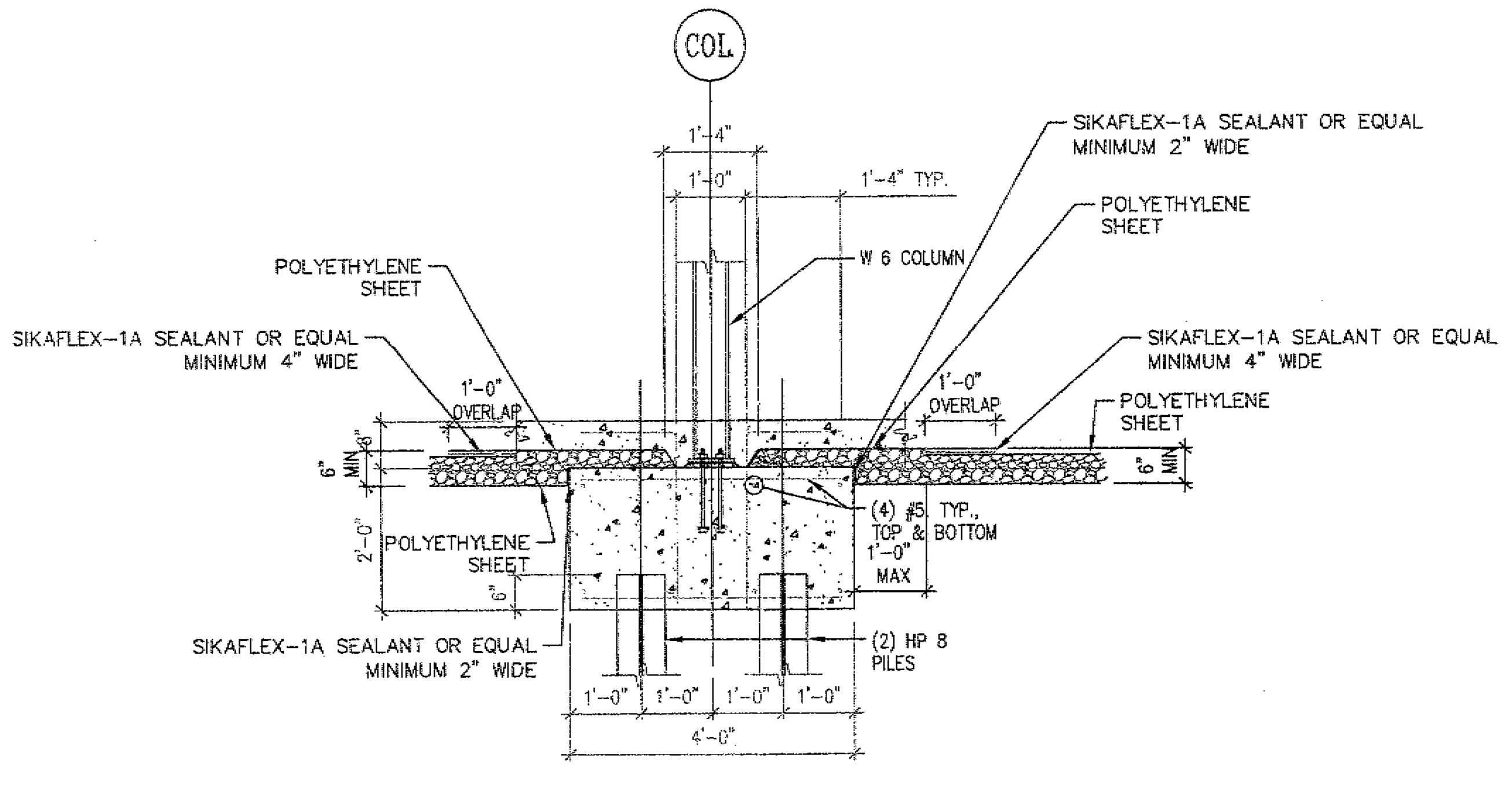
2A EM001 SECTION
SCALE: 1/2" = 1'-0"



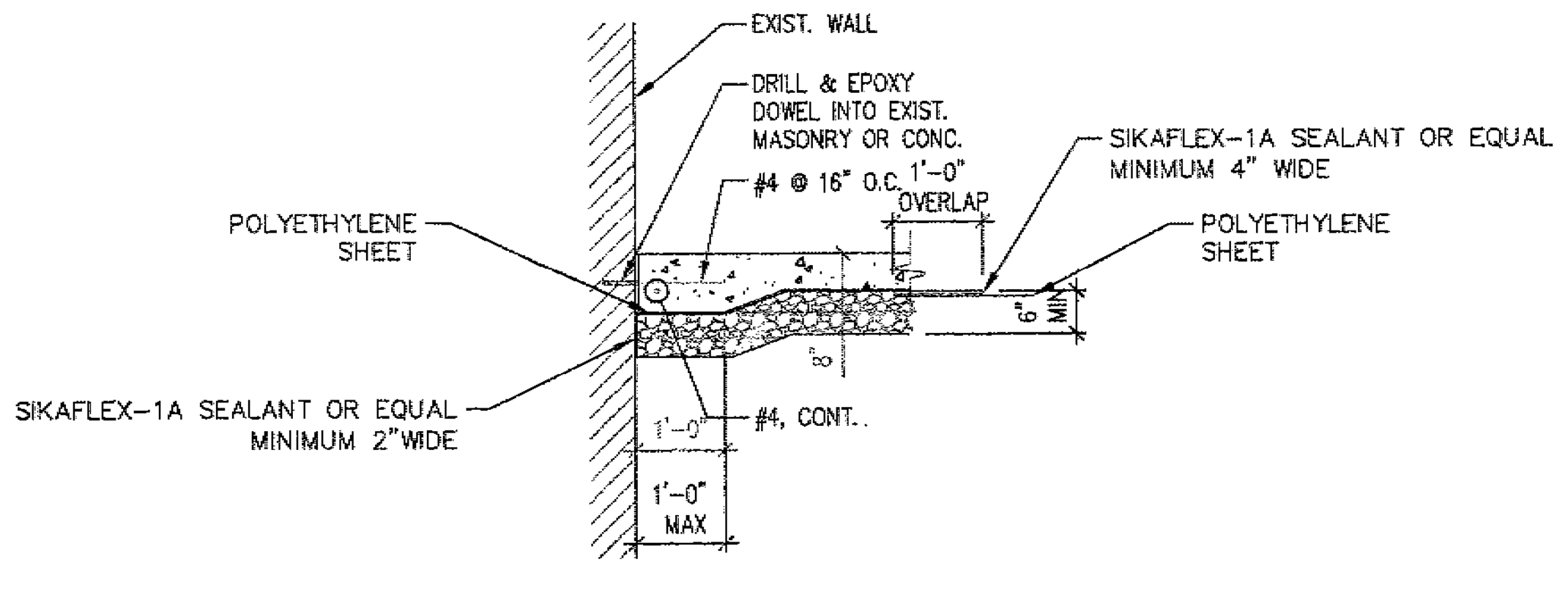
2B EM001 SECTION
SCALE: 1/2" = 1'-0"



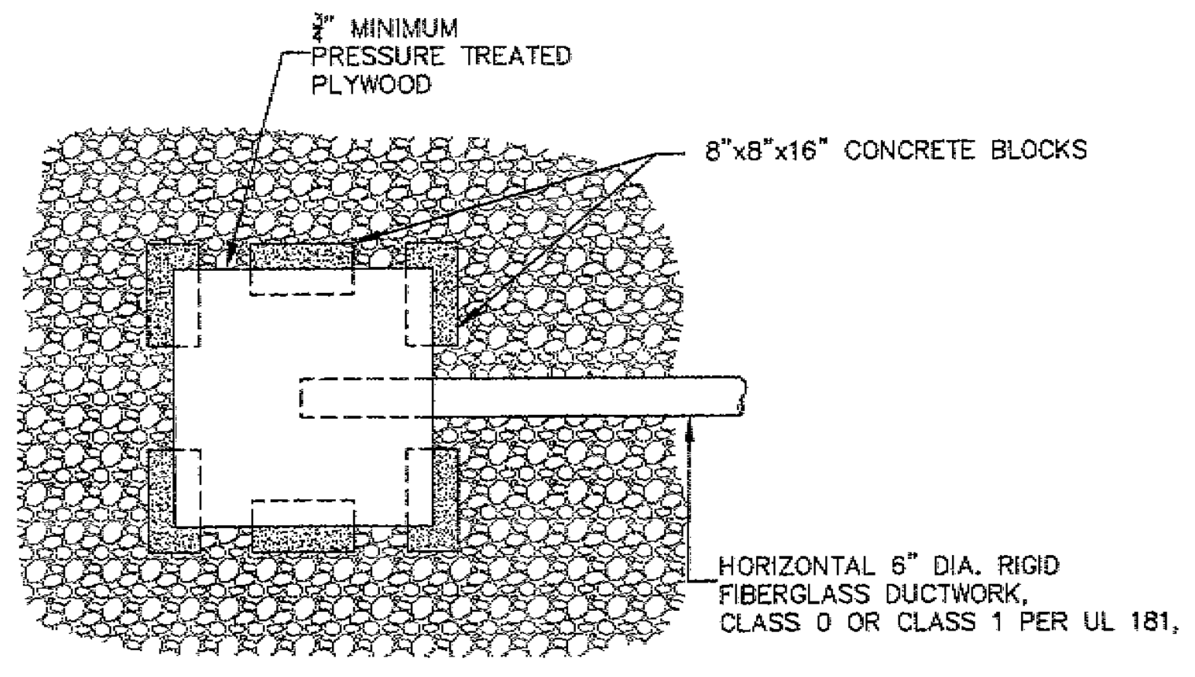
9 EM001 DIFFERENTIAL PRESSURE GAUGE STUB-OUT



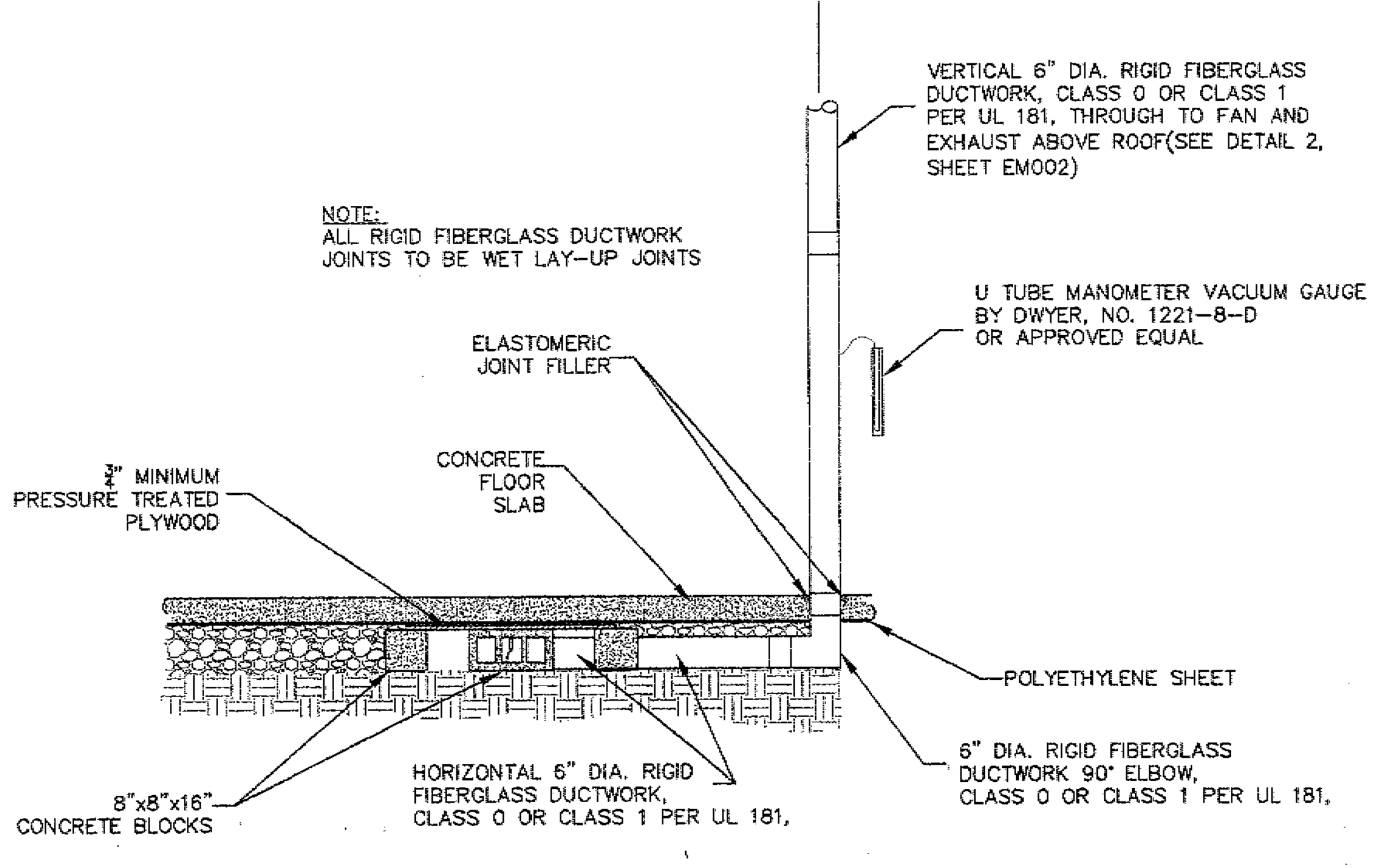
3 EM001 SECTION
SCALE: 1/2" = 1'-0"



6 EM001 SECTION AT EXIST. BUILDING
SCALE: 1/2" = 1'-0"



7 EM001 COLLECTION PLENUM BOX
PLAN VIEW



8 EM001 COLLECTION PLENUM BOX
PROFILE VIEW

SHEET EM001

NOTES:

1. FOR ALL SOLID PIPE AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. POLYETHYLENE SHEET SHALL BE NEW AND A MINIMUM OF 6 MIL.

3. SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE OR EQUAL.

PLAN REFERENCES:

DETAILS 1, 2A, 2B, 3 AND 6 FROM DRAWING S201
BY KEYSTONE ASSOCIATES

LEGEND:

▨ GAS PERMEABLE LAYER:
CRUSHED STONE OR CRUSHED GRAVEL
MEETING NYSDOT DESIGNATION 703-2
SIZE 2 ON TABLE 703-4

STATE OF NEW YORK
RODNEY L. ALDRICH
No. 059778
LICENSED PROFESSIONAL ENGINEER

R. L. Aldrich

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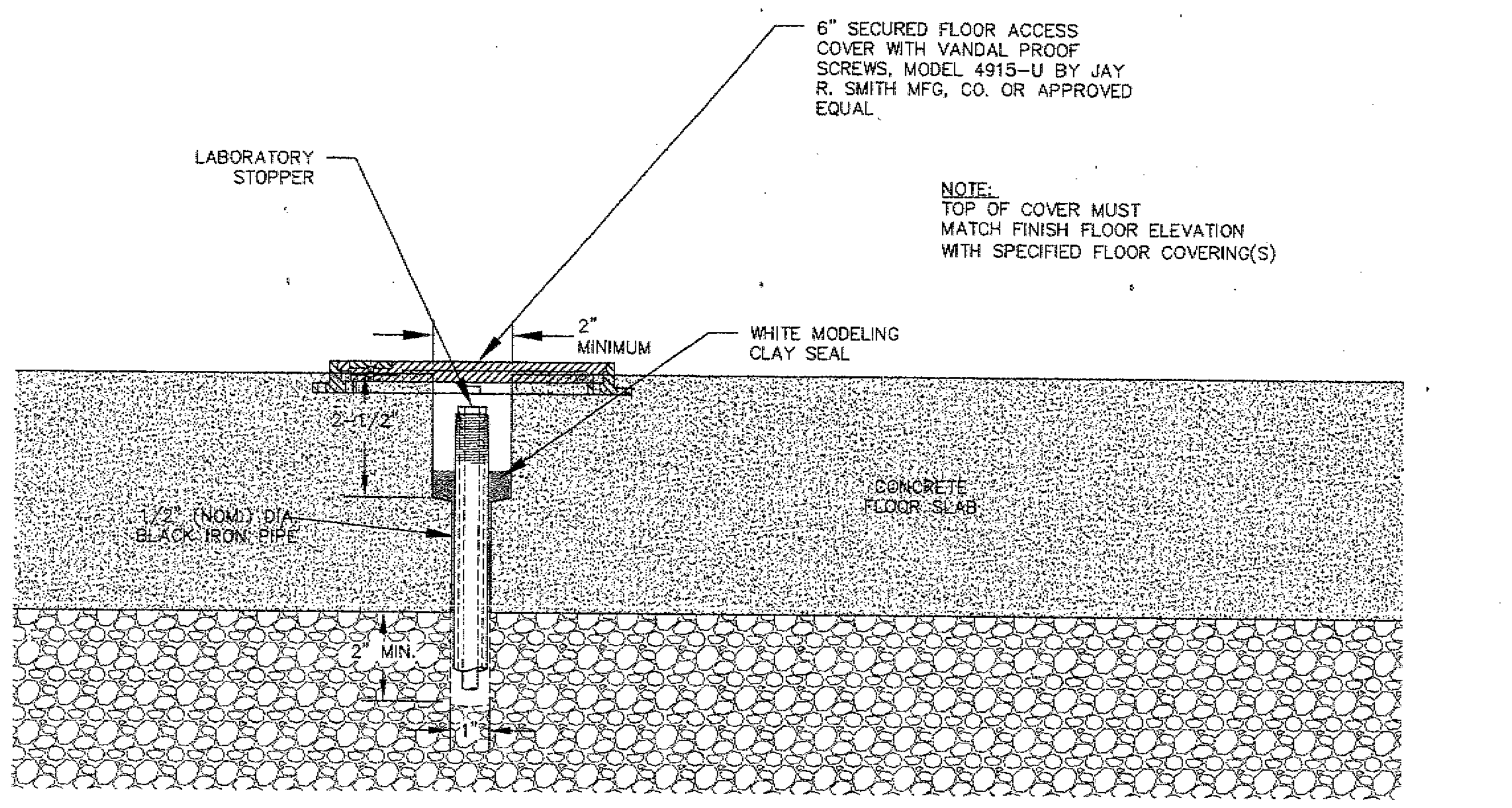
NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1.	4/6/09	ADDED TO NOTE AT DUCTWORK, DETAIL 8.			
		AND ADDED U TUBE MANOMETER	JDC	PJK	RA

PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: J.D. Croote
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: R Aldrich
DATUM:
CONTOUR INTERVAL = FEET
AS SHOWN

SUB-SLAB DEPRESSURIZATION SYSTEM
CROSS-SECTIONS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

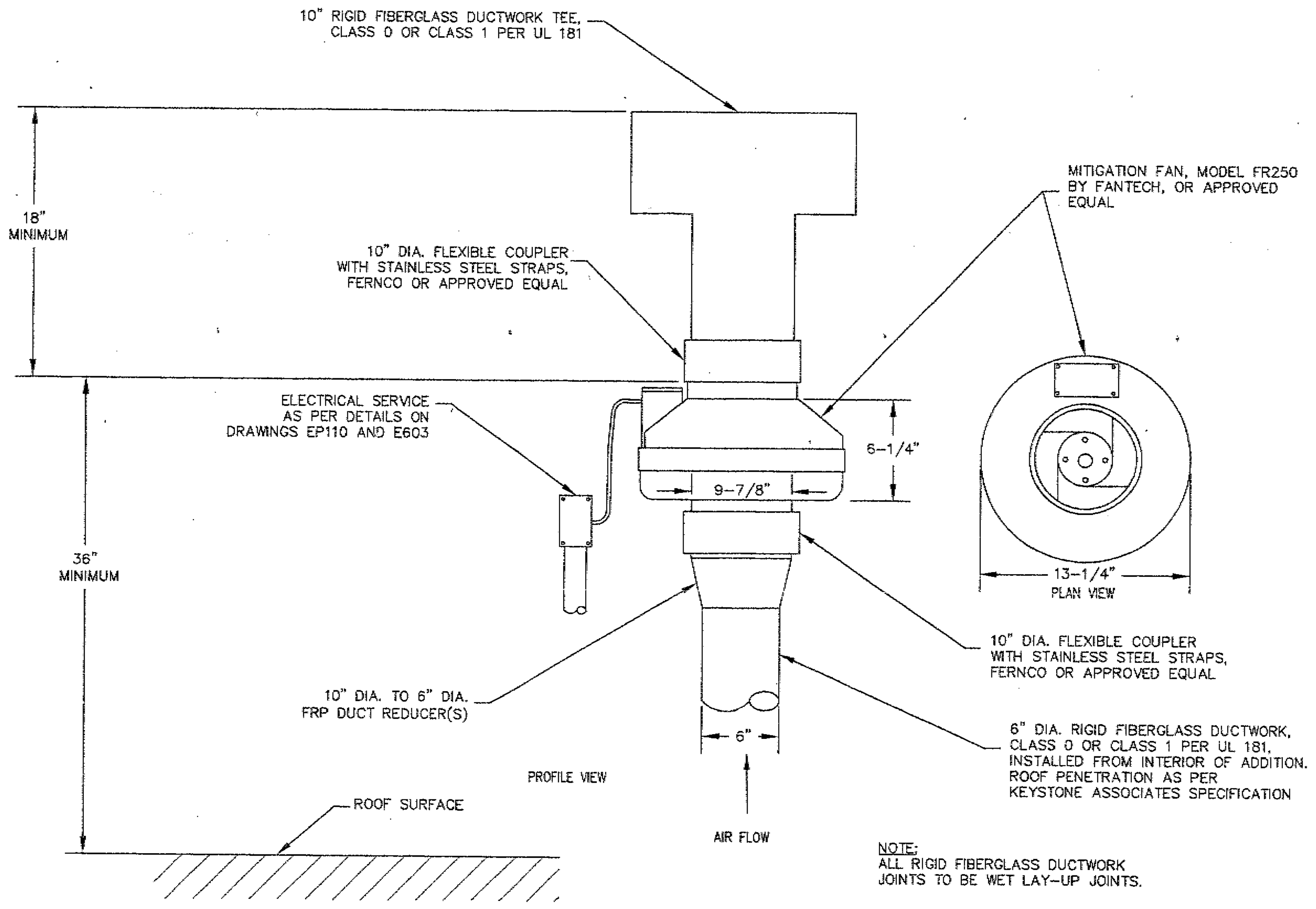
DATE: 2/24/09 SCALE: AS SHOWN DWG. NO. 28014046 SHEET 2 OF 3



SAMPLE COLLECTION PORT & FIELD SUB-SLAB PRESSURE MONITORING SYSTEM

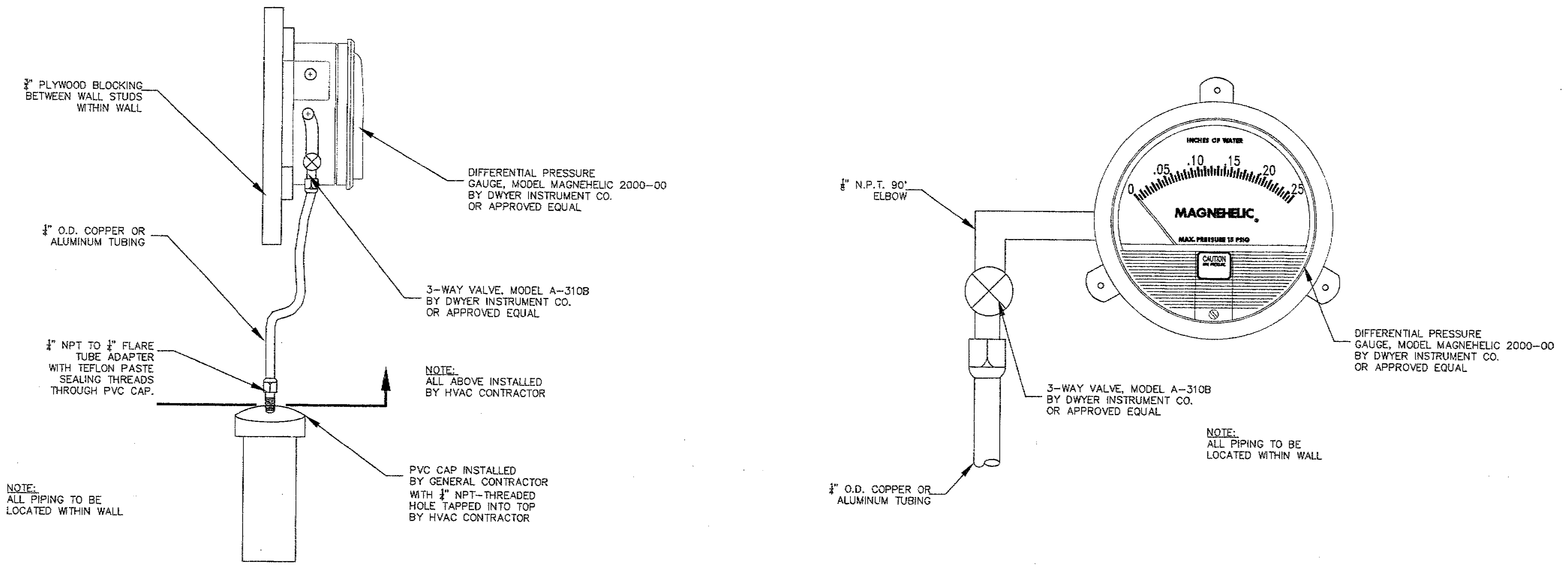
1 EM002

PROFILE VIEW



FANTECH'S FR SERIES MODEL FR 250

2 EM002



SIDE VIEW

FRONT VIEW

DIFFERENTIAL PRESSURE GAUGE INSTALLATION

3 EM002

NOTES:

1. FOR ALL SOLID PIPE AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.
2. POLYETHYLENE SHEET SHALL BE NEW AND A MINIMUM OF 6 MIL.
3. SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE OR EQUAL.

LEGEND:

▨	GAS PERMEABLE LAYER: CRUSHED STONE OR CRUSHED GRAVEL MEETING NYSDOT DESIGNATION 703-2 SIZE 2 ON TABLE 703-4
▨	CONCRETE SLAB (AS SPECIFIED BY KEYSTONE ASSOCIATES)

SHEET EM002

RODNEY L. ALDRICH
No. 059778

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

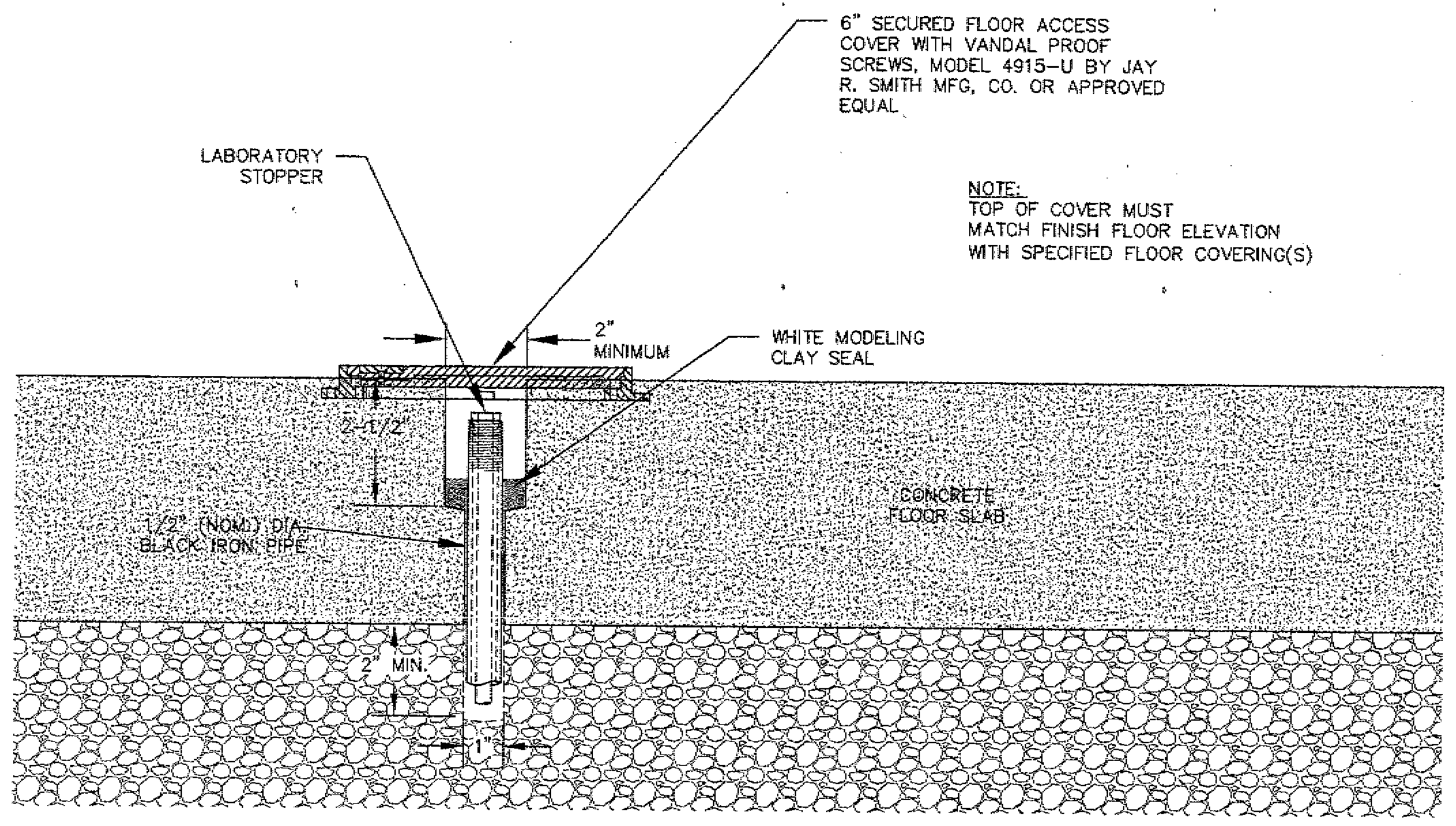
NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1.	4/6/09	REVISED TITLE OF DETAIL 1	JDC	PJK	

PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: J.D. Croote
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: R Aldrich
DATUM:
CONTOUR INTERVAL = FEET
N.T.S.

SUB-SLAB DEPRESSURIZATION SYSTEM
PROFILE DETAILS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE: 2/24/09 SCALE: N.T.S. DWG. NO. 28014047 SHEET 3 OF 3

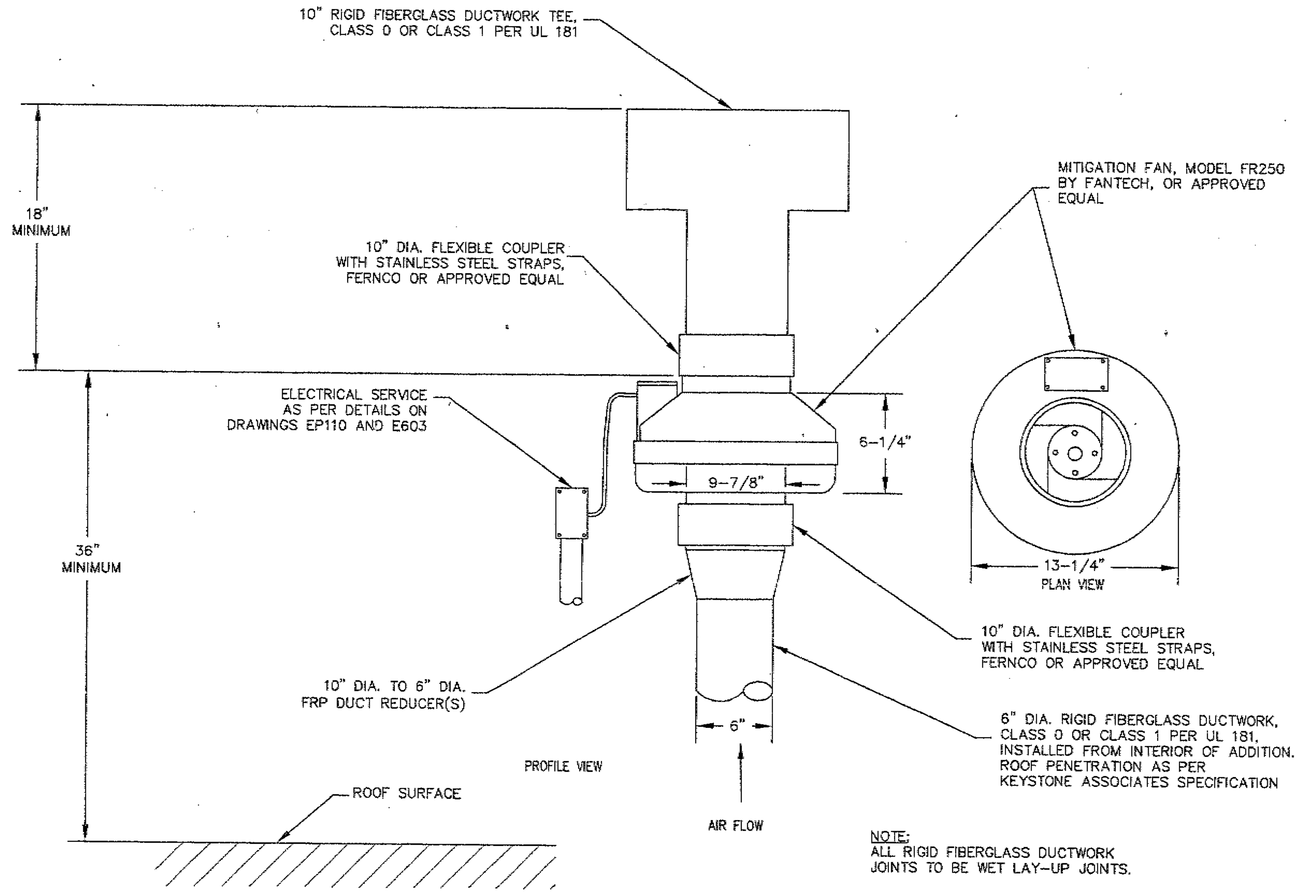


NOTE:
TOP OF COVER MUST
MATCH FINISH FLOOR ELEVATION
WITH SPECIFIED FLOOR COVERING(S)

1
EM002

SAMPLE COLLECTION PORT & FIELD SUB-SLAB PRESSURE MONITORING SYSTEM

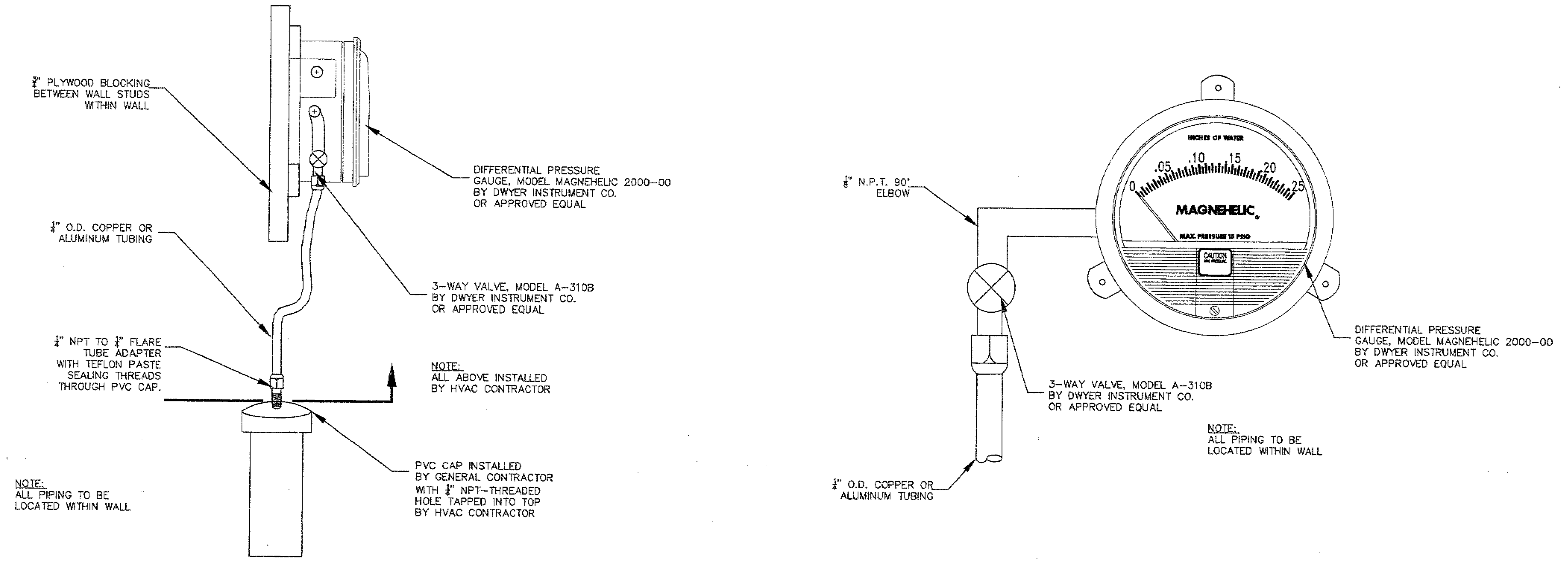
PROFILE VIEW



NOTE:
ALL RIGID FIBERGLASS DUCTWORK
JOINTS TO BE WET LAY-UP JOINTS.

2
EM002

FANTECH'S FR SERIES MODEL FR 250



NOTE:
ALL ABOVE INSTALLED
BY HVAC CONTRACTOR

NOTE:
ALL PIPING TO BE
LOCATED WITHIN WALL

NOTE:
ALL PIPING TO BE
LOCATED WITHIN WALL

SIDE VIEW

FRONT VIEW

3
EM002

DIFFERENTIAL PRESSURE GAUGE INSTALLATION

NOTES:

1. FOR ALL SOLID PIPE AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. POLYETHYLENE SHEET SHALL BE NEW AND A MINIMUM OF 6 MIL.

3. SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE OR EQUAL.

LEGEND:

▨	GAS PERMEABLE LAYER: CRUSHED STONE OR CRUSHED GRAVEL MEETING NYSDOT DESIGNATION 703-2 SIZE 2 ON TABLE 703-4
▨	CONCRETE SLAB (AS SPECIFIED BY KEYSTONE ASSOCIATES)

SHEET EM002

RODNEY L. ALDRICH
No. 059778

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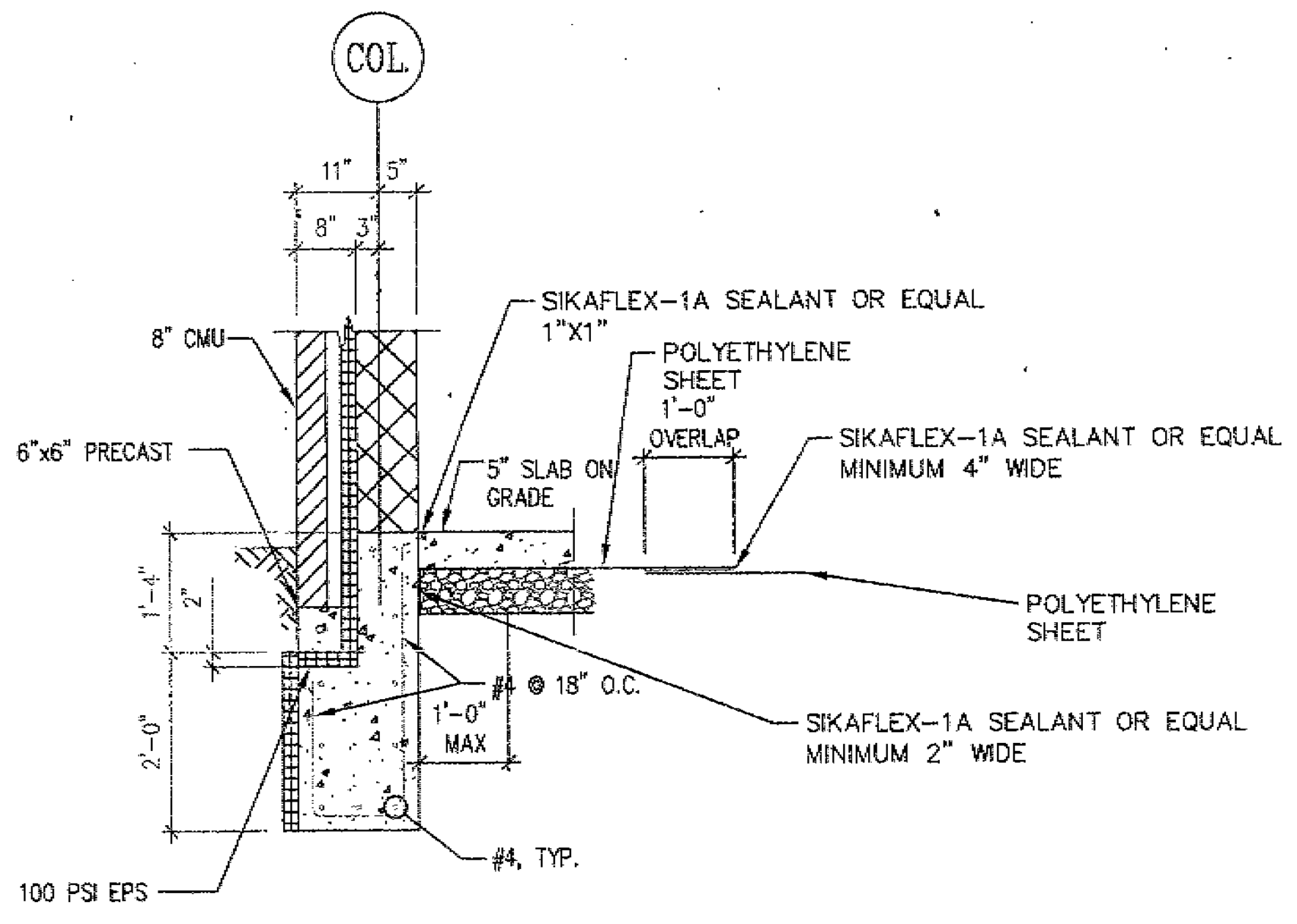
NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1.	4/6/09	REVISED TITLE OF DETAIL 1	JDC	PJK	R

PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: J.D. Croote
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: R Aldrich
DATUM:
CONTOUR INTERVAL = FEET
N.T.S.

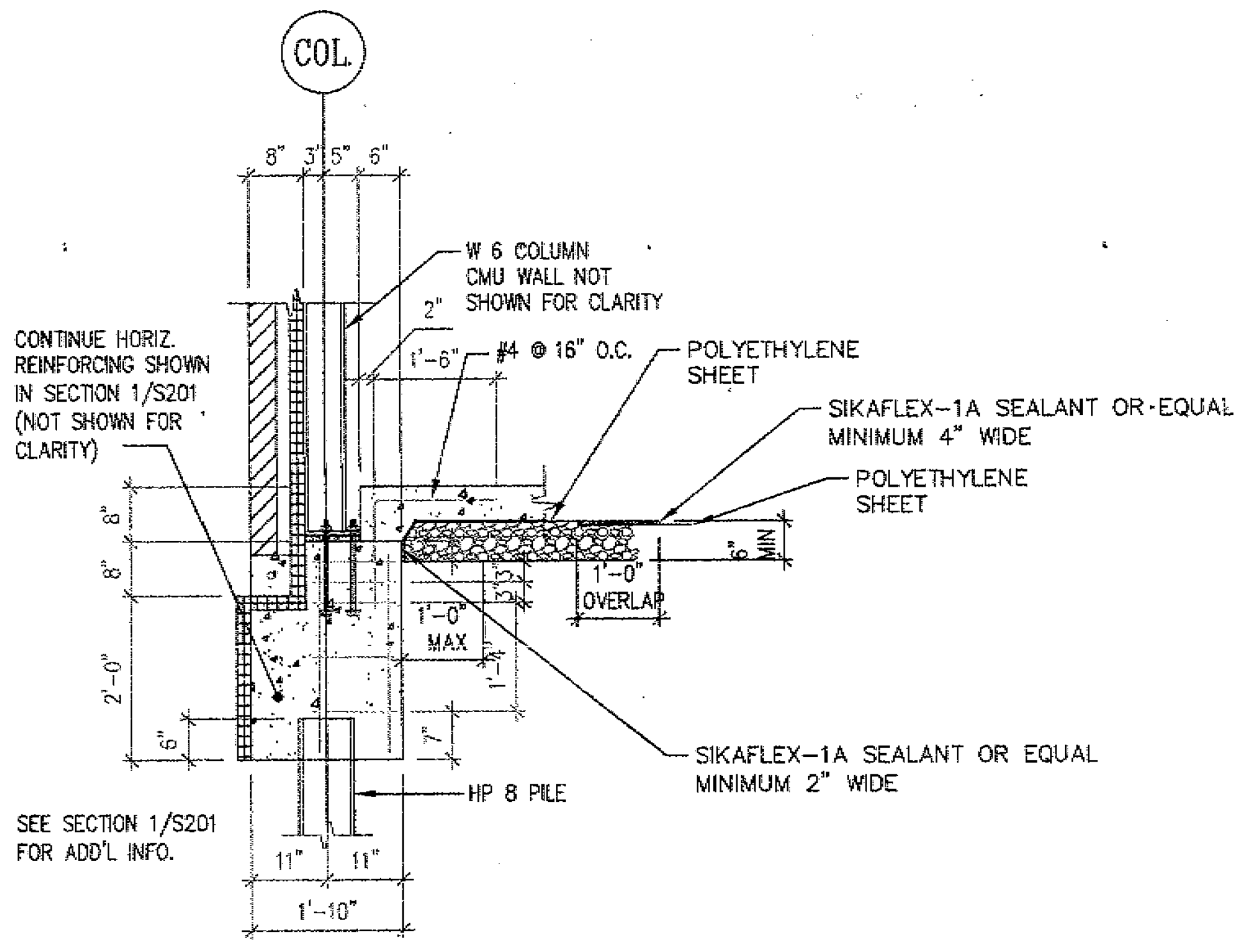
SUB-SLAB DEPRESSURIZATION SYSTEM
PROFILE DETAILS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

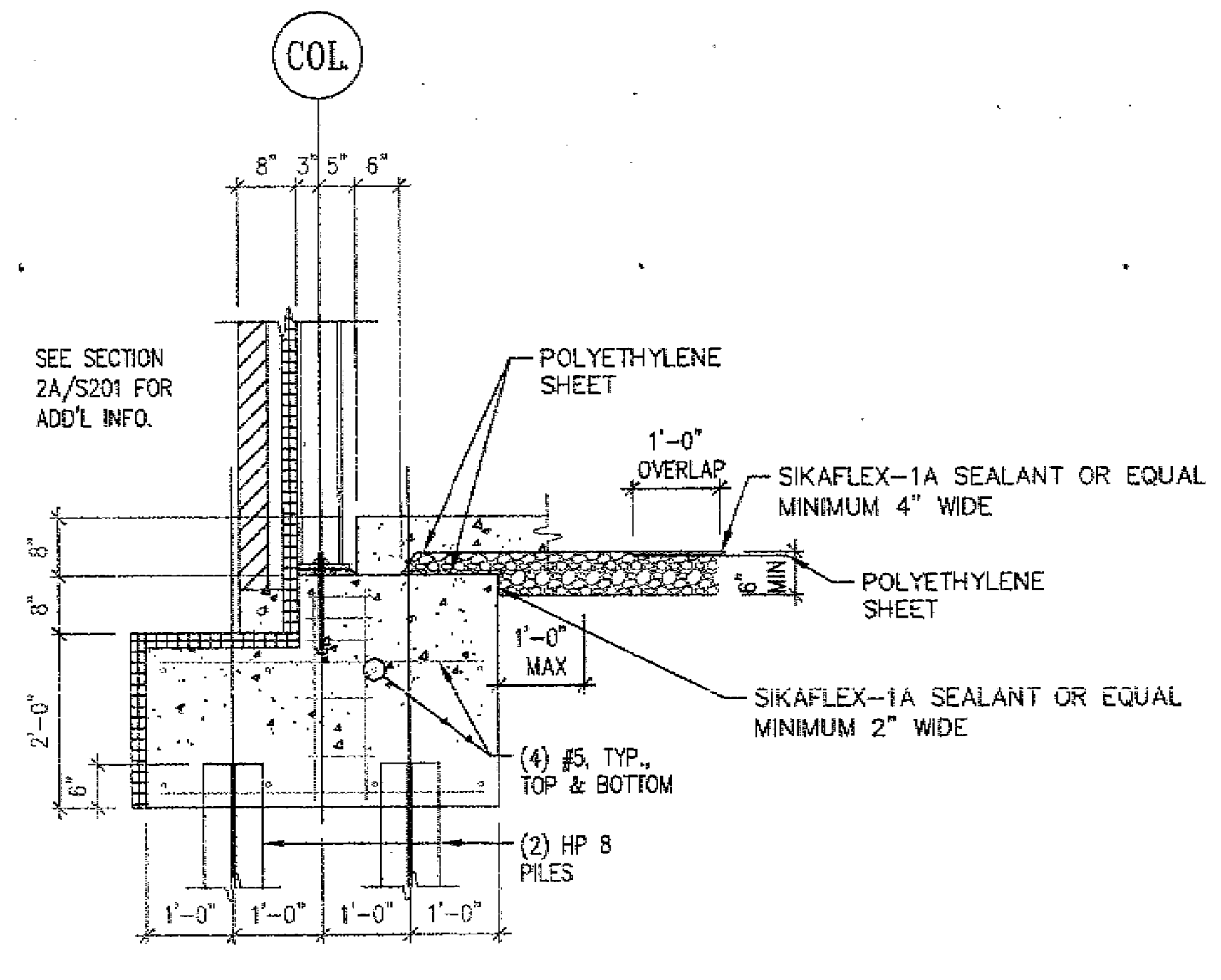
DATE: 2/24/09 SCALE: N.T.S. DWG. NO. 28014047 SHEET 3 OF 3



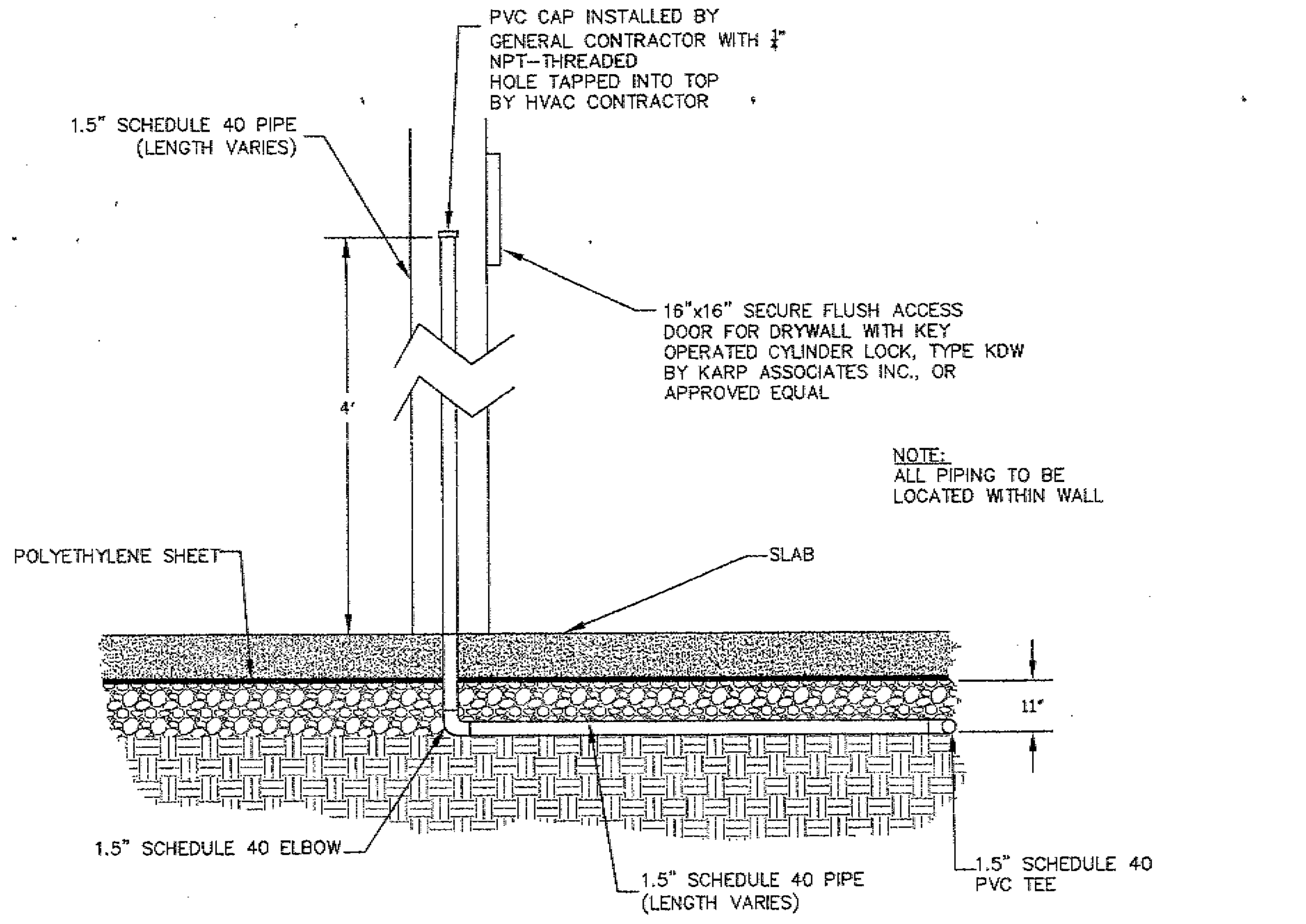
1 EM001 SECTION
SCALE: 1/2" = 1'-0"



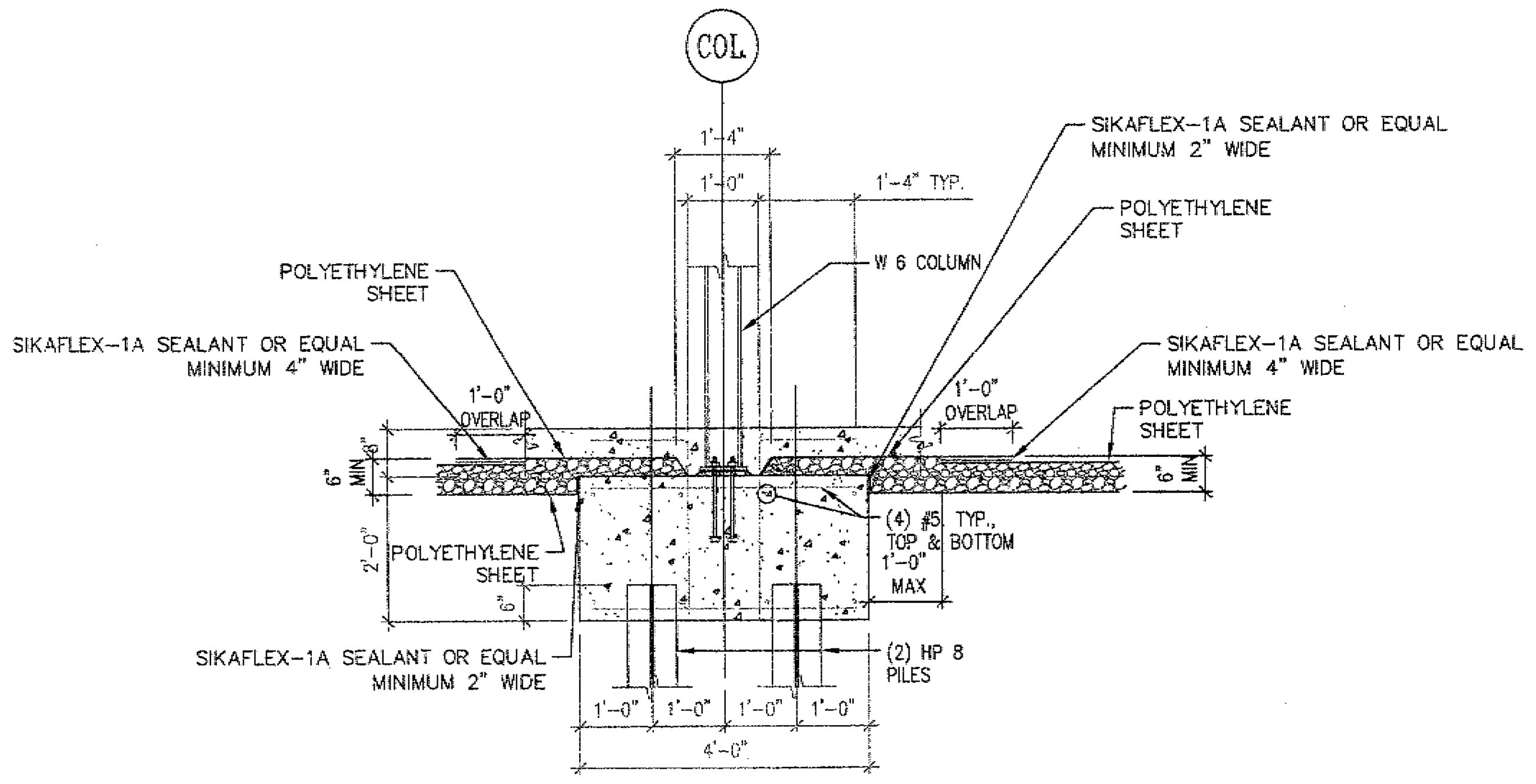
2A EM001 SECTION
SCALE: 1/2" = 1'-0"



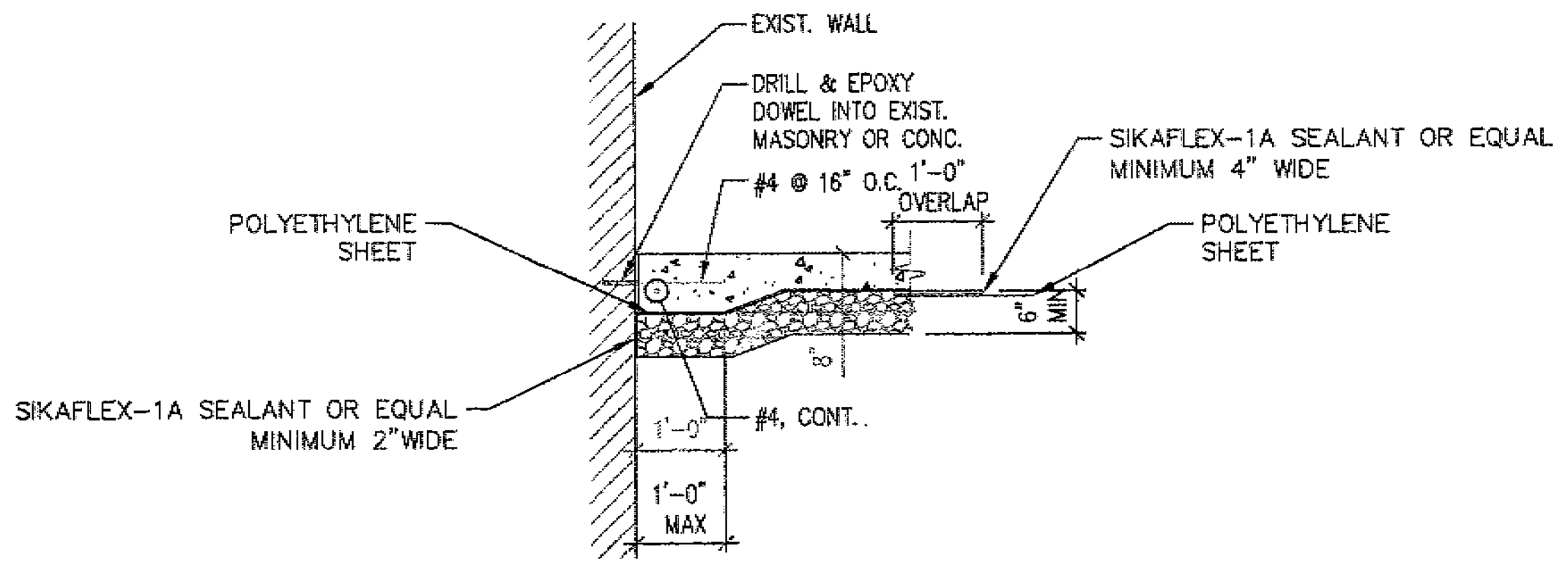
2B EM001 SECTION
SCALE: 1/2" = 1'-0"



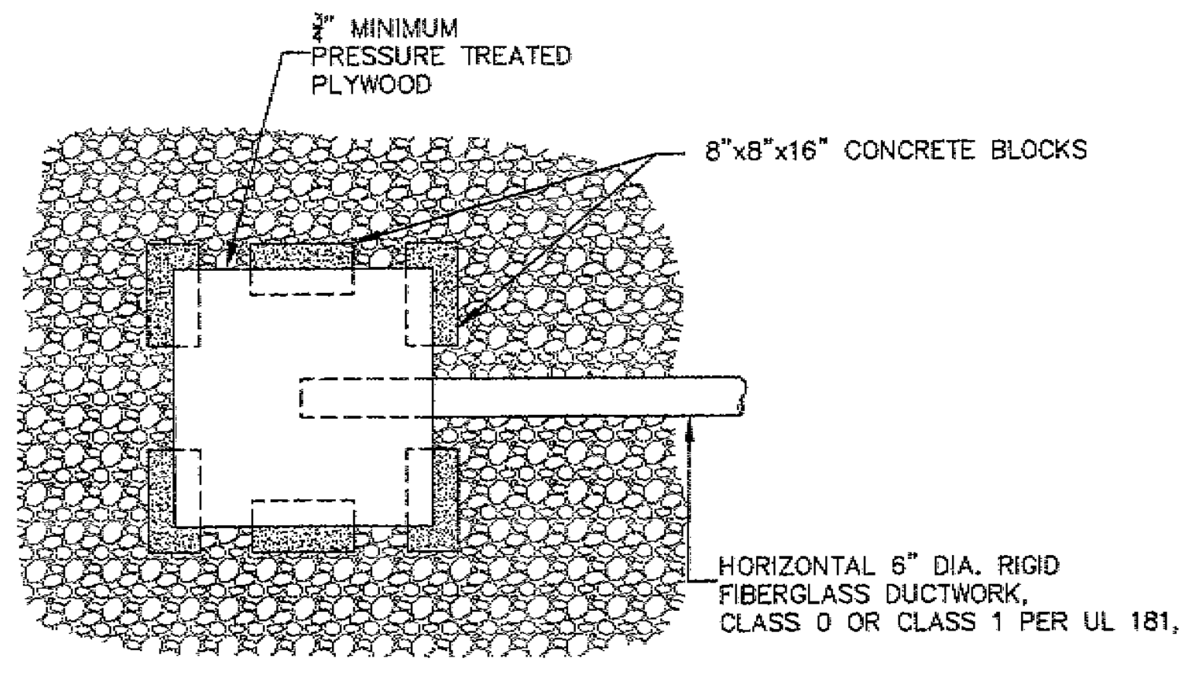
9 EM001 DIFFERENTIAL PRESSURE GAUGE STUB-OUT



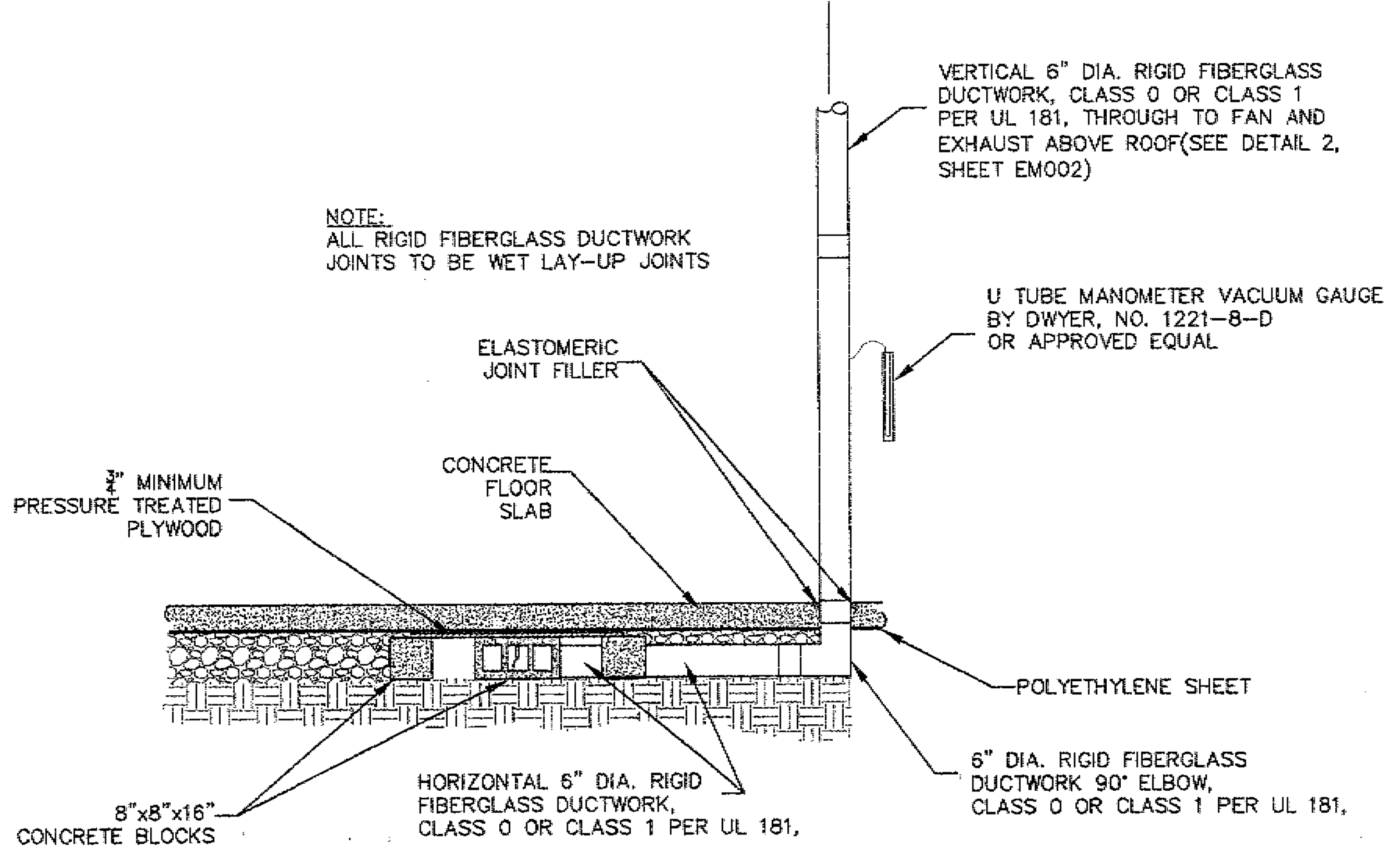
3 EM001 SECTION
SCALE: 1/2" = 1'-0"



6 EM001 SECTION AT EXIST. BUILDING
SCALE: 1/2" = 1'-0"



7 EM001 COLLECTION PLENUM BOX
PLAN VIEW



8 EM001 COLLECTION PLENUM BOX
PROFILE VIEW

SHEET EM001

NOTES:

1. FOR ALL SOLID PIPE AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. POLYETHYLENE SHEET SHALL BE NEW AND A MINIMUM OF 6 MIL.

3. SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE OR EQUAL.

PLAN REFERENCES:

DETAILS 1, 2A, 2B, 3 AND 6 FROM DRAWING S201
BY KEYSTONE ASSOCIATES

LEGEND:

▨ GAS PERMEABLE LAYER:
CRUSHED STONE OR CRUSHED GRAVEL
MEETING NYSDOT DESIGNATION 703-2
SIZE 2 ON TABLE 703-4

RODNEY L. ALDRICH
No. 059778

Rodney L. Aldrich

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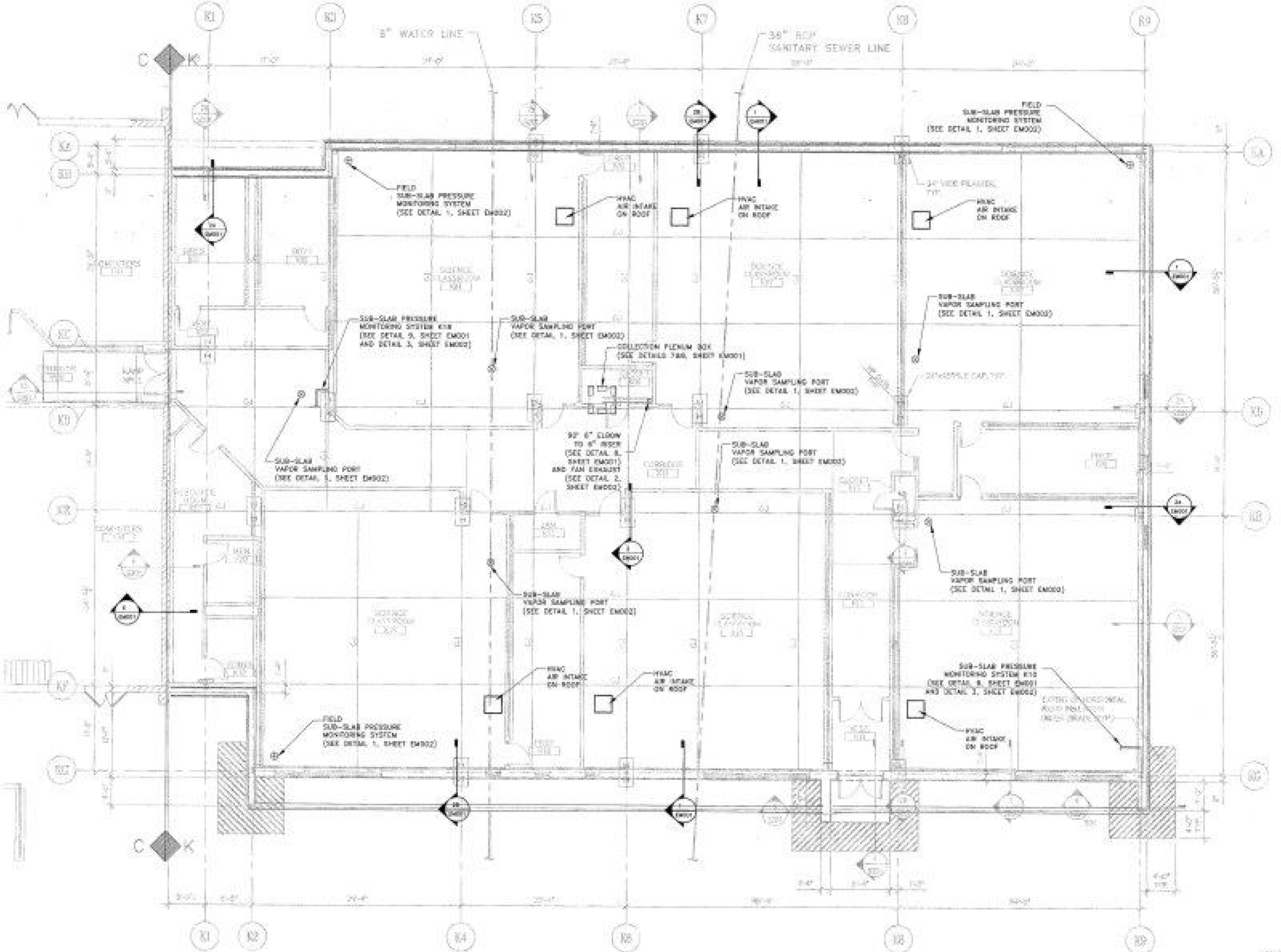
NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1.	4/6/09	ADDED TO NOTE AT DUCTWORK, DETAIL 8.			
		AND ADDED U TUBE MANOMETER	JDC	PJK	RA

PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: J.D. Croote
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: R Aldrich
DATUM:
CONTOUR INTERVAL = FEET
AS SHOWN

SUB-SLAB DEPRESSURIZATION SYSTEM
CROSS-SECTIONS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE: 2/24/09 | SCALE: AS SHOWN | DWG. NO. 28014046 | SHEET 2 OF 3



SHEET EM000

NOTES:
1) SEE SHEET EM001 FOR PROFILES OF SUB-SLAB PIPE AND PLENUM.

2) SEE SHEET EM001 FOR DETAILS AT WALLS AND PILE CAPS.

3) ROOF TOP EXHAUST MUST BE AT LEAST 25 FEET FROM ANY AIR INTAKE DEVICES.

4) CONTRACTOR TO FIELD ADJUST TO MEET SYSTEM LAYOUT AS SHOWN.

PLAN REFERENCES:
1) BASE PLAN BY KEYSTONE ASSOCIATES ENTITLED FOUNDATION/FIRST FLOOR PLAN UNIT K, NOTES, DETAILS, SED PROJECT NUMBER 07-06-00-01-0-018-018, DATED OCTOBER 8, 2007.

2) DRAWING BY KEYSTONE ASSOCIATES ENTITLED SANITARY WASTE & VENT PLAN-UNIT K, SED PROJECT NUMBER 07-06-00-01-0-018-018, DATED OCTOBER 8, 2007.

LEGEND:

━	DIFFERENTIAL PRESSURE GAUGE PIPING
▬	6" SOLID RISID FIBERGLASS CLASS 0 OR 1 PER UL 181, WITH WET LAY-UP JOINTS
⊠	8"x8"x16" CONCRETE BLOCKS

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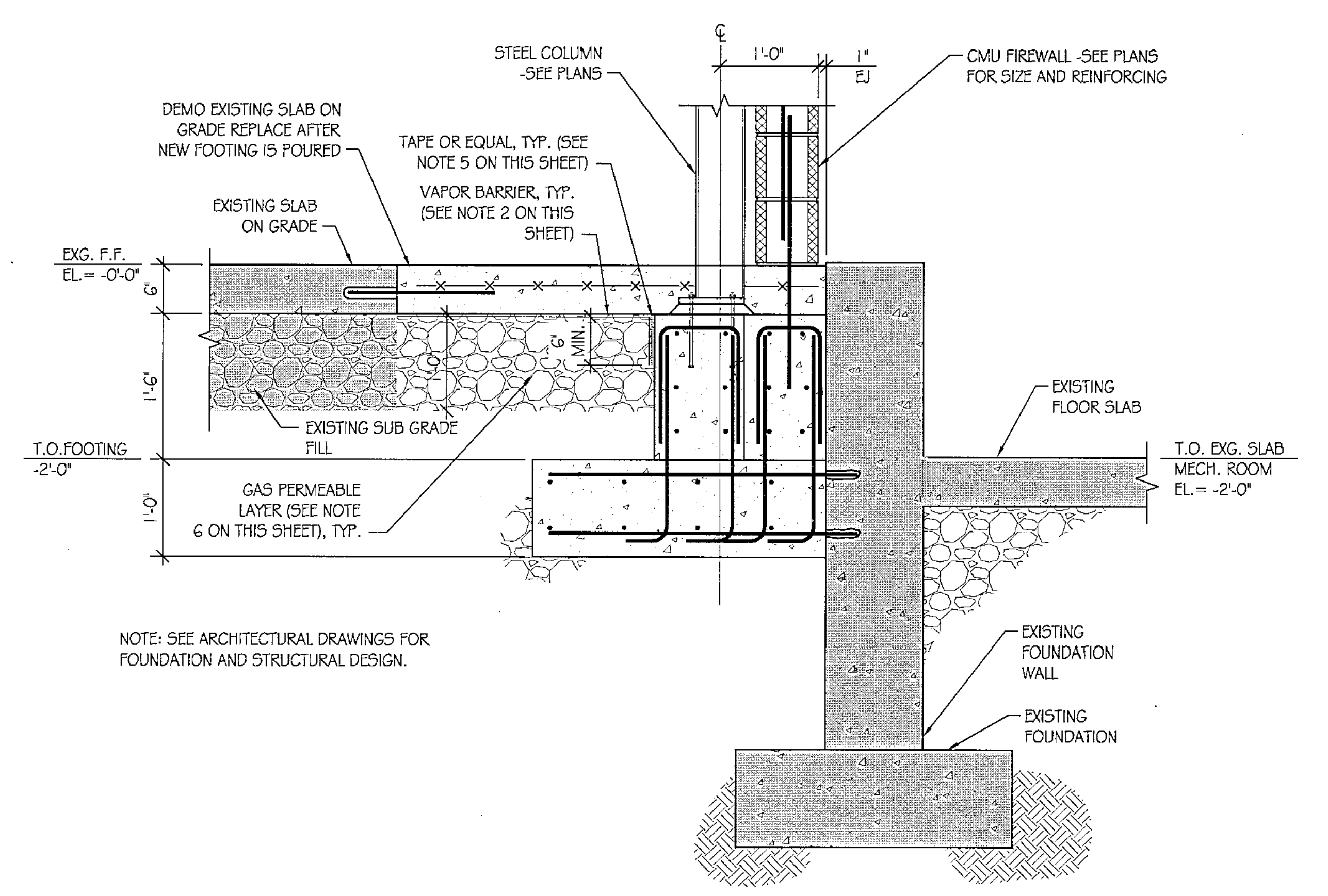
NO.	DATE	RECORD OF WORK	DRN	CKD	APPR
1	[illegible]	ADDED HVAC AIR INTAKES ADDED TO PLAN			
		[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	ADDED SUB-SLAB VAPOR SAMPLING PORTS AS			
		[illegible]	[illegible]	[illegible]	

PROJECT
PROJ. ENGR.: [illegible]
PROJ. NO.: [illegible]
PREPARED BY: [illegible]
DRAFTED BY: [illegible]
CHECKED BY: [illegible]
APPROVED BY:
DATUM:
CONTOUR INTERVAL = [illegible]
3/16"=1'-0"

SUB-SLAB
DEPRESSURIZATION SYSTEM
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

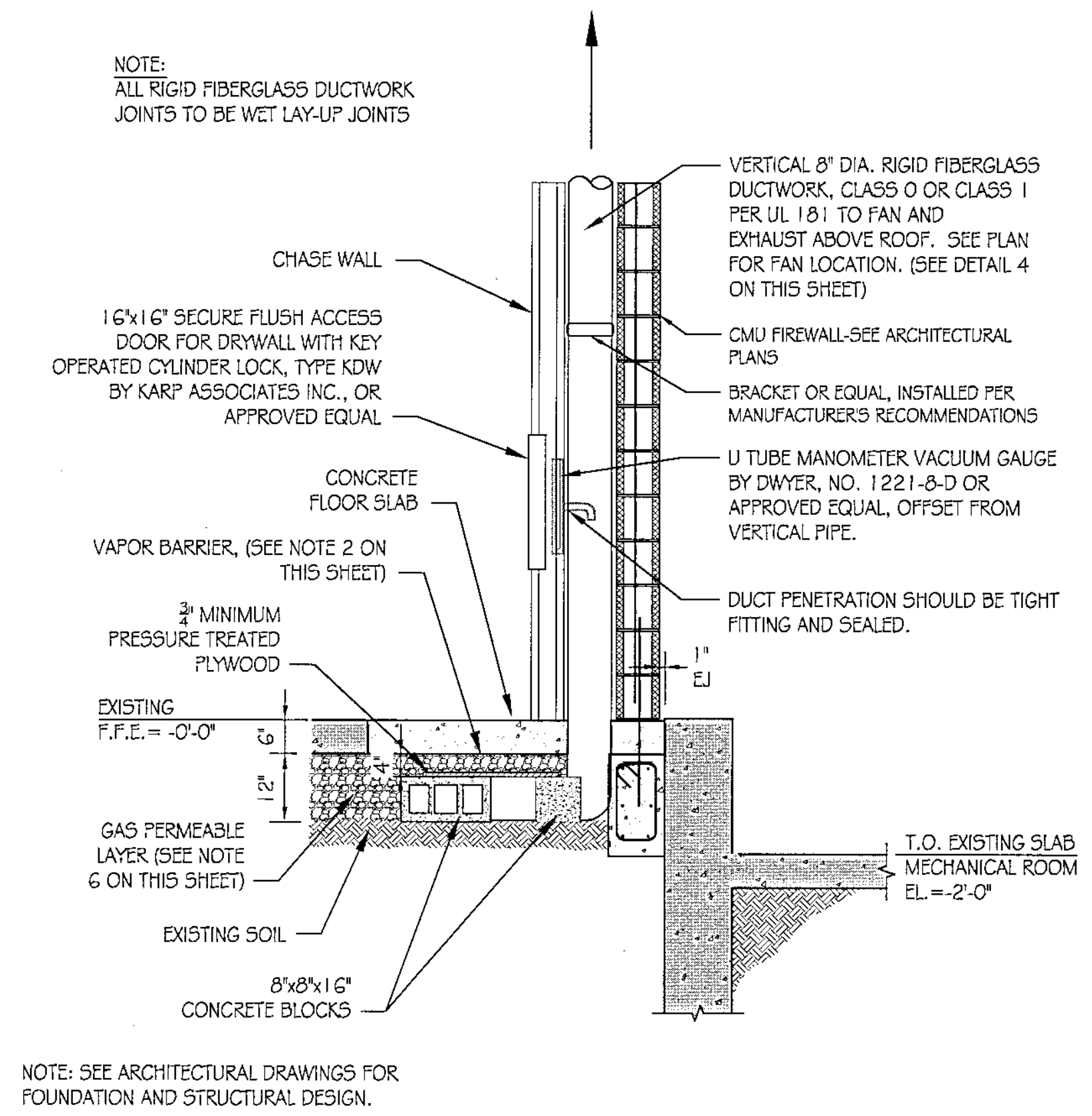
STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE [illegible] SCALE 3/16"=1'-0" DWG. NO. [illegible] SHEET 1 OF 3



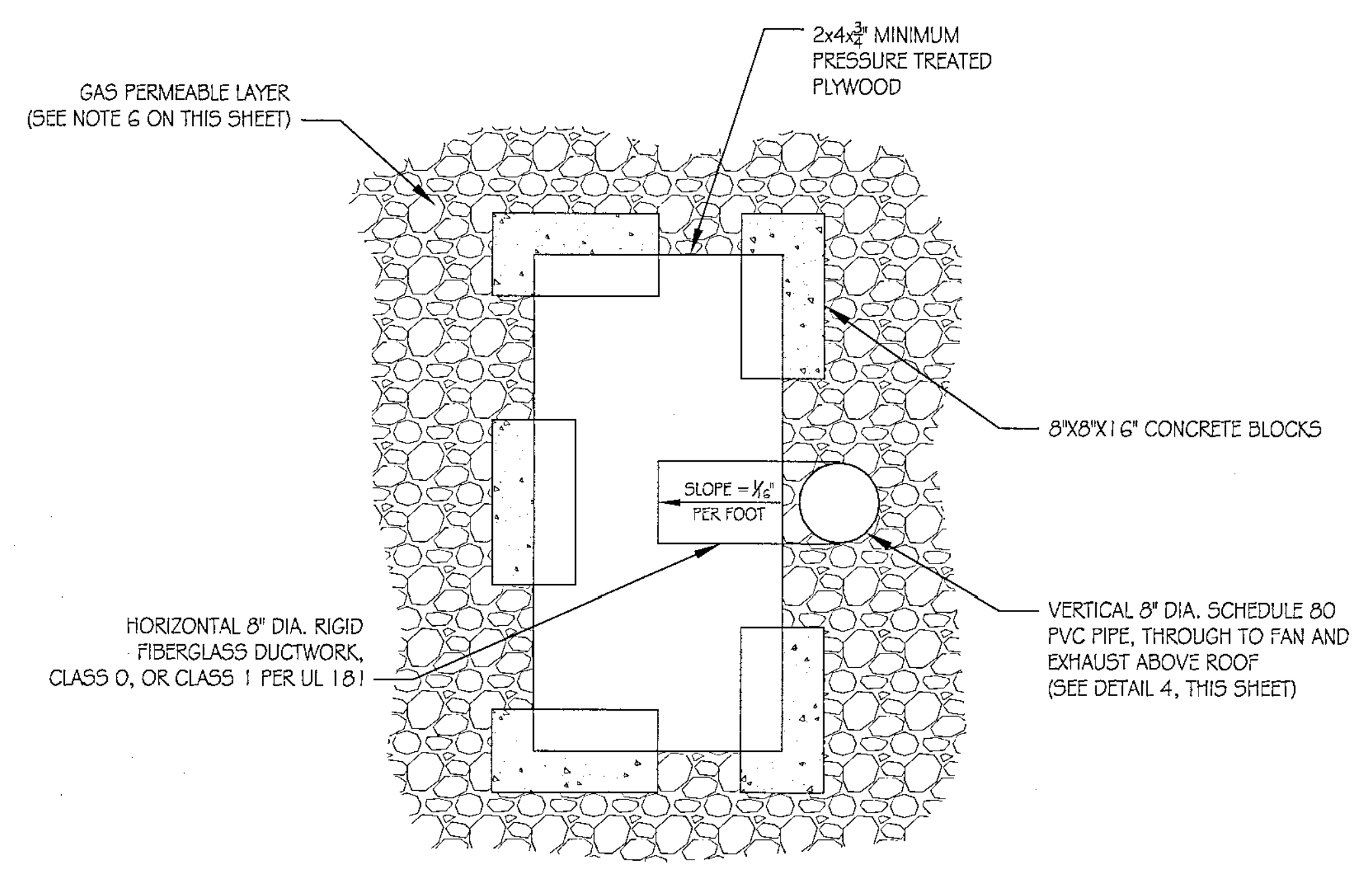
NOTE: SEE ARCHITECTURAL DRAWINGS FOR FOUNDATION AND STRUCTURAL DESIGN.

1 FOUNDATION DETAIL (PHASE II)
EM004 PROFILE VIEW (N.T.S.)

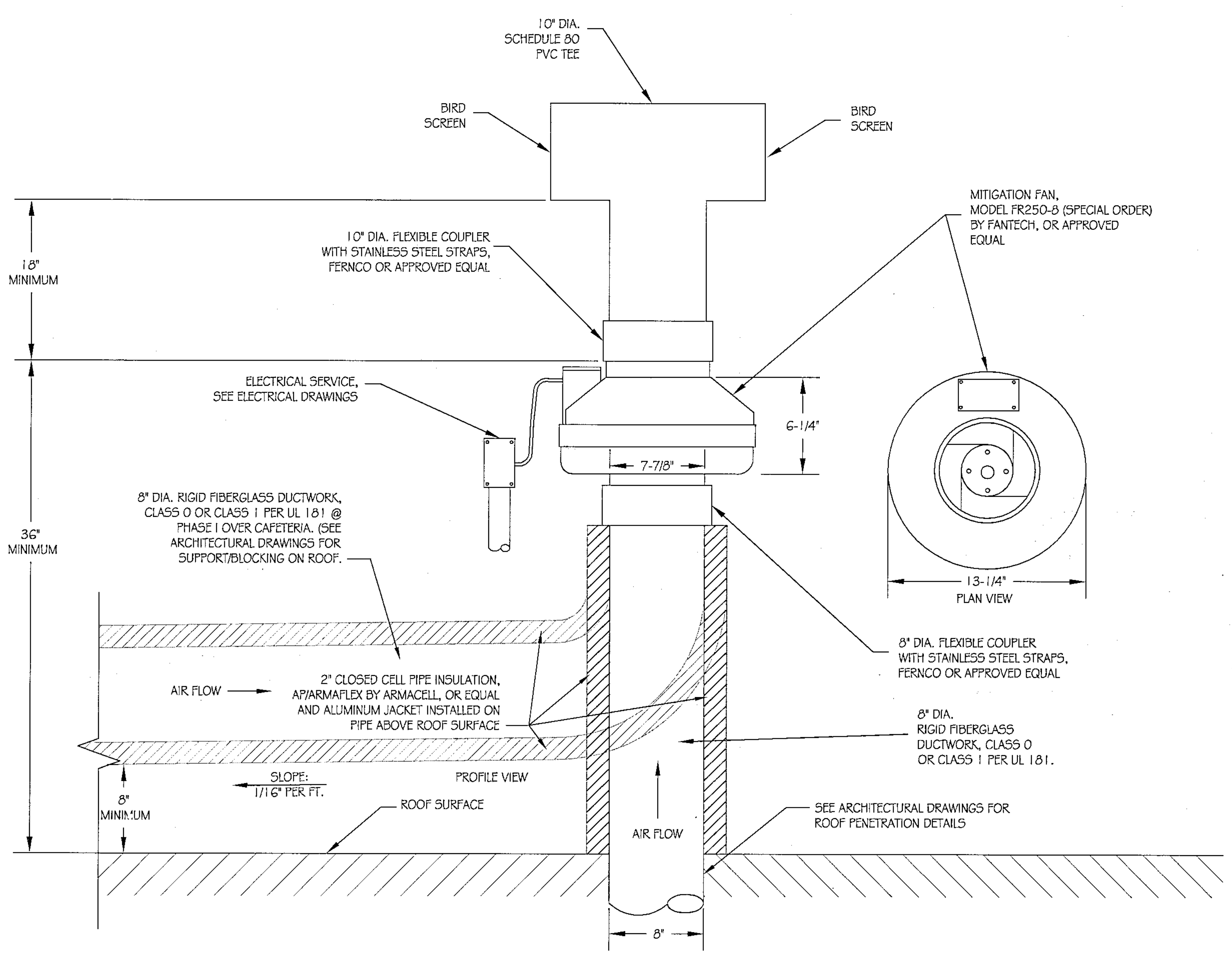


NOTE: SEE ARCHITECTURAL DRAWINGS FOR FOUNDATION AND STRUCTURAL DESIGN.

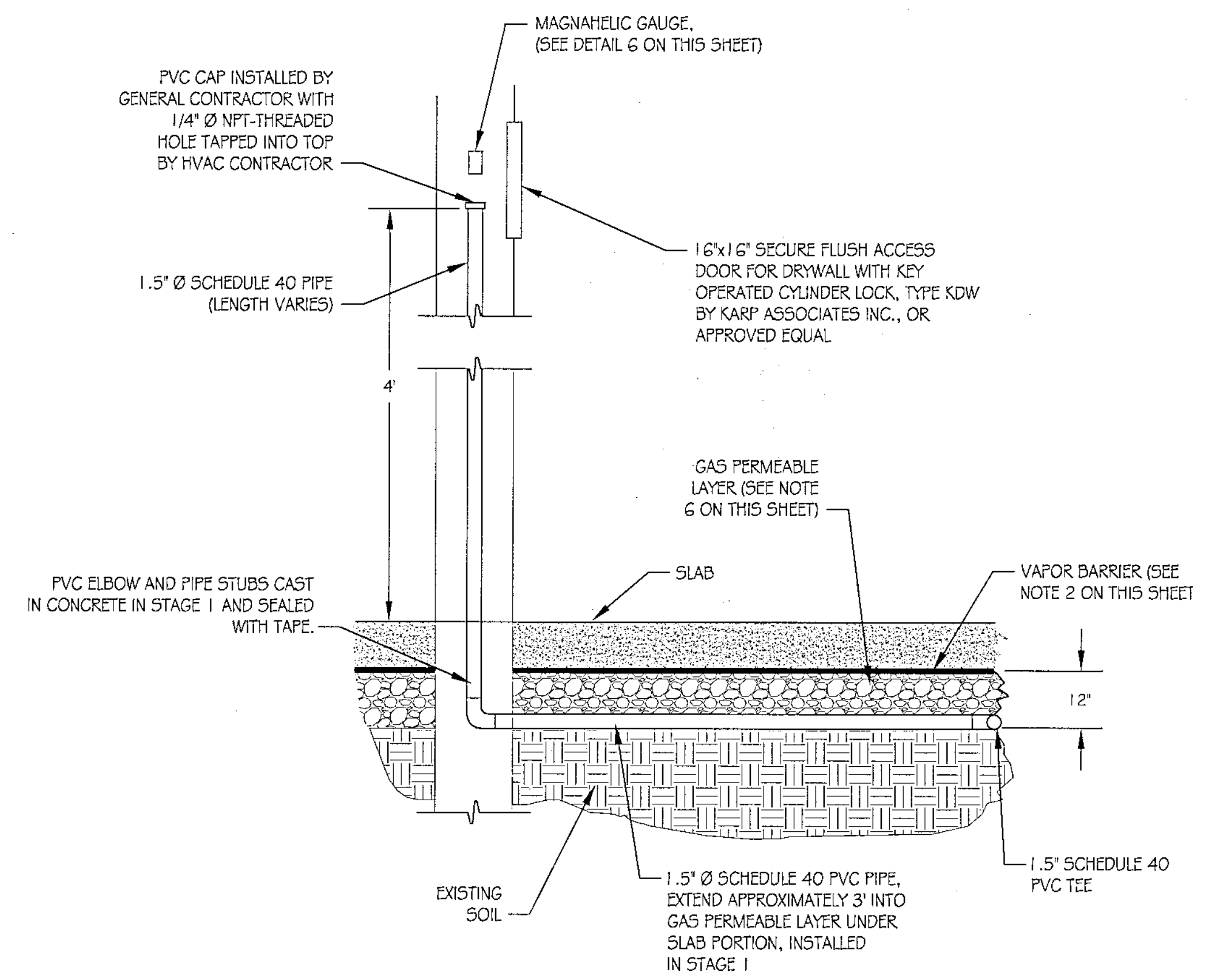
2 COLLECTION PLENUM BOX AND DEPRESSURIZATION PIPE
EM004 PROFILE VIEW (N.T.S.)



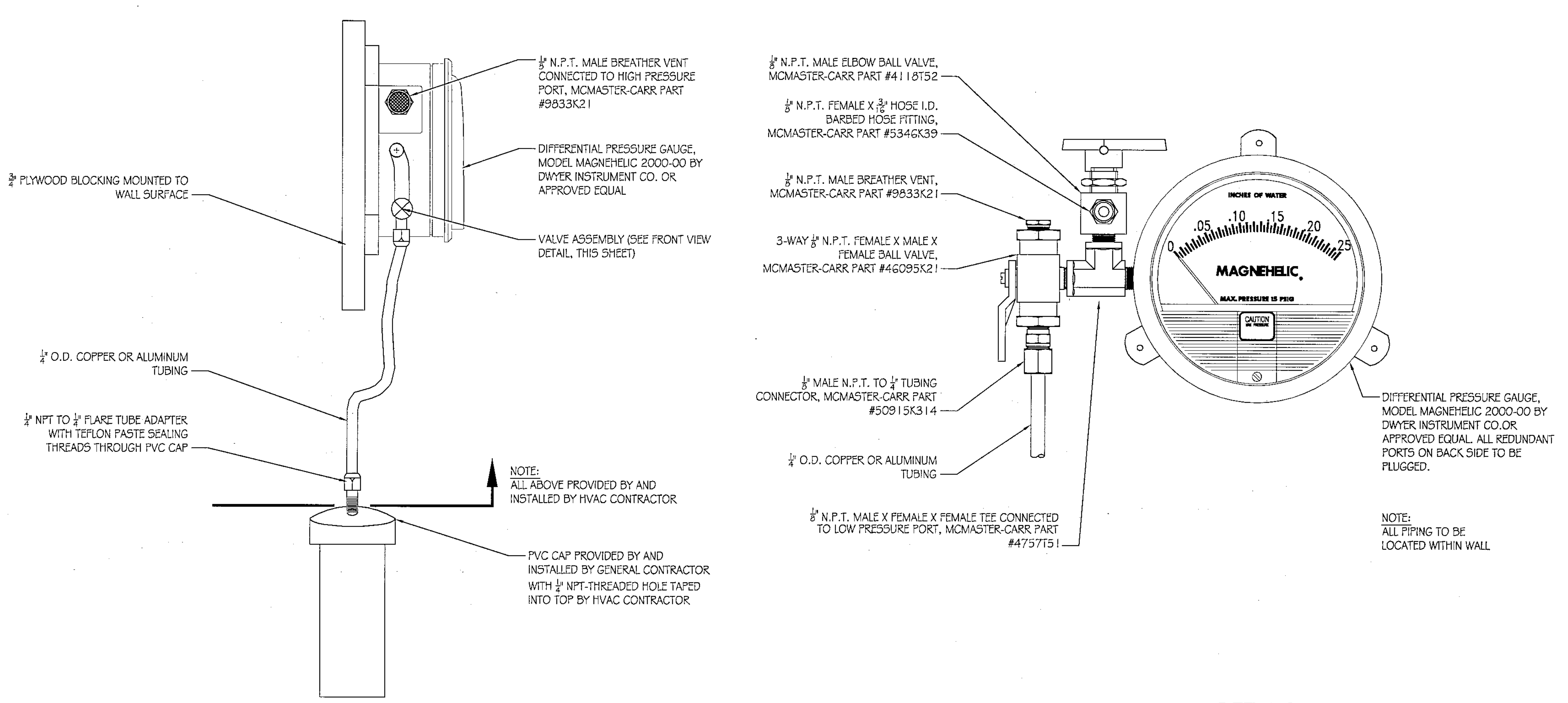
3 COLLECTION PLENUM BOX
EM004 PLAN VIEW (N.T.S.)



4 FANTECH'S FR SERIES MODEL FR 250-8
EM004 PROFILE VIEW (N.T.S.)



5 SUB-SLAB DIFFERENTIAL PRESSURE GAUGE STUB-OUT
EM004 PROFILE VIEW (N.T.S.)



INSTALLATION SCHEMATIC
PROFILE VIEW

DETAILS
FRONT VIEW

6 SUB-SLAB DIFFERENTIAL PRESSURE GAUGE INSTALLATION
EM004 (N.T.S.)

NOTES:

1. FOR ALL SOLID PIPE, DUCT, AND FITTINGS, DIMENSION REFERS TO NOMINAL DIAMETER.

2. VAPOR BARRIER WILL BE STEGO WRAP, VIPER, OR EQUAL 15 MIL VAPOR BARRIER MEETING ASTM E1745 CLASS A.

3. ALL PENETRATIONS OF VAPOR BARRIER NEED TO BE TIGHT FITTING AND SEALED.

4. ELASTOMERIC JOINT SEALER OR FILLER WILL BE SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE, SONOLASTIC NP1 ELASTOMERIC JOINT FILLER CAULK, OR EQUAL.

5. TAPE WILL BE STEGO TAPE OR EQUAL WITH EFFECTIVE ADHESION TO VAPOR BARRIER AND CONCRETE.

6. GAS PERMEABLE LAYER PLACED IN TRENCH AS BACKFILL WILL BE CLEAN CRUSHED STONE OR CLEAN CRUSHED GRAVEL MEETING AASHTO M43 SIZE NO. 57 SPECIFICATIONS.

7. SEE THIS SHEET FOR TYPICAL VAPOR BARRIER DETAILS.

SHEET EM004

RODNEY L. ALDRICH
No. 059778

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

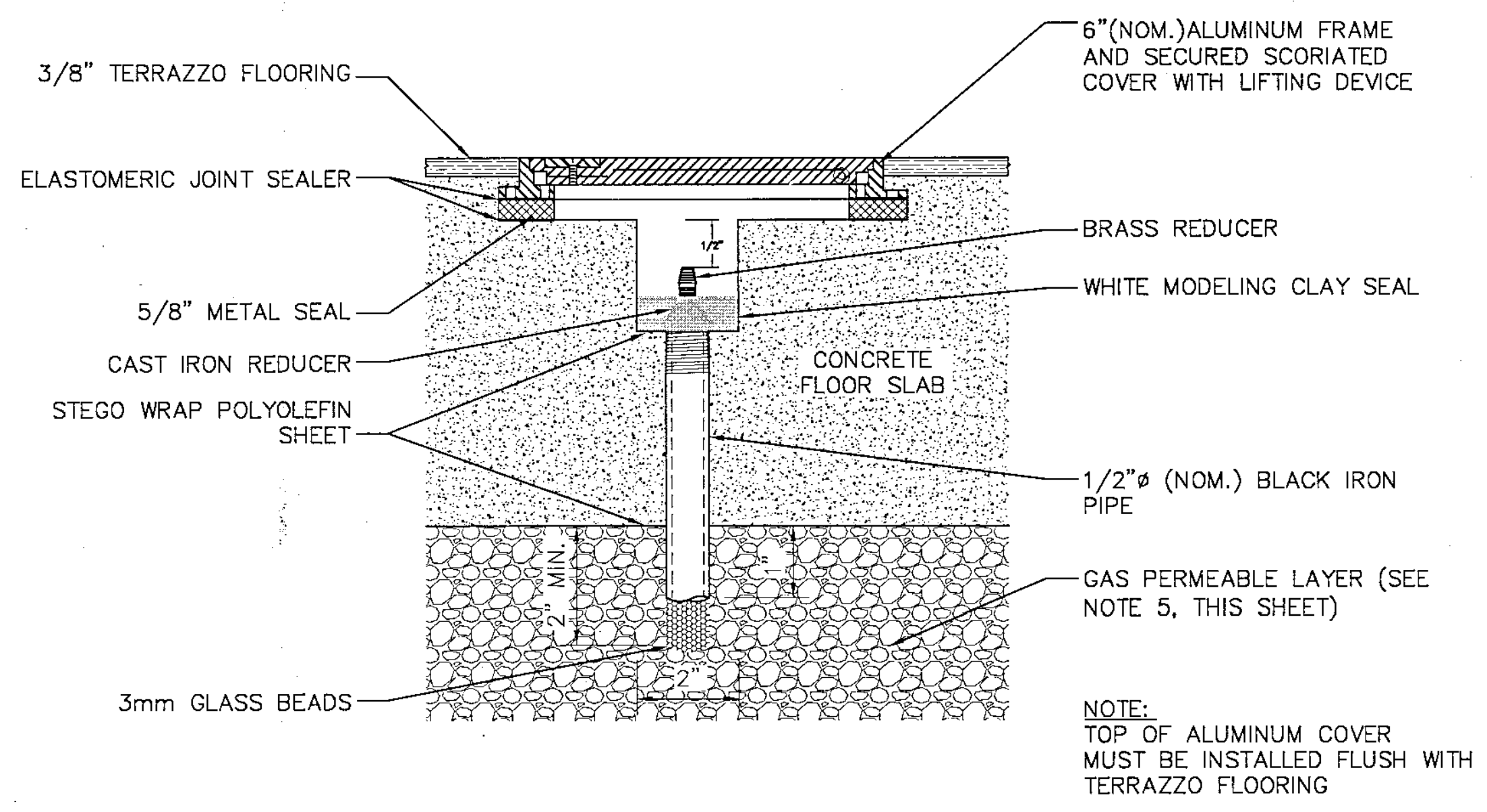
PROJECT	
PROJ. ENGR.:	R.L. Aldrich, P.E.
PROJ. NO.:	28014
PREPARED BY:	R.L. Aldrich, P.E.
DRAFTED BY:	S.D. Burton
CHECKED BY:	P.J. Kelleher, P.E.
APPROVED BY:	M.P. Millspaugh, P.E.

NOT TO SCALE

CAFETERIA SUB–SLAB DEPRESSURIZATION SYSTEM
DETAILS – PHASE II
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

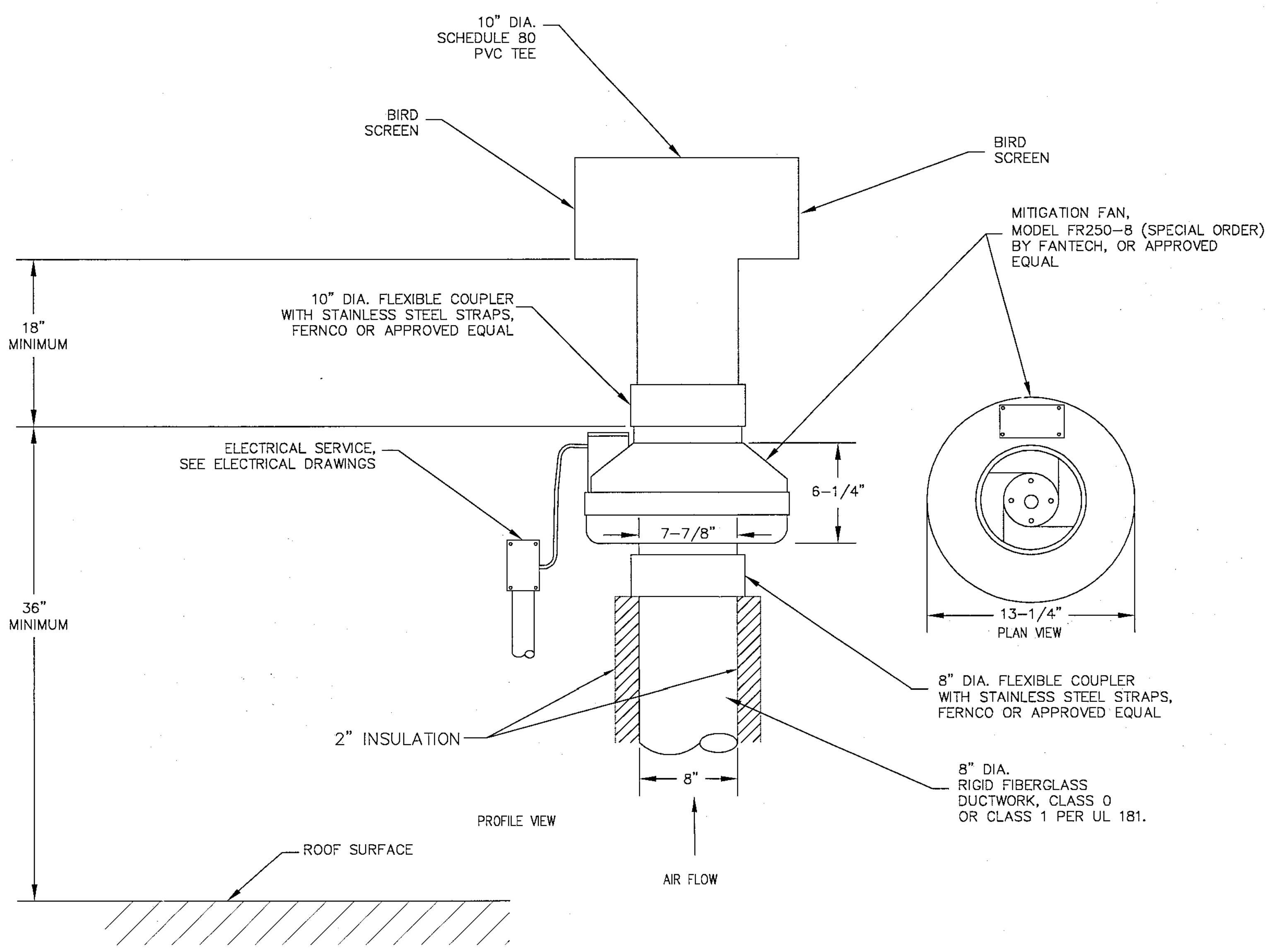
DATE: 12/9/13 | SCALE: N.T.S. | DWG. NO. 28014094 | SHEET 2 OF 2



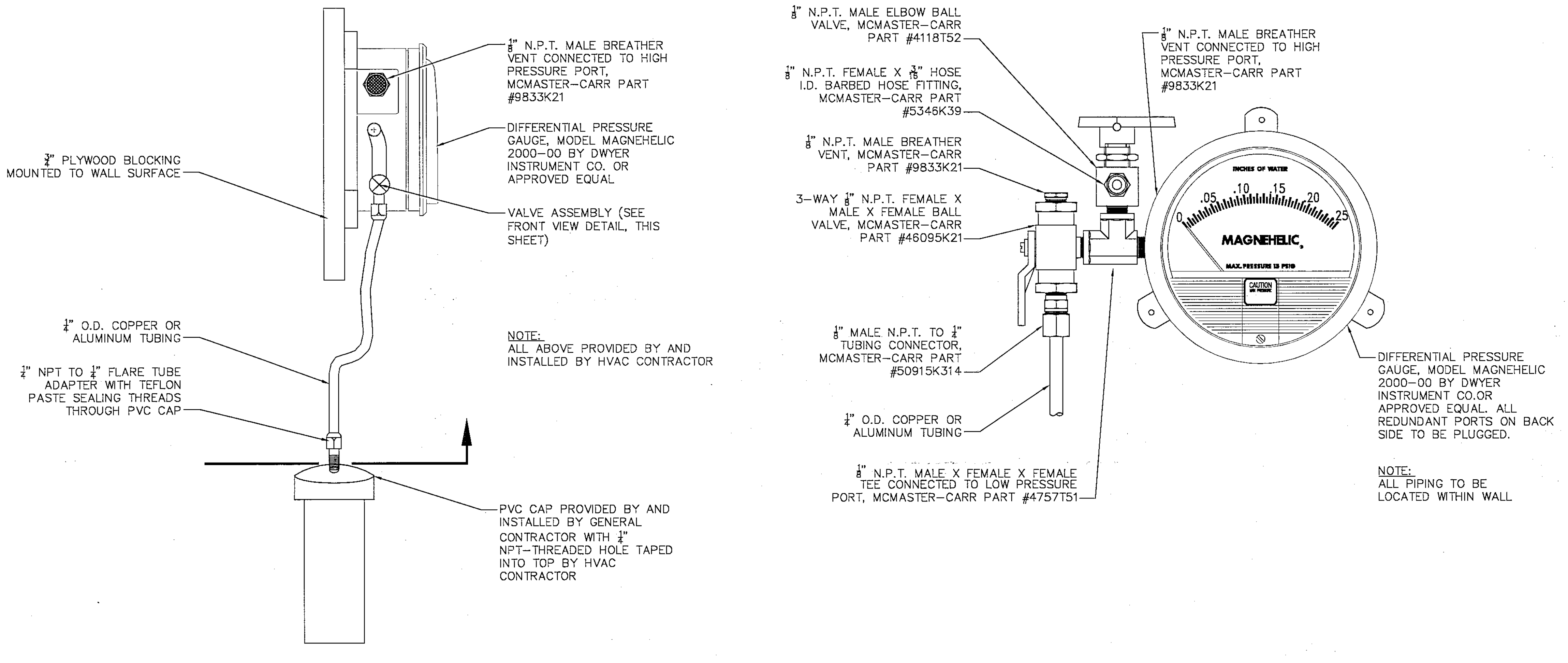
NOTE:
TOP OF ALUMINUM COVER MUST BE INSTALLED FLUSH WITH TERRAZZO FLOORING

1 EM002 SUB-SLAB DIFFERENTIAL PRESSURE PIPE FOR FIELD MONITORING

PROFILE VIEW



2 EM002 FANTECH'S FR SERIES MODEL FR 250-8



NOTE:
ALL ABOVE PROVIDED BY AND INSTALLED BY HVAC CONTRACTOR

NOTE:
ALL PIPING TO BE LOCATED WITHIN WALL

SIDE VIEW

FRONT VIEW

3 EM002 SUB-SLAB DIFFERENTIAL PRESSURE GAUGE INSTALLATION

NOTES:

1. FOR ALL SOLID PIPE, DUCT, AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. VAPOR BARRIER WILL BE STEGO WRAP, VIPER, OR EQUAL VAPOR BARRIER MEETING ASTM E1745 CLASS A.

3. ALL PENETRATIONS NEED TO BE TIGHT FITTING AND SEALED.

4. ELASTOMERIC JOINT SEALER OR FILLER WILL BE SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE, SONOLASTIC NP1 ELASTOMERIC JOINT FILLER CAULK, OR EQUAL.

5. TAPE WILL BE STEGO TAPE OR EQUAL WITH EFFECTIVE ADHESION TO VAPOR BARRIER AND CONCRETE.

6. GAS PERMEABLE LAYER WILL BE CRUSHED STONE OR CRUSHED GRAVEL MEETING NYSDOT DESIGNATION 703-2 SIZE 2 ON TABLE 703-4.

7. SEE DETAIL SHEET EM001 FOR TYPICAL VAPOR BARRIER DETAILS.

SHEET EM002

RODNEY L. ALDRICH
No. 059778

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NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

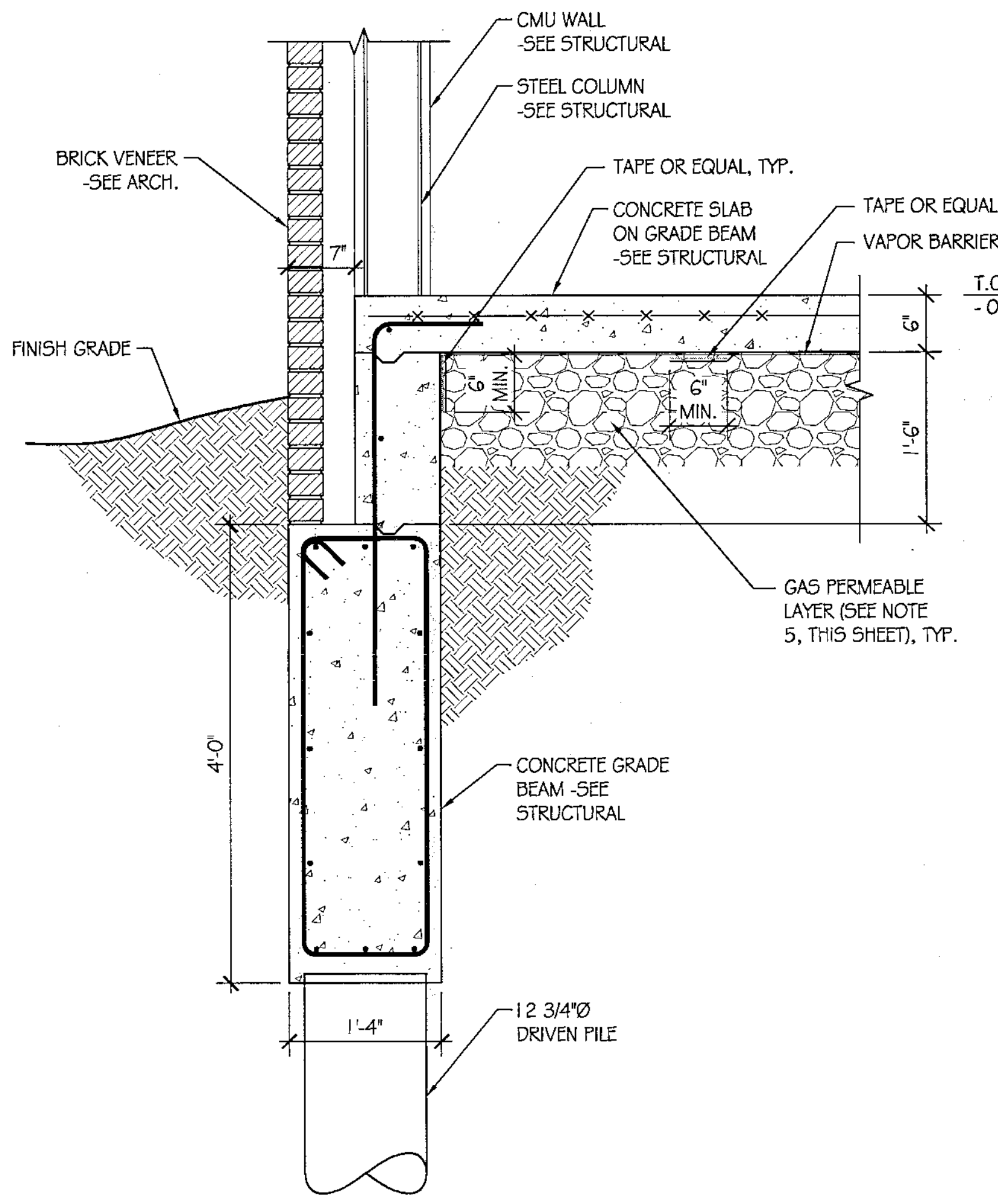
PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: S.D. Burton
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: M.P. Millspaugh, P.E.

NOT TO SCALE

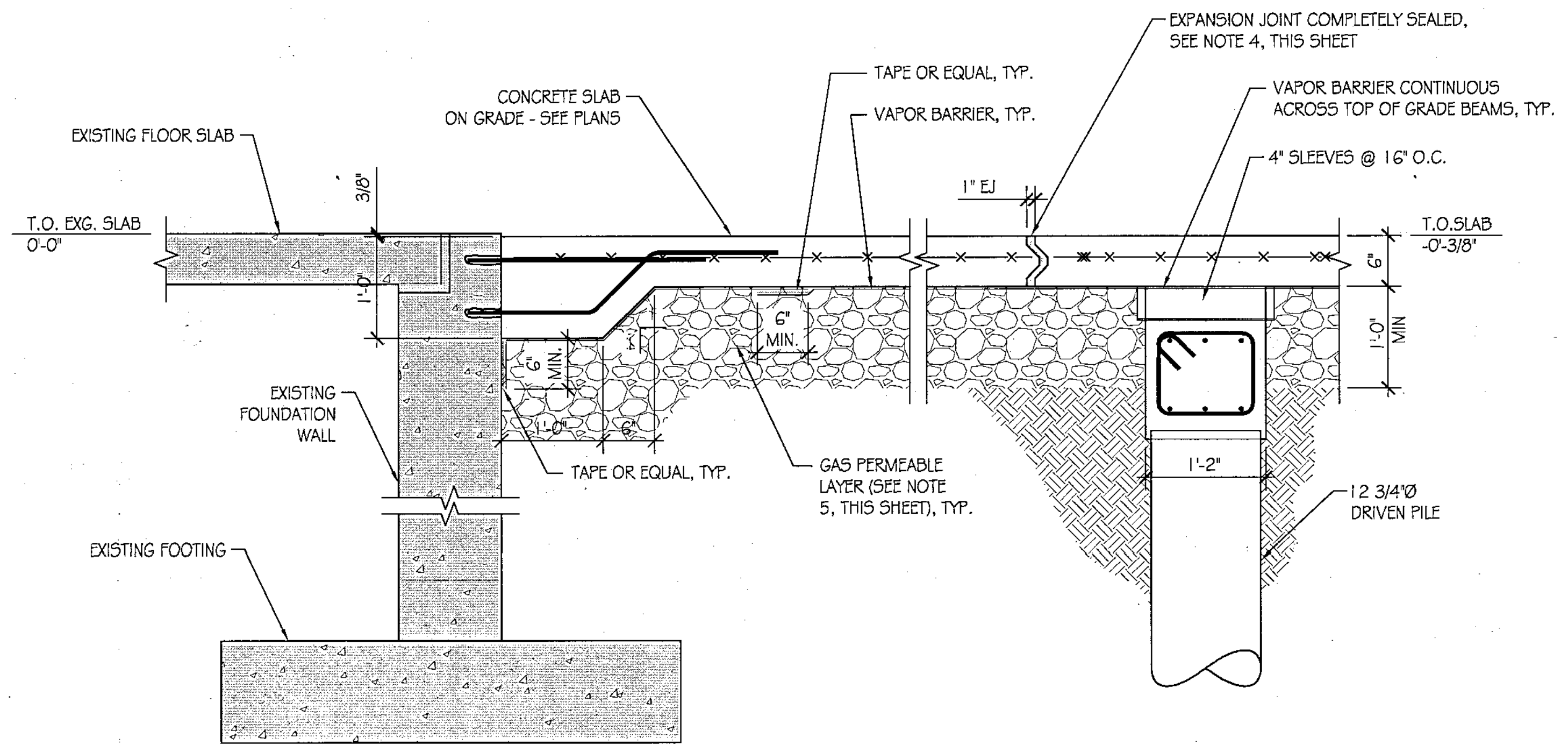
CAFETERIA SUB-SLAB DEPRESSURIZATION SYSTEM
DETAILS (CONT.)
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

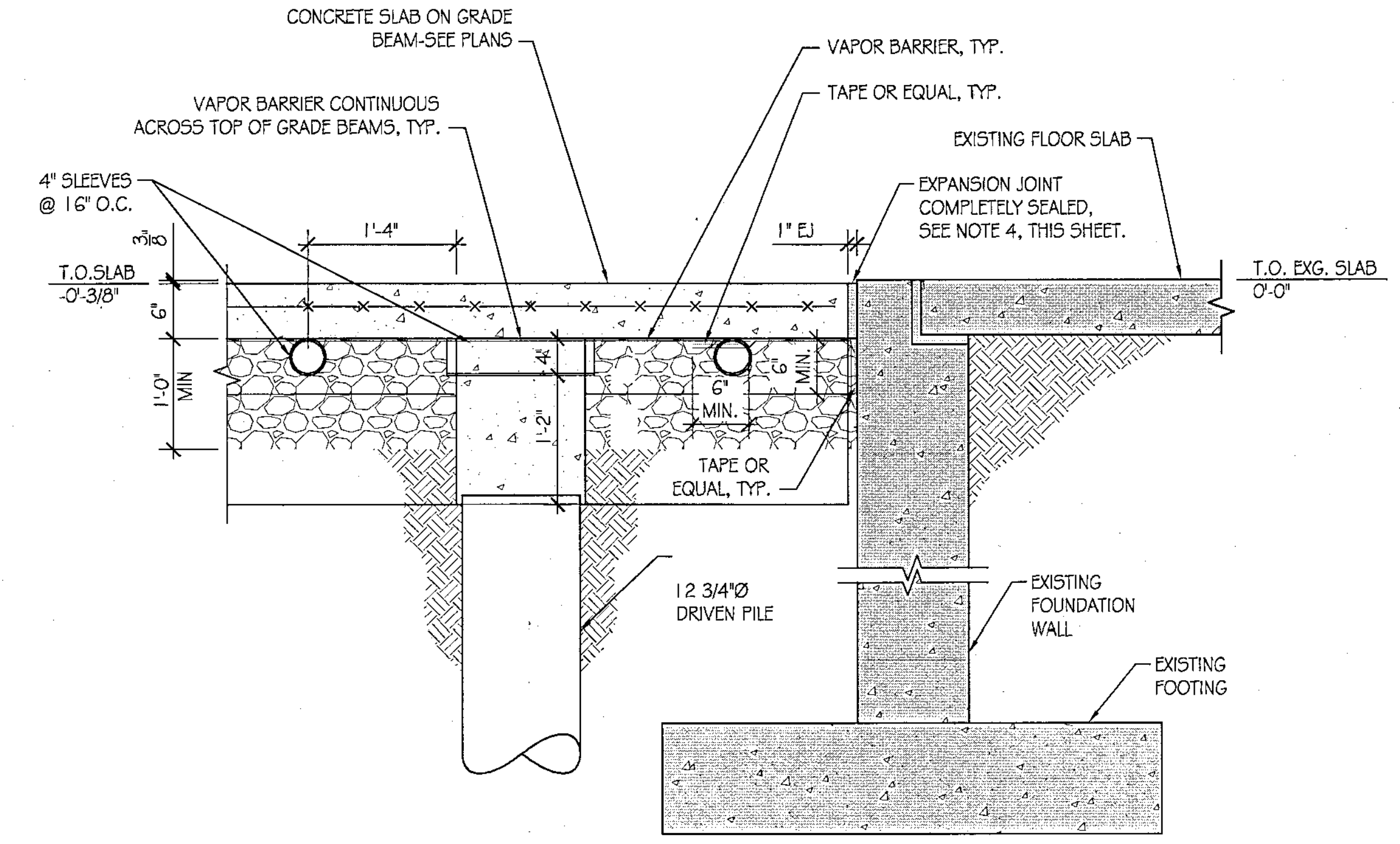
DATE: 2/26/13 SCALE: N.T.S. DWG. NO. 28014086 SHEET 3 OF 3



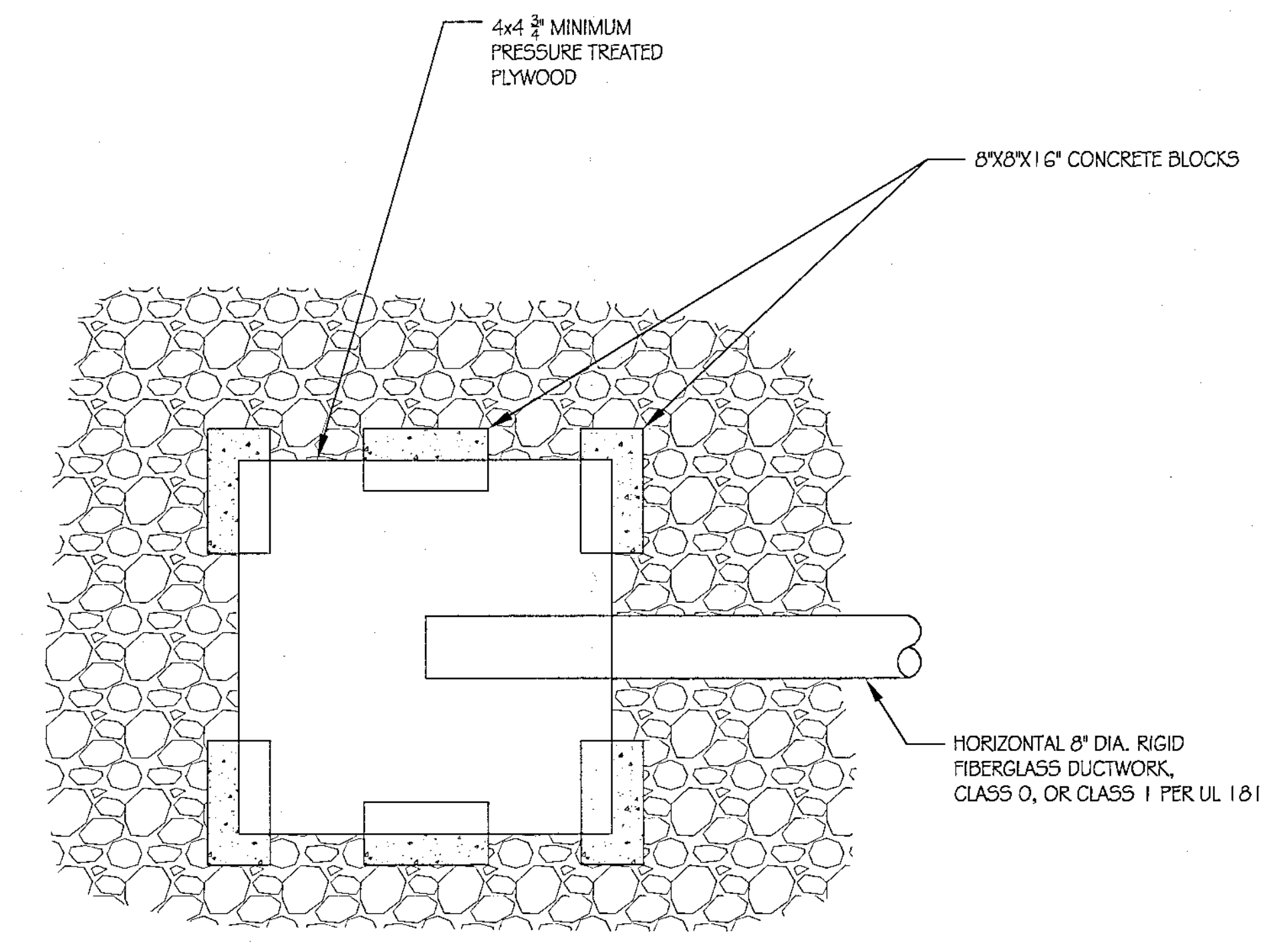
1 / EM001 GRADE BEAM AND PILE DETAIL
N.T.S.



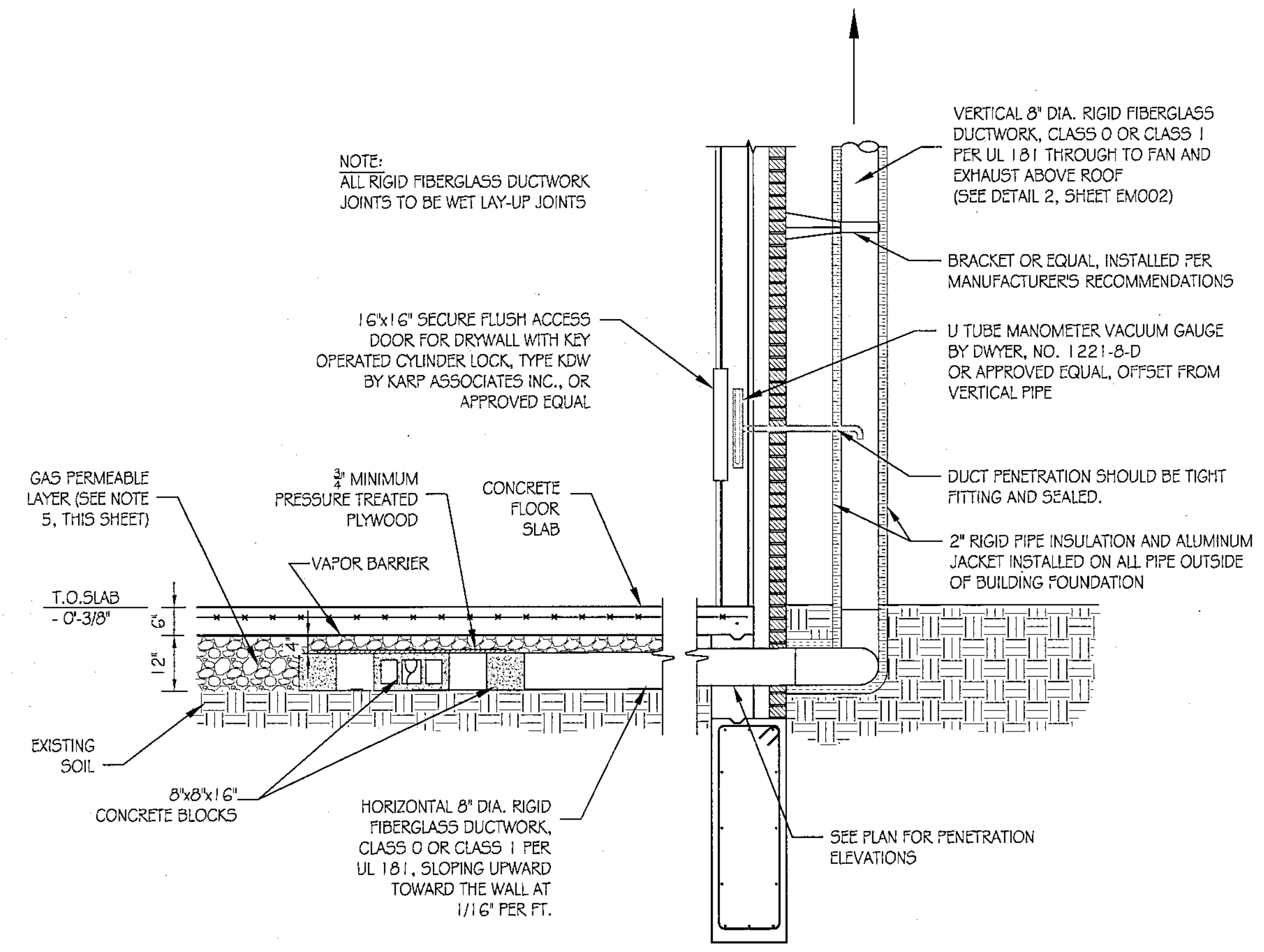
2 / EM001 GRADE BEAM AND PILE DETAIL
N.T.S.



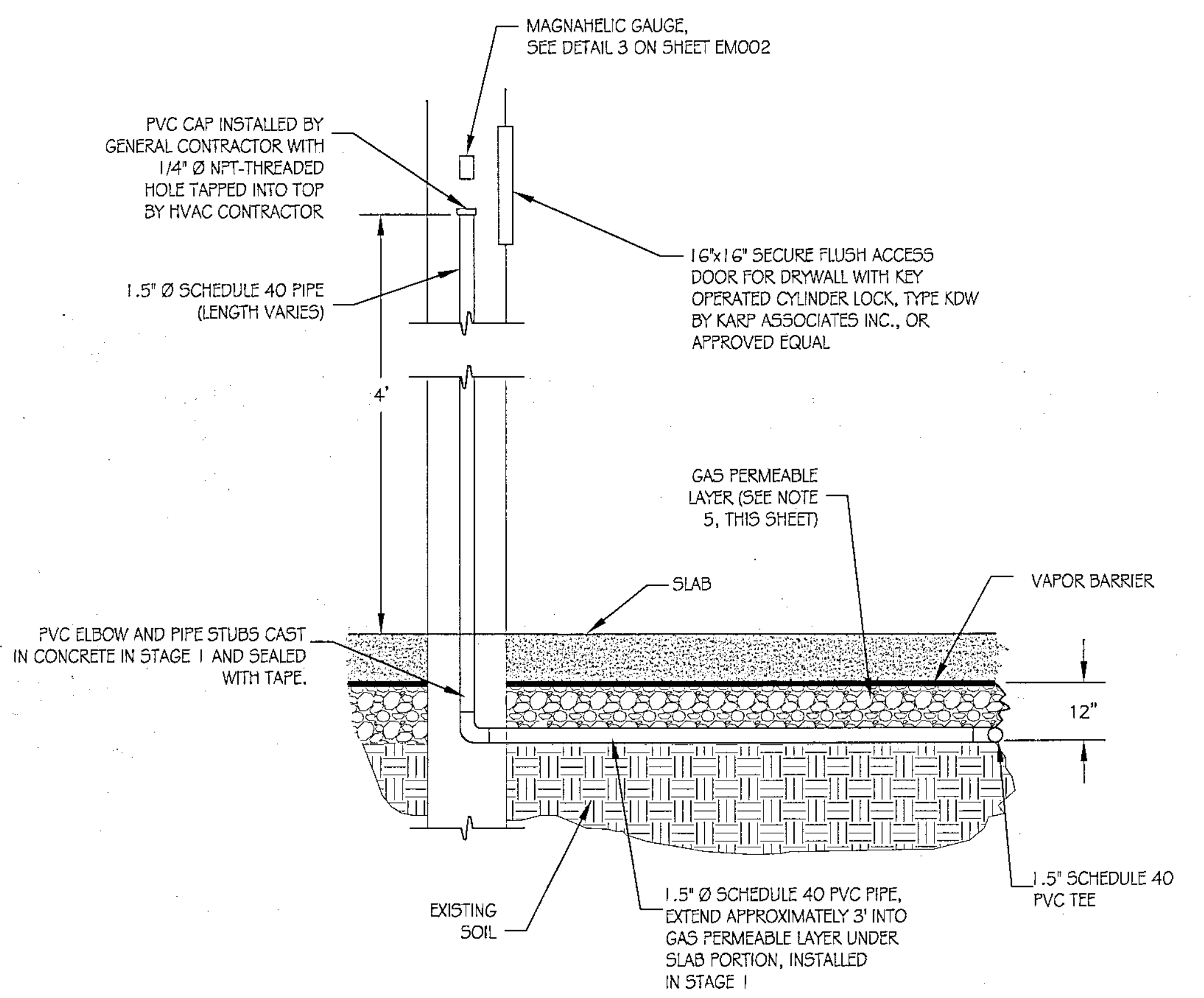
3 / EM001 GRADE BEAM AND PILE DETAIL
N.T.S.



4 / EM001 COLLECTION PLENUM BOX
PLAN VIEW (N.T.S.)



5 / EM001 COLLECTION PLENUM BOX AND DEPRESSURIZATION PIPE
PROFILE VIEW (N.T.S.)



6 / EM001 SUB-SLAB DIFFERENTIAL PRESSURE GAUGE STUB-OUT
PROFILE VIEW (N.T.S.)

NOTES:

1. FOR ALL SOLID PIPE, DUCT, AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. VAPOR BARRIER WILL BE STEGO WRAP, VIPER, OR EQUAL VAPOR BARRIER MEETING ASTM E1745 CLASS A.

3. ALL PENETRATIONS NEED TO BE TIGHT FITTING AND SEALED.

4. ELASTOMERIC JOINT SEALER OR FILLER WILL BE SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE, SONOLASTIC NP1 ELASTOMERIC JOINT FILLER CAULK, OR EQUAL.

5. TAPE WILL BE STEGO TAPE OR EQUAL WITH EFFECTIVE ADHESION TO VAPOR BARRIER AND CONCRETE.

6. GAS PERMEABLE LAYER WILL BE CRUSHED STONE OR CRUSHED GRAVEL MEETING NYSDOT DESIGNATION 703-2 SIZE 2 ON TABLE 703-4.

7. SEE DETAIL SHEET EM001 FOR TYPICAL VAPOR BARRIER DETAILS.

SHEET EM001

RODNEY L. ALDRICH
No. 059773

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

PROJECT

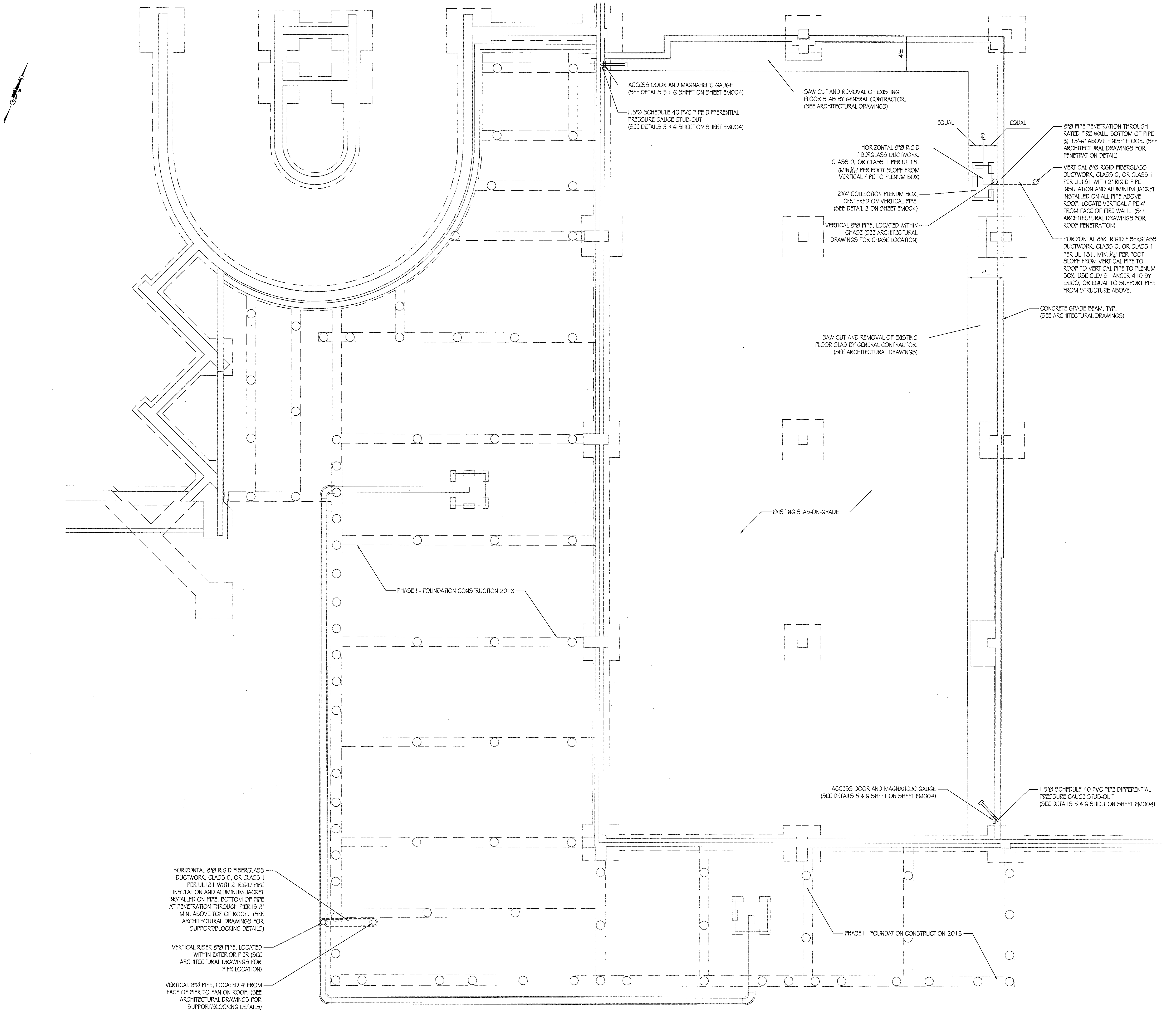
PROJ. ENGR.:	R.L. Aldrich, P.E.
PROJ. NO.:	28014
PREPARED BY:	R.L. Aldrich, P.E.
DRAFTED BY:	S.D. Burton
CHECKED BY:	P.J. Kelleher, P.E.
APPROVED BY:	M.P. Millspaugh, P.E.

NOT TO SCALE

CAFETERIA SUB-SLAB DEPRESSURIZATION SYSTEM
DETAILS
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE:	SCALE:	DWG. NO.	SHEET
2/26/13	N.T.S.	28014085	2 OF 3



PLAN VIEW
SCALE: 3/16" = 1'-0"

NOTES:

1. FOR ALL SOLID PIPE, DUCT, AND FITTINGS, DIMENSION REFERS TO NOMINAL DIAMETER.

2. VAPOR BARRIER WILL BE STEGO WRAP, VIPER, OR EQUAL 15 MIL VAPOR BARRIER MEETING ASTM E1745 CLASS A.

3. ALL PENETRATIONS OF VAPOR BARRIER NEED TO BE TIGHT FITTING AND SEALED.

4. ELASTOMERIC JOINT SEALER OR FILLER WILL BE SIKAFLEX-1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE, SONOLASTIC NP1 ELASTOMERIC JOINT FILLER CAULK, OR EQUAL.

5. TAPE WILL BE STEGO TAPE OR EQUAL WITH EFFECTIVE ADHESION TO VAPOR BARRIER AND CONCRETE.

6. GAS PERMEABLE LAYER PLACED IN TRENCH AS BACKFILL WILL BE CLEAN CRUSHED STONE OR CLEAN CRUSHED GRAVEL MEETING AASHTO M43 SIZE NO. 57 SPECIFICATIONS.

7. SEE DETAIL SHEET EM004 FOR TYPICAL VAPOR BARRIER DETAILS.

SHEET EM003

RODNEY L. ALDRICH
NO. 059778

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

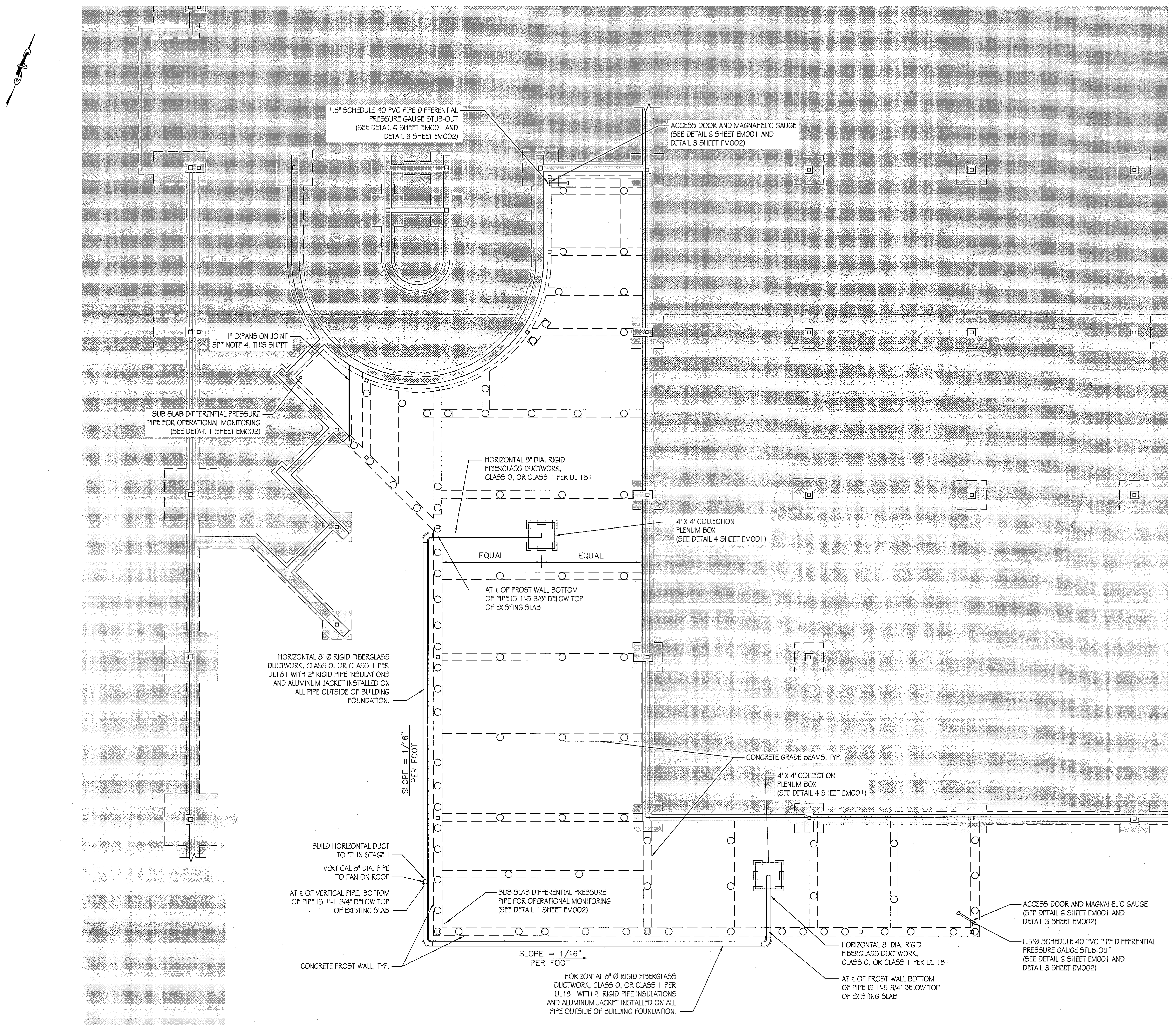
PROJECT
PROJ. ENGR.: R.L. Aldrich, P.E.
PROJ. NO.: 28014
PREPARED BY: R.L. Aldrich, P.E.
DRAFTED BY: S.D. Burton
CHECKED BY: P.J. Kelleher, P.E.
APPROVED BY: M.P. Millspaugh, P.E.

0 8 16 32
(IN FEET)
1/16 inch = 1 ft.

CAFETERIA SUB-SLAB DEPRESSURIZATION SYSTEM
PLAN VIEW - PHASE II
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE: 12/9/13 | SCALE: 3/16"=1'-0" | DWG. NO. 28014093 | SHEET 1 OF 2



NOTES:

1. FOR ALL SOLID PIPE, DUCT, AND FITTINGS, INCH DIMENSION REFERS TO NOMINAL DIAMETER.

2. VAPOR BARRIER WILL BE STEGO WRAP, VIPER, OR EQUAL VAPOR BARRIER MEETING ASTM E1745 CLASS A.

3. ALL PENETRATIONS NEED TO BE TIGHT FITTING AND SEALED.

4. ELASTOMERIC JOINT SEALER OR FILLER WILL BE SIKAFLEX–1A ONE PART POLYURETHANE, ELASTOMERIC SEAL AND ADHESIVE, SONOLASTIC NP1 ELASTOMERIC JOINT FILLER CAULK, OR EQUAL.

5. TAPE WILL BE STEGO TAPE OR EQUAL WITH EFFECTIVE ADHESION TO VAPOR BARRIER AND CONCRETE.

6. GAS PERMEABLE LAYER WILL BE CRUSHED STONE OR CRUSHED GRAVEL MEETING NYSDOT DESIGNATION 703–2 SIZE 2 ON TABLE 703–4.

7. SEE DETAIL SHEET EM001 FOR TYPICAL VAPOR BARRIER DETAILS.

SHEET EM000

RODNEY L. ALDRICH
No. 059778

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

PROJECT	
PROJ. ENGR.:	R.L. Aldrich, P.E.
PROJ. NO.:	28014
PREPARED BY:	R.L. Aldrich, P.E.
DRAFTED BY:	S.D. Burton
CHECKED BY:	P.J. Kelleher, P.E.
APPROVED BY:	M.P. Millspaugh, P.E.

NOT TO SCALE

CAFETERIA SUB–SLAB DEPRESSURIZATION SYSTEM
PLAN VIEW

ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL, 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

DATE: 2/26/13 | SCALE: N.T.S. | DWG. NO. 28014084 | SHEET 1 OF 3

APPENDIX I

SITE MANAGEMENT FORMS

APPENDIX 6A

ANNUAL INSPECTION FORMS

- Cover Systems
- Vapor Barrier System
- Exhaust Gas Permeable Layer and Negative Pressure Piping in Science Addition

ELMIRA CITY SCHOOL DISTRICT

SOUTHSIDE HIGH SCHOOL
777 SOUTH MAIN STREET, ELMIRA, NEW YORK

ANNUAL INSPECTION FORM FOR COVER SYSTEMS

Inspector: ______________________ Date: ______________

1. Describe cover system condition and list needed repairs and note location:

   a. Asphalt – Inspect for cracks, potholes, and other penetrations:

   ____

   ____

   b. Concrete – Inspect for cracks, spalling, and loose concrete:

   ____

   ____

   c. Gravel areas, mulched planting beds, and other soil cover areas – Inspect for signs of erosion and vermin burrows:

   ____

   ____

   d. Vegetated areas – Inspect for signs of erosion and bare soil:

   ____

   ____

   e. Building floor slabs – Inspect for cracks, new and unsealed penetrations of concrete floor-slab:

   ____

   ____

2. Indicate corrective actions taken for any and all deficiencies noted above, who accomplished the repair and date completed:

   ____

   ____

   ____

3. Attach photographs to this report and include a description of each photograph and date.

   ____

   ____

   ____

ELMIRA CITY SCHOOL DISTRICT

SOUTHSIDE HIGH SCHOOL
777 SOUTH MAIN STREET, ELMIRA, NEW YORK

ANNUAL INSPECTION FORM FOR VAPOR BARRIER SYSTEM IN SCIENCE ADDITION

Inspector: ______________________________ Date: _______________

1. Describe vapor barrier condition, list needed repairs and note location:

   a. Concrete – Inspect for new cracks, spalling, loose concrete, holes, or objects newly penetrating concrete (Note Location):

   ____

   ____

   b. Concrete Joints – Inspect for gaps in joint sealer, crack sealer, and sealer at penetration (Note Location):

   ____

   ____

2. Indicate corrective actions taken for any and all deficiencies noted above, who accomplished the repair and date completed:

   ____

   ____

   ____

3. Attach photographs to this report and include a description of each photograph and date.

   ____

   ____

   ____

ELMIRA CITY SCHOOL DISTRICT

SOUTHSIDE HIGH SCHOOL
777 SOUTH MAIN STREET, ELMIRA, NEW YORK

ANNUAL INSPECTION FORM FOR EXHAUST GAS PERMEABLE LAYER AND NEGATIVE PRESSURE PIPING IN SCIENCE ADDITION

Inspector: ______________________ Date: ______________

1. Describe component condition, list needed repairs and note location:

   a. Fan and Exhaust – Fan operation (vibration at housing, exhausting air), exhaust blocked? Have air intakes been added within ten (10) feet of exhaust?

   ____

   ____

   b. Gas Permeable Layer and Negative Pressure Piping –Holes, cracks or penetrations in pipe? Does duct manometer show vacuum? Do differential pressure gauges indicates negative pressure of at least 0.20 inch water column?

   ____

   ____

2. Indicate corrective actions taken for any and all deficiencies noted above, who accomplished the repair and date completed:

   ____

   ____

   ____

3. Attach photographs to this report and include a description of each photograph and date.

   ____

   ____

   ____

APPENDIX J

O&M MANUALS

ATTACHMENT 2

MEMORANDUM FROM NYSDOH TO NYSED

STATE OF NEW YORK
INTERDEPARTMENTAL MEMORANDUM

DATE: March 3, 2010

TO: Mr. Carl Thurnau, Facilities Planning Coordinator
New York State Education Department

FROM: Ms. Krista M. Anders, Public Health Specialist Krista M. Anders
New York State Department of Health

RE: NYSDOH's Assessment of Air Results
Southside High School, Elmira, Chemung County, New York

Between January 28 and February 9, 2010, the New York State Department of Health's (NYS DOH's) Bureau of Environmental Exposure Investigation received a validated air data package from the Elmira City School District's consultant, Sterling Environmental Engineering, P.C. (Sterling), for the above-referenced property. The air samples were collected in December of 2009 to verify that mitigation actions currently being implemented at the school are continuing to be effective. These actions are intended to ensure that contaminants beneath the school are not being drawn into the building and affecting the indoor air quality. The NYS DOH, under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), has completed our evaluation of the data in the context of prior air sampling completed at the school. The NYS DOH and ATSDR's goal is to make sure the New York State Education Department (NYS ED) has the information the NYS ED, Elmira City School District and Southside High School community need to understand the health effects associated with the chemicals found in the indoor air of the high school and what additional actions, if any, we recommend to reduce human exposures. The following is a summary of our assessment.

BACKGROUND

Sterling collected the samples in accordance with the Elmira City School District's indoor air quality action plan, which the district developed in response to the NYS DOH's and ATSDR's recommendations presented in the *Health Consultation for Southside High School* (ATSDR 2003). In 1995, fuel oil contamination was discovered in nearby Miller Pond, which is east of Southside High School. Environmental investigations completed by the New York State Department of Environmental Conservation (NYS DEC) found that the petroleum contamination extends from beneath the school, at an approximate depth of 15 feet below ground, toward Miller Pond. During their investigations, the NYS DEC also discovered the presence of numerous contaminants, including chlorinated solvents, associated with prior industrial activities. As discussed in the health consultation, the NYS DEC and NYS DOH completed several indoor air investigations at the school in 1997 and 2000 to evaluate whether the subsurface environmental contaminants were affecting the indoor air quality due to soil vapor intrusion.

These previous air investigations identified several compounds in the indoor air at concentrations slightly higher than typical background—most likely due to indoor sources or activities, or due to their presence in the outdoor air that enters the school building. As discussed in the health consultation, their presence was not unusual and exposure at the reported levels was not expected to be a health concern. Relatively elevated concentrations of Freons and chlorinated solvents were found in the air beneath the building's slab (referred to as the sub-slab air). However, sampling demonstrated that human exposure to the contaminants was being minimized due to the operation of the building's heating, ventilating, and air-conditioning system. The system is operated in a manner intended to minimize the potential for contaminants that are present beneath the building from being drawn into the building and affecting the indoor air quality (i.e., it is operated in a positive pressure mode).

The results of the NYS DEC and NYS DOH's sampling events in 1997 and 2000 did not show an indoor air contamination problem at the school. Overall, the results of Sterling's air sampling this past December are consistent with these previous findings.

STERLING's DECEMBER 2009 AIR SAMPLING

On December 17 and 18, 2009, Sterling collected 24 air samples at the school: 8 indoor air, 14 sub-slab air, and 2 outdoor air (duplicates from the same location). Samples were collected over a 24-hour time period. During this time period, the building's heating, ventilating, and air-conditioning system was operating in a positive pressure mode during times of occupancy (approximately 10 hours). Centek Laboratories, LLC, analyzed the air samples for a range of volatile organic compounds by using US EPA Method TO-15. The sampling locations, methods and analytical procedures are comparable to those implemented by the agencies during previous sampling events. Additional details regarding this sampling event can be found in the Elmira City School District's Indoor Air Quality Action Plan, which is included in the Environmental Management Plan for the school (Sterling 2009).

The results for all of the air samples are given in Tables 1 (indoor air), 2 (sub-slab air) and 3 (outdoor air). The sample locations and results for volatile organic compounds specifically identified in our exposure assessment are provided in Figure 1.

NYS DOH's EXPOSURE ASSESSMENT

Indoor Air

- As expected, volatile organic compounds were found in the air samples collected from inside the school. Based on a review of studies conducted to evaluate background levels of volatile chemicals in indoor air, most of the compounds present in the indoor air of the school are at concentrations consistent with levels usually found in the indoor air of buildings not affected by environmental contamination and do not represent a concern.
- Several compounds were detected at levels above those commonly found in indoor air (Table 4), but below applicable public health comparison values (Table 5):
  - (a) Freon-12 and Freon-113, throughout the school: These compounds are typically used as refrigerants and as cleaning solvents. Their presence may be related to their use at the school, their presence in the outdoor air that enters the school, or due to soil vapor intrusion.
  - (b) Chloroform, in the gym and the pool filter room: This compound is a known chlorination by-product and may be related to the swimming pool.
  - (c) 1,1-Dichloroethene, throughout the school: This compound is most likely associated with its presence in the outdoor air that enters the school.
  - (d) Trichloroethene, in Room-127: The concentration detected (2.4 micrograms per cubic meter) was higher than typical background levels, but lower than the NYS DOH's guideline of 5 micrograms per cubic meter. Its presence may be due to soil vapor intrusion.

  Overall, health effects from exposure to these compounds at the concentrations detected are unlikely (i.e., the health risks are minimal).

Sub-slab Air

- Similar to previous sampling events, chlorinated solvents and Freons were found at relatively elevated levels in the air beneath the school. In particular, elevated concentrations of one or more compounds were found beneath a portion of the gym, the pool filter room, and Room-127. No one is coming into direct contact with this air.

Outdoor Air

- Based on a review of studies conducted to evaluate background levels of volatile chemicals in outdoor air, the concentrations of most of the volatile organic compounds detected in the outdoor air sample are consistent with typical outdoor air background levels and do not represent a concern. Two compounds, 1,1-dichloroethene and Freon-12, were present at levels above those commonly found in outdoor air (Table 6), but below applicable public health comparison values (Table 5). Health effects from exposure to the concentrations detected are unlikely (i.e., the health risks are minimal).

NYS DOH's CONCLUSIONS AND RECOMMENDATIONS

Overall, the NYS DOH and ATSDR conclude that breathing volatile organic compounds at the levels found in the indoor air at the Southside High is not expected to harm people's health. Consistent with previous investigations, the recent indoor air testing results do not show a problem with chemical contamination in the school's air. However, given the concentrations of Freons and chlorinated solvents found beneath the building, we recommend that

- the school's heating, ventilating and air-conditioning system continue to be operated in a manner to prevent sub-slab air from being drawn into the building (particularly at times when the school is occupied);
- routine monitoring (e.g., of the pressure differentials between the sub-slab and building interior) be continued to verify that this mitigation measure continues to be effective;
- additional sampling be completed to evaluate the indoor air quality and the pressure differentials between the inside and outside of the building in the area of Room-127. The samples should be collected during periods when the school's heating, ventilating and air-conditioning system is operating in a positive pressure mode to obtain a more representative sample of the exposure scenario; and
- if necessary, adjustments be made to the school's heating, ventilating and air-conditioning system in the area of Room-127 to reduce the concentration of trichloroethene in the indoor air to within background ranges.

We also recommend that reasonable and practical actions be taken to reduce exposures to those compounds that are present in the indoor air at levels above background and are used or stored within the building.

We understand that the district is planning to do some work on the floor and/or concrete slab in the gym before the next school year begins. Given the levels of volatile organic compounds found beneath the slab, they may want to consider installing a sub-slab depressurization system in this portion of the building. If the building's slab is to be breached during these activities, then we recommend that an indoor air-monitoring program be implemented to address the potential for exposure to volatile organic compounds and, if possible, that the intrusive activities be completed when the building is unoccupied.

CONTACT INFORMATION

If you have any questions regarding this assessment or the recommendations contained herein, please feel free to contact me at 518-402-7860 or as follows:

via email: BEEI@health.state.ny.us [RE: Southside High School Air Results]

via mail: Krista M. Anders, Ph.D.
Public Health Specialist
Bureau of Environmental Exposure Investigation
New York State Department of Health
547 River Street, Troy, NY 12180

ADDITIONAL INFORMATION

- For information on what we mean when using the term "exposure," please see the NYS DOH's fact sheet titled *What is Exposure?* (enclosed). This fact sheet is also available on the NYS DOH's website at http://www.nyhealth.gov/environmental/about/exposure.htm.

- Please see the NYS DOH's fact sheet titled *Soil Vapor Intrusion: Frequently Asked Questions* (enclosed) for additional information on the process referred to as "soil vapor intrusion." This fact sheet is also available on the NYS DOH's website at http://www.nyhealth.gov/environmental/indoors/vapor_intrusion/fact_sheets/.

- Please see the NYS DOH's fact sheet titled *Trichloroethene (TCE) in Indoor and Outdoor Air* (enclosed) for additional information on trichloroethene and the NYS DOH's guideline of 5 micrograms per cubic meter for trichloroethene in air. This fact sheet is also available on the NYS DOH's website at http://www.nyhealth.gov/environmental/investigations/soil_gas/svi_guidance/fs_tce.htm.

REFERENCES

- ATSDR (Agency for Toxic Substance and Disease Registry). 2003. Health Consultation for Southside High School, Elmira, Chemung County, New York. U.S. September 30, 2003. Prepared by the New York State Department of Health under a cooperative agreement with the Agency for Toxic Substance and Disease Registry.

- Sterling Environmental Engineering, P.C. 2009. Elmira City School District, Southside High School, Elmira, New York: Environmental Management Plan. June 19, 2009. Prepared for the Elmira City School District.

Enclosures

ec: A. Salame-Alfie / G. Litwin / D. Miles / G. Laccetti / FILE
D. Luttinger / T. Johnson
B. Putzig / T. Schneider — NYSDEC, Region 8
L. Graziano — ATSDR, NY
G. Ulirsch — ATSDR, GA
T. Kump — Chemung County Health Department

Table 1. Indoor Air Results (micrograms per cubic meter, mcg/m^3)

Southside High School, Elmira, NY — December 16-17, 2009

Volatile Organic Compound	IA-GYM Gymnasium	IA-PF Pool Filter Room	IA-DUP [5] Duplicate of Pool Filter Room	IA-151A Room 151A	IA-127 Room 127	IA-138 Room 138	IA-CAF Cafeteria	IA-LIB Library
Chloroform	28	55	65	1.8	0.94	4.2	0.69 J	0.94
Freon 12 (Dichlorodifluoromethane)	4.2	27 JDV	3.3 JDV	25	12	6.0 J	25	9.6
Freon 113 (Trichlorotrifluoroethane)	16	97 JDV	66 JDV	9.0	4.8	6.6	7.2	7.3
1,1-Dichloroethene	< 0.60	1.1	< 0.60	1.0	0.69	0.60	0.97	1.0
1,1,1-Trichloroethane	2.4	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83
Trichloroethene	0.22	1.4 JDV	1.0 JDV	0.44	2.4	0.27	0.33	0.49
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83
1,1-Dichloroethane	< 0.62	0.49 J	< 0.62	0.49 J	< 0.62	< 0.62	0.49 J	0.41 J
1,2,4-Trichlorobenzene	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
1,2,4-Trimethylbenzene	< 0.75	1.8 JDV	1.1 JDV	< 0.75	< 0.75	1.0	0.55 J	< 0.75
1,2-Dibromoethane	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-Dichlorobenzene	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92
1,2-Dichloroethane	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62
1,2-Dichloropropane	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70
1,3,5-Trimethylbenzene	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
1,3-Butadiene	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,3-Dichlorobenzene	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92
1,4-Dichlorobenzene	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92
1,4-Dioxane	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
2,2,4-Trimethylpentane	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71
4-Ethyltoluene	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Acetone	17	37	37	18	14	23	17	16
Allyl Chloride	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48
Benzene	0.42 J	0.58	0.45 J	0.52	0.42 J	0.65	0.49	0.42 J
Benzyl Chloride	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88
Bromodichloromethane	< 1.0	1.0	0.9 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Bromomethane	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
Carbon Disulfide	< 0.47	0.32 J	< 0.47	< 0.47	< 0.47	0.95	< 0.47	< 0.47
Carbon Tetrachloride	0.32	0.45	0.38	0.38	0.32	0.38	0.38	0.38
Chlorobenzene	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70
Chloroethane	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
Chloromethane	0.63	0.61	0.69	0.61	0.55	0.5	0.8	0.67
cis-1,2-Dichloroethene	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
cis-1,3-Dichloropropene	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69
Cyclohexane	< 0.52	< 0.52	< 0.52	< 0.52	< 0.52	1.5	< 0.52	< 0.52
Dibromochloromethane	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Ethanol	3.5 JN	3.7 JN	3.2 JN	7.1 JN	7.9 JN	12 JN	6.5 JN	13 JN
Ethyl Acetate	< 0.92	< 0.92	0.77 J	< 0.92	2.1	< 0.92	3.0	< 0.92
Ethylbenzene	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66
Freon 11 (Trichlorofluoromethane)	0.80 J	1.4	1.1	2.5	0.91	2.0	2.5	1.0
Freon 114 (1,2-Dichlorotetrafluoroethane)	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
Heptane	< 0.62	< 0.62	< 0.62	0.67	6.4	0.79	< 0.62	0.87
Hexachloro-1,3-Butadiene	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Hexane	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	0.79	< 0.54	0.97
Isopropyl Alcohol	3.6	5.0	5.2	10	11	< 0.37	4.3	24
m&p-Xylene	< 1.3	0.88 J	0.66 J,JDV	0.79 J	< 1.3	1.0 J	< 1.3	< 1.3
Methyl Butyl Ketone	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Methyl Ethyl Ketone	1.0	1.4	1.4	0.57 J	0.51 J	0.84 J	0.36 J	0.78 J
Methyl Isobutyl Ketone	1.0 J	< 1.2	< 1.2	< 1.2	< 1.2	1.3	< 1.2	1.1 J
Methyl tert-Butyl Ether	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55
Methylene Chloride	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
o-Xylene	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66
Propylene	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Styrene	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65
tert-Butyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	< 1.0	0.69 J	< 1.0	0.76 J	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
Toluene	2.3	9.2 J	8.8	2.1	6.6	4.6	1.0	1.3
trans-1,2-Dichloroethene	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
trans-1,3-Dichloropropene	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69
Vinyl Acetate	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
Vinyl Bromide	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67
Vinyl Chloride	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

NOTES:

Indoor air sample locations are illustrated in Figure 1.

< The parameter is not detected at the laboratory detection limit shown.

ND Not detected in tentatively identified compounds.

LABORATORY/DATA VALIDATION QUALIFIERS:

J Analyte detected at or below quantitation limits.

JN Non-routine analyte. Quantitation estimated.

JDV Value is estimated as a result of Data Validation.

Table 2. Sub-slab Vapor Results (micrograms per cubic meter, mcg/m^3)

Southside High School, Elmira, NY — December 16-17, 2009

Volatile Organic Compound	SV-WN	SV-GYM EAST	SV-GYM WEST	SV-GS	SV-PF	SV-WS	SV-DUP [5]	SV-GL	SV-NR	SV-151A	SV-127	SV-HALL 113	SV-LIB	SV-BR
	Room 150	East Side of Gymnasium	West Side of Gymnasium	Gymnasium Storage Room	Pool Filter Room	Room 129C	Duplicate of Room 129C	Hallway Outside of Gymnasium	Room 146	Room 151A	Room 127	Hallway Behind Room 113B	Library	Boiler Room
Chloroform	18	79	32	27	1,100	[illegible]	4.1	5.3	4.7	5	7.9	4.8	35	2.9
Freon 12 (Dichlorodifluoromethane)	65	3,800	4.7	4.5	110	420	460	48	270	360	1,600	87	980	33
Freon 113 (Trichlorotrifluoroethane)	4.8	1,200	29	36	660	2.5 JDV	6.2 JDV	6.8	17	33	< 1.2	3	1.9	3.2
1,1-Dichloroethene	< 0.6	240	< 0.6	< 0.6	1.2	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
1,1,1-Trichloroethane	0.83 JDV	23,000	17	1.2	16	< 0.83	< 0.83	< 0.83	3.7 JDV	3.7	1.6 JDV	3.4 JDV	1.7 JDV	5
Trichloroethene	3.1 JDV	28	0.6 J	< 0.82	450	< 0.82	< 0.82	0.71 J	1.2 JDV	4.2	2,100	< 0.82	< 0.82	87
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83
1,1-Dichloroethane	3.9	95	< 0.62	< 0.62	1.7	0.62	0.72	< 0.62	1.1	1.7	1.3	2.1	< 0.62	< 0.62
1,2,4-Trichlorobenzene	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
1,2,4-Trimethylbenzene	1.6 JDV	2.4 JDV	1.2	0.60 J	4.1 JDV	2.2 JDV	2.3 JDV	0.75	3.3 JDV	4.5 JDV	4.2 JDV	4.6 JDV	2.5 JDV	3.7 JDV
1,2-Dibromoethane	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-Dichlorobenzene	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92
1,2-Dichloroethane	0.53 J	< 0.62	< 0.62	< 0.62	0.82	< 0.62	< 0.62	< 0.62	< 0.62	0.62	0.45 J	0.95	< 0.62	< 0.62
1,2-Dichloropropane	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70
1,3,5-Trimethylbenzene	< 0.75	0.65 J,JDV	< 0.75	< 0.75	1.4 JDV	0.61 J,JDV	0.63 J,JDV	< 0.75	1.3 JDV	1.1 JDV	0.83 JDV	1.1 JDV	< 0.75	0.85 JDV
1,3-Butadiene	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,3-Dichlorobenzene	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92
1,4-Dichlorobenzene	< 0.92	1.2	< 0.92	< 0.92	0.67 J,JDV	< 0.92	< 0.92	< 0.92	1.1 JDV	< 0.92	< 0.92	< 0.92	< 0.92	0.67 J,JDV
1,4-Dioxane	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
2,2,4-Trimethylpentane	0.68 J,JDV	0.95 JDV	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	1.0 JDV	0.57 J,JDV	1.6 JDV	0.90 JDV	< 0.71
4-Ethyltoluene	< 0.75	0.92 J,JDV	< 0.75	< 0.75	1.4 JDV	0.70 J,JDV	0.80	< 0.75	1.3 JDV	1.2 JDV	1.8 JDV	0.95 JDV	< 0.75	0.95 JDV
Acetone	77	190	11	22	53	190	190	25	43	43	130	110	120	27
Allyl Chloride	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48
Benzene	1.5 JDV	17	0.35 J	0.42 J	1.4	0.58 JDV	0.75	1.8	1.2 JDV	1.7	1.4 JDV	30	1.8 JDV	0.81
Benzyl Chloride	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88
Bromodichloromethane	2.7 JDV	11	< 1.0	< 1.0	12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Bromomethane	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
Carbon Disulfide	13	15	0.76	< 0.47	2.5	2.7	2.3	1.7	3.8	3.4	1.2	2.3	3.5	0.92
Carbon Tetrachloride	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98
Chlorobenzene	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70
Chloroethane	9.7	3.0	< 0.40	< 0.40	2.2	0.86	0.91	< 0.40	2.1	2.5	2.4	2.8	< 0.40	< 0.40
Chloromethane	0.27 J	< 0.31	0.69	1.6	< 0.31	< 0.31	< 0.31	0.69	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31
cis-1,2-Dichloroethene	< 0.60	< 0.60	< 0.60	< 0.60	2.2	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	300	< 0.60	< 0.60	< 0.60
cis-1,3-Dichloropropene	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69
Cyclohexane	< 0.52	< 0.52	< 0.52	< 0.52	7.8	< 0.52	< 0.52	< 0.52	< 0.52	2.9	< 0.52	< 0.52	< 0.52	< 0.52
Dibromochloromethane	< 1.3	2.0	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Ethanol	ND	ND	ND	3 JN	ND	3.3 JN	7.2 JN	2.7 JN	ND	ND	ND	ND	8.8 JN	ND
Ethyl Acetate	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	< 0.92	1.7	< 0.92	< 0.92	< 0.92	11	< 0.92	< 0.92
Ethylbenzene	1.1 JDV	3.4 JDV	< 0.66	0.53 J	0.87 JDV	1.6 JDV	1.9 JDV	1.7	2.8 JDV	2.9 JDV	2.5 JDV	3.3 JDV	1.3 JDV	2.0 JDV
Freon 11 (Trichlorofluoromethane)	0.69 J	21	0.86	1.5	2.8	1.3	3.3	0.86	34	1.9	0.88	1.3	1.0	4.2
Freon 114 (1,2-Dichlorotetrafluoroethane)	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
Heptane	21	30	< 0.62	< 0.62	5.7	2.9	3.2	0.67	9.3	6.3	3.9	6.6	7.1	4.0
Hexachloro-1,3-Butadiene	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Hexane	54	65	< 0.54	< 0.54	9.8	< 0.54	< 0.54	< 0.54	8.1	7.1	< 0.54	< 0.54	22	< 0.54
Isopropyl Alcohol	< 0.37	< 0.37	2.8	2.2	3.2	< 0.37	9.5	3.1	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	2.9
m&p-Xylene	4.1 JDV	4.9 JDV	0.88 J	1.7	2.1 JDV	4 JDV	4.9 JDV	0.62 J	9.5 JDV	9.2 JDV	7.6 JDV	9.9 JDV	3.7 JDV	6.6 JDV
Methyl Butyl Ketone	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	3.1 JDV	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Methyl Ethyl Ketone	19	< 0.90	0.84 J	0.90	7.2	3.2	3.3	13	9.8	8.6 J	5.5	210	5.4	2.1
Methyl Isobutyl Ketone	2.2 JDV	7.0 JDV	0.92 J	2.2	< 1.2	0.54 J,JDV	0.58 J,JDV	< 1.2	< 1.2	2.3 JDV	1.8 JDV	1.4 JDV	2.0 JDV	0.71 J,JDV
Methyl tert-Butyl Ether	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55
Methylene Chloride	0.88	< 0.53	< 0.53	< 0.53	3.4	< 0.53	< 0.53	1.5	< 0.53	0.42 J	0.46 J	1.9	0.42 J	< 0.53
o-Xylene	1.1 JDV	2.0 JDV	0.49 J	0.62 J	0.88 JDV	1.5 JDV	1.8 JDV	0.66	2.8 JDV	2.8 JDV	2.5 JDV	2.7 JDV	1.0 JDV	2.2 JDV
Propylene	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Styrene	< 0.65	2.3 JDV	< 0.65	< 0.65	1.0 JDV	< 0.65	< 0.65	18	3.9 JDV	1.2 JDV	1.3 JDV	0.87 JDV	0.43 J,JDV	1.1 JDV
tert-Butyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	< 1.0	54 JDV	< 1.0	< 1.0	7.4 JDV	< 1.0	< 1.0	< 1.0	1.2 JDV	1.1 JDV	2.4 JDV	< 1.0	3.1 JDV	1.9 JDV
Tetrahydrofuran	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
Toluene	16	39 JDV	1.7	5.8	7.1 JDV	37	31	2.9	21	31	29	45	14	19
trans-1,2-Dichloroethene	< 0.60	< 0.60	< 0.60	< 0.60	0.52 J	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	21 J	< 0.60	< 0.60	< 0.60
trans-1,3-Dichloropropene	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69	< 0.69
Vinyl Acetate	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
Vinyl Bromide	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67	< 0.67
Vinyl Chloride	2.1	0.75	< 0.39	< 0.39	0.44	< 0.39	< 0.39	< 0.39	0.52	0.39	0.55	0.42	< 0.39	< 0.39

NOTES:

Indoor air sample locations are illustrated in Figure 1

< The parameter is not detected at the laboratory detection limit shown.

ND Not detected in tentatively identified compounds.

LABORATORY/DATA VALIDATION QUALIFIERS:

J Analyte detected at or below quantitation limits

JN Non-routine analyte. Quantitation estimated.

JDV Value is estimated as a result of Data Validation

Table 3. Outoor Air Results (micrograms per cubic meter, mcg/m^3)

Southside High School, Elmira, NY — December 16-17, 2009

Volatile Organic Compound	OA-UR	OA-DUP [5]
	Roof, Upwind	Duplicate of Roof, Upwind
Chloroform	0.60 J	< 0.74
Freon 12 (Dichlorodifluoromethane)	5.5 J	9.0
Freon 113 (Trichlorotrifluoroethane)	6.3	5.5
1,1-Dichloroethene	0.81	0.73
1,1,1-Trichloroethane	< 0.83	< 0.83
Trichloroethene	< 0.22	< 0.22
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.83	< 0.83
1,1-Dichloroethane	< 0.62	< 0.62
1,2,4-Trichlorobenzene	< 1.1	< 1.1
1,2,4-Trimethylbenzene	< 0.75	< 0.75
1,2-Dibromoethane	< 1.2	< 1.2
1,2-Dichlorobenzene	< 0.92	< 0.92
1,2-Dichloroethane	< 0.62	< 0.62
1,2-Dichloropropane	< 0.70	< 0.70
1,3,5-Trimethylbenzene	< 0.75	< 0.75
1,3-Butadiene	< 0.34	< 0.34
1,3-Dichlorobenzene	< 0.92	< 0.92
1,4-Dichlorobenzene	< 0.92	< 0.92
1,4-Dioxane	< 1.1	< 1.1
2,2,4-Trimethylpentane	< 0.71	< 0.71
4-Ethyltoluene	< 0.75	< 0.75
Acetone	9.9	9.9
Allyl Chloride	< 0.48	< 0.48
Benzene	0.39 J	0.36 J
Benzyl Chloride	< 0.88	< 0.88
Bromodichloromethane	< 1.0	< 1.0
Bromoform	< 1.6	< 1.6
Bromomethane	< 0.59	< 0.59
Carbon Disulfide	< 0.47	< 0.47
Carbon Tetrachloride	< 0.26	< 0.26
Chlorobenzene	< 0.70	< 0.70
Chloroethane	< 0.40	< 0.40
Chloromethane	0.57	0.55
cis-1,2-Dichloroethene	< 0.60	< 0.60
cis-1,3-Dichloropropene	< 0.69	< 0.69
Cyclohexane	< 0.52	< 0.52
Dibromochloromethane	< 1.3	< 1.3
Ethanol	ND	ND
Ethyl Acetate	< 0.92	< 0.92
Ethylbenzene	< 0.66	< 0.66
Freon 11 (Trichlorofluoromethane)	1.7 JDV	0.91 JDV
Freon 114 (1,2-Dichlorotetrafluoroethane)	< 1.1	< 1.1
Heptane	< 0.62	< 0.62
Hexachloro-1,3-Butadiene	< 1.6	< 1.6
Hexane	< 0.54	< 0.54
Isopropyl Alcohol	< 0.37	< 0.37
m&p-Xylene	< 1.3	< 1.3
Methyl Butyl Ketone	< 1.2	< 1.2
Methyl Ethyl Ketone	< 0.90	< 0.90
Methyl Isobutyl Ketone	< 1.2	< 1.2
Methyl tert-Butyl Ether	< 0.55	< 0.55
Methylene Chloride	< 0.53	< 0.53
o-Xylene	< 0.66	< 0.66
Propylene	< 0.26	< 0.26
Styrene	< 0.65	< 0.65
tert-Butyl Alcohol	ND	ND
Tetrachloroethylene	< 1.0	< 1.0
Tetrahydrofuran	< 0.45	< 0.45
Toluene	0.50 J	< 0.57
trans-1,2-Dichloroethene	< 0.60	< 0.60
trans-1,3-Dichloropropene	< 0.69	< 0.69
Vinyl Acetate	< 0.54	< 0.54
Vinyl Bromide	< 0.67	< 0.67
Vinyl Chloride	< 0.10	< 0.10

NOTES:

Indoor air sample locations are illustrated in Figure 1.
< The parameter is not detected at the laboratory detection limit shown.
ND Not detected in tentatively identified compounds.

LABORATORY/DATA VALIDATION QUALIFIERS:

J Analyte detected at or below quantitation limits.
JN Non-routine analyte. Quantitation estimated.
JDV Value is estimated as a result of Data Validation.

Table 4. Summary of Indoor Air Results for Volatile Organic Compounds Found at Concentrations Above Typical Indoor Air Levels at the Southside High School

[All concentrations are reported in units of micrograms per cubic meter, mcg/m^3]

	LOCATION	Chloroform	Freon 12 (Dichlorodifluoromethane)	Freon 113 (Trichlorotrifluoroethane)	1,1-Dichloroethene	Trichloroethene
Southside High School	Gymnasium	28	4.2	16	< 0.60	0.2
	Pool Filter Room	55	27 JDV	97 JDV	1.1	1.4 JDV
	Duplicate of Pool Filter Room	65	3.3 JDV	66 JDV	< 0.60	1.0 JDV
	Room 151A	1.8	25	9.0	1.0	0.4
	Room 127	0.9	12	4.8	0.7	2.4
	Room 138	4.2	6.0 J	6.6	0.60	0.3
	Cafeteria	0.7 J	25	7.2	1.0	0.3
	Library	0.9	9.6	7.3	1.0	0.5
Typical Indoor Air Levels	NYS DOH Fuel Oil Study Database*					
	25th – 75th percentile	< 0.25 – 0.5	< 0.25 – 4.1	< 0.25 – 1.1	< 0.25 – < 0.25	< 0.25 - < 0.25
	95th percentile	4.6	26	3.4	0.7	0.8
	US EPA BASE Database**					
	25th – 75th percentile	< 0.4 - < 1.2	4.8 – 10.5	< 1.7 - < 3.0	< 0.9 - < 1.2	< 1.2 – 1.2
	95th percentile	1.4	32.9	9.4	< 1.4	6.5

*The New York State Department of Health (NYS DOH) database is a summary of indoor and outdoor air results from samples collected from control homes in New York State that heat with fuel oil. The NYS DOH conducted this study between 1997 and 2003.

**The United State Environmental Protection Agency (US EPA) database is a summary of indoor and outdoor air results from samples collected from 100 randomly selected public and commercial office buildings across the United States. The US EPA conducted this study from 1994 through 1996.

NOTES:

< = The parameter is not detected at the laboratory detection limit shown.

J = Analyte detected at or below quantitation limits.

JDV = Value is estimated as a result of Data Validation.

Additional information about the levels of volatile organic compounds that are often found in residential and non-residential buildings is available on the NYS DOH's website at http://www.nyhealth.gov/environmental/investigations/soil_gas/svi_guidance/ — in Section 3.2.4 of the first bulleted item titled "Guidance for Evaluating Soil Vapor Intrusion in New York State", as well as in the fourth bulleted item titled "Appendix C - Background VOCs."

Table 5. Public Health Comparison Values for Volatile Organic Compounds Found at Concentrations Above Typical Indoor and/or Outdoor Air Levels at the Southside High School

[All concentrations are reported in units of micrograms per cubic meter, mcg/m^3]

Volatile Organic Compound	NYS Air Guideline	Public Health Comparison Values*			
		Cancer	Basis**	Noncancer	Basis**
Chloroform	--	167	Health Canada UR	240	US EPA Region 3 RfC
Freon 12 (Dichlorodifluoromethane)	--	--	--	3400	US EPA IRIS RfD
Freon 113 (Trichlorotrifluoroethane)	--	--	--	146,000	US EPA HEAST RfC
1,1-Dichloroethene	--	--	--	970	US EPA IRIS RfC
Trichloroethene	5[a]	3.4	NYS DOH UR[a]	49	NYS DOH CV[a]

* Noncancer and cancer comparison values assume a person inhales about 8 cubic meters of air per day, 180 days per year. The cancer comparison value is the air concentration that corresponds to an increased lifetime cancer risk of one-in-one million and is based on an exposure duration of 30 years of a 70 year lifetime.

** Health Canada UR: Health Canada Unit Risk

US EPA Region 3 RfC: United States Environmental Protection Agency Region 3 Reference Concentration

US EPA IRIS RfD: United States Environmental Protection Agency Integrated Risk Information System Reference Dose. The reference dose was converted to an air concentration assuming a 70 kg person inhales 20 cubic meters of air per day.

US EPA HEAST RfC: United States Environmental Protection Agency Health Effect Assessment Summary Tables Reference Concentration.

US EPA IRIS RfC: United States Environmental Protection Agency Integrated Risk Information System Reference Concentration.

NYS DOH UR: New York State Unit Risk. The cancer comparison value for TCE is based on the highest of several estimates of cancer potency derived by the New York State Department of Health.

NYS DOH CV: New York State Department of Health Criteria Value for non-cancer endpoints.

[a] NYSDOH. 2006. *Final Report: Trichloroethene (TCE) Air Criteria Document*. Center for Environmental Health, Bureau of Toxic Substance Assessment. Troy, NY.

Table 6. Summary of Outdoor Air Results for Volatile Organic Compounds Found at Concentrations Above Typical Outdoor Air Levels at the Southside High School

[All concentrations are reported in units of micrograms per cubic meter, mcg/m^3]

	LOCATION	Freon 113 (Trichlorotrifluoroethane)	1,1-Dichloroethene
	Outdoor Air	6.3	0.81
	Duplicate Outdoor Air	5.5	0.73
Typical Outdoor Air Levels	NYS DOH Fuel Oil Study Database*		
	25th – 75th percentile	< 0.25 – 1.1	< 0.25 – < 0.25
	95th percentile	3.6	< 0.25
	US EPA BASE Database**		
	25th – 75th percentile	< 1.6 - < 2.0	< 1.0 - < 1.2
	95th percentile	1.8	< 1.4

*The New York State Department of Health (NYS DOH) database is a summary of indoor and outdoor air results from samples collected from control homes that heat with fuel oil. The NYS DOH conducted this study between 1997 and 2003.

**The United State Environmental Protection Agency (US EPA) database is a summary of indoor and outdoor air results from samples collected from 100 randomly selected public and commercial office buildings across the United States. The US EPA conducted this study from 1994 through 1996.

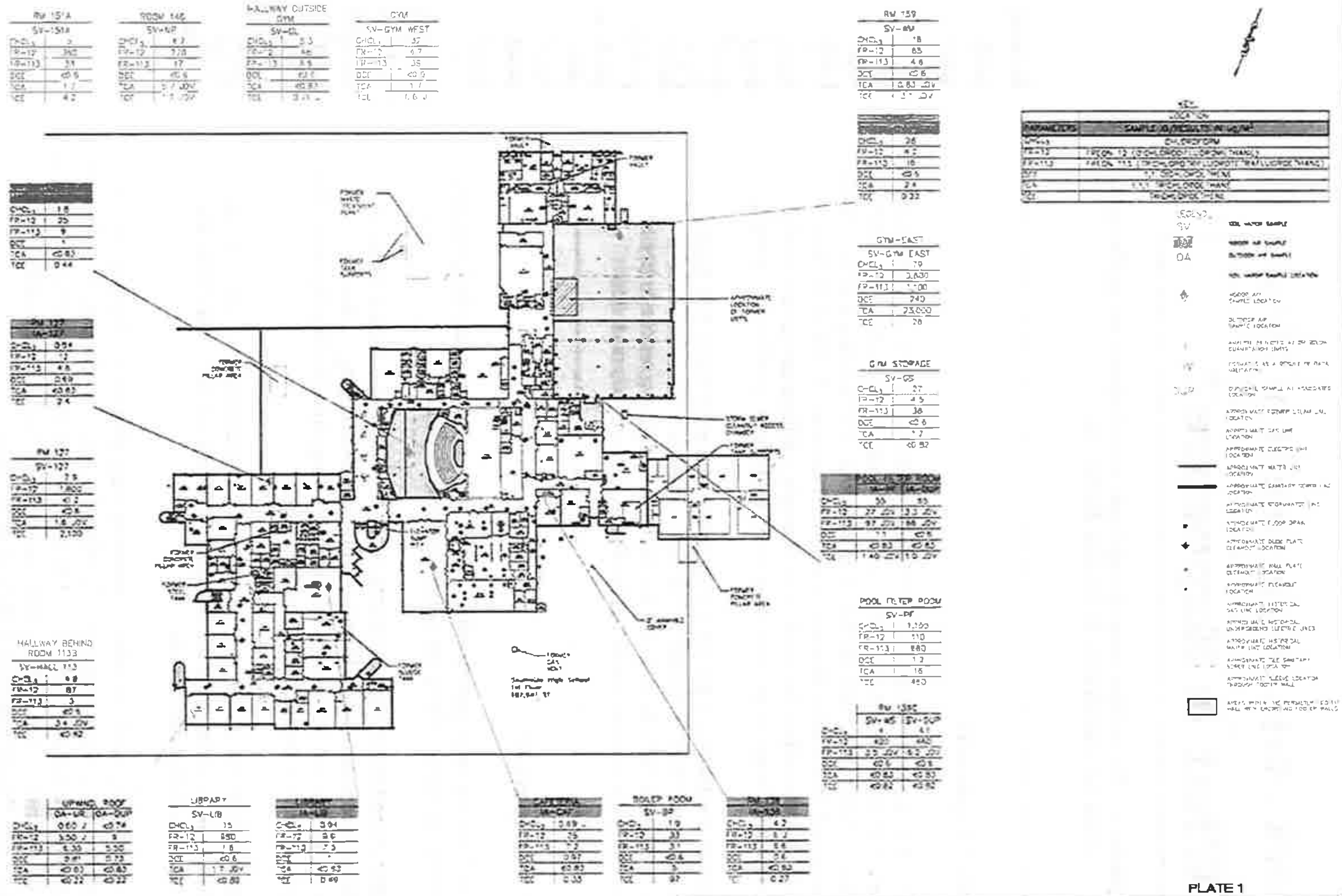
<u>NOTES</u>:

< = The parameter is not detected at the laboratory detection limit shown.

J = Analyte detected at or below quantitation limits.

JDV = Value is estimated as a result of Data Validation.

Additional information about the levels of volatile organic compounds that are often found in residential and non-residential buildings is available on the NYS DOH's website at http://www.nyhealth.gov/environmental/investigations/soil_gas/svi_guidance/ — in Section 3.2.4 of the first bulleted item titled "Guidance for Evaluating Soil Vapor Intrusion in New York State", as well as in the fourth bulleted item titled "Appendix C – Background VOCs."



KEY

LOCATION

PARAMETERS	SAMPLE ID/RESULTS IN ug/m3
CHCl3	CHLOROFORM
FR-12	FREON 12 (DICHLORODIFLUOROMETHANE)
FR-113	FREON 113 (TRICHLOROTRIFLUOROETHANE)
DCE	1,1-DICHLOROETHENE
TCA	1,1,1-TRICHLOROETHANE
TCE	TRICHLOROETHENE

MAP REFERENCE

BASE MAP PROVIDED BY QUE CENTER ENTITLED SOUTHSIDE HIGH SCHOOL 1ST FLOOR DATED 1/06

UTILITY LINES BASED ON MAPS PROVIDED BY FAMMINGH LOWEY ASSOCIATES INC ENTITLED
FLOOR PLAN UNIT "A" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78
FLOOR PLAN UNIT "B" PLUMBING DATED 10-7-77
FLOOR PLAN UNIT "C" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78
FLOOR PLAN UNIT "D" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78
FLOOR PLAN UNIT "E" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78
FLOOR PLAN UNIT "F" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78
FLOOR PLAN UNIT "G" PLUMBING DATED 10-7-77 LAST REVISED 4-12-78

PLATE 1

SUB-SLAB VAPOR, INDOOR AND OUTDOOR AIR
SELECT SAMPLE RESULTS – DECEMBER 2009
ELMIRA CITY SCHOOL DISTRICT
SOUTHSIDE HIGH SCHOOL 777 SOUTH MAIN STREET
CITY OF ELMIRA CHEMUNG CO., N.Y.

STERLING
Sterling Environmental Engineering, P.C.

New York State Department of Health

What is Exposure?

Information Sheet

Exposure is contact. No matter how dangerous a substance or activity, without exposure, it cannot harm you.

Amount of exposure:

Over 400 years ago, a scientist said "...nothing [is] without poisonous qualities. It is only the dose that makes a thing poison." The **dose** is the amount of a substance that enters or contacts a person. An important factor to consider in evaluating a dose is body weight. If a child is exposed to the same amount of chemical as an adult, the child (who weighs less) can be affected more than the adult. For example, children are given smaller amounts of aspirin than adults because an adult dose is too large for a child's body weight.

The greater the amount of a substance a person is exposed to, the more likely that health effects will occur. Large amounts of a relatively harmless substance can be toxic. For example, two aspirin tablets can help to relieve a headache, but taking an entire bottle of aspirin can cause stomach pain, nausea, vomiting, headache, convulsions or death.

Routes of exposure:

There are three major means by which a toxic substance can come into contact with or enter the body. These are called routes of exposure.

Inhalation (breathing) of gases, vapors, dusts or mists is a common route of exposure. Chemicals can enter and irritate the nose, air passages and lungs. They can become deposited in the airways or be absorbed through the lungs into the bloodstream. The blood can then carry these substances to the rest of the body.

Direct contact (touching) with the skin or eyes is also a route of exposure. Some substances are absorbed through the skin and enter the bloodstream. Broken, cut or cracked skin will allow substances to enter the body more easily.

Ingestion (swallowing) of food, drink, or other substances is another route of exposure. Chemicals that get in or on food, cigarettes, utensils or hands can be swallowed. Children are at greater risk of ingesting substances found in dust or soil because they often put their fingers or other objects in their mouths. Lead in paint chips is a good example. Substances can be absorbed into the blood and then transported to the rest of the body.
The route of exposure can determine whether or not the toxic substance has an effect. For example, breathing or swallowing lead can result in health effects, but touching lead is not usually harmful because lead is not absorbed particularly well through the skin.

Length of exposure:

Short-term exposure is called **acute exposure**. Long-term exposure is called **chronic exposure.** Either may cause health effects that are immediate or health effects that occur days or years later.

Acute exposure is a short contact with a chemical. It may last a few seconds or a few hours. For example, it might take a few minutes to clean windows with ammonia, use nail polish remover or spray a can of paint. The fumes someone might inhale during these activities are examples of acute exposures.

Chronic exposure is continuous or repeated contact with a toxic substance over a long period of time (months or years). If a chemical is used every day on the job, the exposure would be chronic. Over time, some chemicals, such as PCBs and lead, can build up in the body and cause long-term health effects.

Chronic exposures can also occur at home. Some chemicals in household furniture, carpeting or cleaners can be sources of chronic exposure.

Sensitivity:

All people are not equally **sensitive** to chemicals, and are not affected by them in the same way. There are many reasons for this.

- People's bodies vary in their ability to absorb and break down or eliminate certain chemicals due to **genetic differences.**
- People may become **allergic** to a chemical after being exposed. Then they may react to very low levels of the chemical and have different or more serious health effects than nonallergic people exposed to the same amount. People who are allergic to bee venom, for example, have a more serious reaction to a bee sting than people who are not.
- Factors such as **age, illness, diet, alcohol use, pregnancy and medical or nonmedical drug use** can also affect a person's sensitivity to a chemical. Young children are often more sensitive to chemicals for a number of reasons. Their bodies are still developing and they cannot get rid of some chemicals as well as adults. Also, children absorb greater amounts of some chemicals (such as lead) into their blood than adults.

For more information:

New York State Department of Health
Center for Environmental Health
Flanigan Square
547 River Street, Room 316
Troy, NY 12180-2218
1-800-458-1158 (ext. 2-7530)

March 2001

NEW YORK STATE
DEPARTMENT OF HEALTH

SOIL VAPOR INTRUSION

Frequently Asked Questions

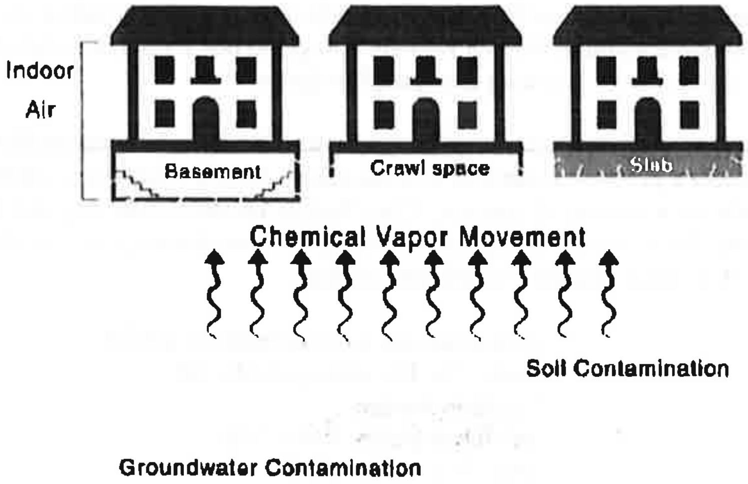
What is soil vapor intrusion?

The phrase "soil vapor intrusion" refers to the process by which volatile chemicals move from a subsurface source into the indoor air of overlying buildings.

Soil vapor, or soil gas, is the air found in the pore spaces between soil particles. Because of a difference in pressure, soil vapor enters buildings through cracks in slabs or basement floors and walls, and through openings around sump pumps or where pipes and electrical wires go through the foundation. Heating, ventilation or air-conditioning systems may create a negative pressure that can draw soil vapor into the building. This intrusion is similar to how radon gas seeps into buildings.

Soil vapor can become contaminated when chemicals evaporate from subsurface sources and enter the soil vapor. Chemicals that readily evaporate are called "volatile chemicals." Volatile chemicals include volatile organic compounds (VOCs). Subsurface sources of volatile chemicals may include contaminated soil and groundwater, or buried wastes. If soil vapor is contaminated, and enters a building as described above, indoor air quality may be affected.

When contaminated vapors are present in the zone directly next to or under the foundation of the building, vapor intrusion is possible. Soil vapor can enter a building whether it is old or new, or whether it has a basement, a crawl space, or is on a slab (as illustrated in the figure).



[Source: United States Environmental Protection Agency, Region 3]

How am I exposed to chemicals through soil vapor intrusion?

Humans can be exposed to soil vapor contaminated with volatile chemicals when vapors from beneath a building are drawn through cracks and openings in the foundation and mix with the indoor air. Inhalation is the route of exposure, or the manner in which the volatile chemicals actually enter the body, once in the indoor air.

Current exposures are when vapor intrusion is documented in an occupied building. *Potential* exposures are when volatile chemicals are present, or are accumulating, in the vapor phase beneath a building, but have not affected indoor air quality. Potential exposures also exist when there is a chance that contaminated soil vapors may move to existing buildings not currently affected or when there is a chance that new buildings can be built over existing subsurface vapor contamination. Both current and potential exposures are considered when evaluating soil vapor intrusion at a site that has documented subsurface sources of volatile chemicals.

In general, exposure to a volatile chemical does not necessarily mean that health effects will occur. Whether or not a person experiences health effects depends on several factors, including inhalation exposure, the length of exposure (short-term or acute versus long-term or chronic), the frequency of exposure, the toxicity of the volatile chemical, and the individual's sensitivity to the chemical.

What types of chemicals associated with environmental contamination may be entering my home via soil vapor intrusion?

Volatile organic compounds, or VOCs, are the most likely group of chemicals found in soil vapor, and which can move through the soil and enter buildings. Solvents used for dry cleaning, degreasing and other industrial purposes (e.g., tetrachloroethene, trichloroethene, 1,1,1-trichloroethane and Freon 113) are examples of VOCs. Examples of petroleum-related VOCs from petroleum spills are benzene, toluene, ethyl benzene, xylenes, styrene, hexane and trimethylbenzenes.

Is contaminated soil vapor the only source of volatile chemicals in my indoor air?

No. Volatile chemicals are also found in many household products. Paints, paint strippers and thinners, mineral spirits, glues, solvents, cigarette smoke, aerosol sprays, mothballs, air fresheners, new carpeting or furniture, hobby supplies, lubricants, stored fuels, refrigerants and recently dry-cleaned clothing all contain VOCs. Household products are often more of a source of VOCs in indoor air in homes than contaminated soil vapor.

Indoor air may also become affected when outdoor air containing volatile chemicals enters your home. Volatile chemicals are present in outdoor air due to their widespread use. Gasoline stations, dry cleaners, and other commercial/industrial facilities are important sources of VOCs to outdoor air.

What should I expect if soil vapor intrusion is a concern near my home?

If you live near a site that has documented soil, groundwater and/or soil vapor contaminated with volatile chemicals, you should expect that the potential for vapor intrusion is being, or has been, investigated. You may be contacted by the site owner or others working on the cleanup with information about the project. Your cooperation and consent would be requested before any testing/sampling would be done on your property. You may ask the person contacting you any questions about the work being done. You can also contact the NYSDOH's project manager for the site at 1-800-458-1158 (extension 2-7850) for additional information.

How is soil vapor intrusion investigated at sites contaminated with volatile chemicals?

The process of investigating soil vapor intrusion typically requires more than one set of samples to determine the extent of vapor contamination. Furthermore, four types of environmental samples are collected: soil vapor samples, sub-slab vapor samples, indoor air samples and outdoor air (sometimes referred to as "ambient air") samples.

Soil vapor samples are collected to characterize the nature and extent of vapor contamination in the soil in a given area. They are often collected before sub-slab vapor and/or indoor air samples to help identify buildings or groups of buildings that need to be sampled. Soil vapor samples are used to determine the *potential* for human exposures. *Soil vapor* samples are not the same as *soil* samples.

Sub-slab vapor samples are collected to characterize the nature and extent of vapor contamination in the soil immediately beneath a building with basement foundations or a slab. Sub-slab vapor results are used to determine the potential for *current* and *future* human exposures. For example, an exposure could occur in the future if cracks develop in the building's foundation or changes in the operation of the building's heating, ventilation or air-conditioning system are made that make the movement of contaminated soil vapor into the building possible.

Indoor air samples are collected to characterize the nature and extent of air contamination within a building. Indoor air sample results help to evaluate whether there are *current* human exposures. They are also compared to sub-slab vapor and outdoor air results to help determine where volatile chemicals may be coming from (indoor sources, outdoor sources, and/or beneath the building).

Outdoor air samples are collected to characterize site-specific background air conditions. Outdoor air results are used to evaluate the extent to which outdoor sources, such as automobiles, lawn mowers, oil storage tanks, gasoline stations, commercial/industrial facilities, and so forth, may be affecting indoor air quality.

What should I expect if indoor air samples are collected in my home?

You should expect the following:

- Indoor air samples are generally collected from the lowest-level space in a building, typically a basement, during the heating season. Indoor air samples may also be collected from the first floor of living space. Indoor air is believed to represent the greatest exposure potential with respect to soil vapor intrusion.
- Sub-slab vapor and outdoor air samples are usually collected at the same time as indoor air samples to help determine where volatile chemicals may be coming from (indoor sources, outdoor sources, and/or beneath the building).
- More limited sampling may be performed outside of the heating season. For example, sub-slab vapor samples without indoor air or outdoor air samples may be collected to identify buildings and areas where comprehensive sampling is needed during the heating season.
- An indoor air quality questionnaire and building inventory will be completed. The questionnaire includes a summary of the building's construction characteristics; the building's heating, ventilation and air-conditioning system operations; and potential indoor and outdoor sources of volatile chemicals. The building inventory describes products present in the building that might contain volatile chemicals. In addition, we take monitoring readings from a real-time organic vapor meter (also known as a photoionization detector or PID). The PID is an instrument that detects many VOCs in the air. When indoor air samples are collected, the PID is used to help determine whether

products containing VOCs might be contributing to levels that are detected in the indoor air.

What happens if soil vapor contamination or soil vapor intrusion is identified during investigation of a site?

Depending on the investigation results, additional sampling, monitoring or mitigation actions may be recommended. Additional sampling may be performed to determine the extent of soil vapor contamination and to verify questionable results. Monitoring (sampling on a recurring basis) is typically conducted if there is a significant potential for vapor intrusion to occur should building conditions change. Mitigation steps are taken to minimize exposures associated with soil vapor intrusion. Mitigation may include sealing cracks in the building's foundation, adjusting the building's heating, ventilation and air-conditioning system to maintain a positive pressure to prevent infiltration of subsurface vapors, or installing a sub-slab depressurization system beneath the building.

What is a sub-slab depressurization system?

A sub-slab depressurization system, much like a radon mitigation system, essentially prevents vapors beneath a slab from entering a building. A low amount of suction is applied below the foundation of the building and the vapors are vented to the outside (see illustration). The system uses minimal electricity and should not noticeably affect heating and cooling efficiency. This mitigation system also essentially prevents radon from entering a building, an added health benefit. The party responsible for cleaning up the source of the soil vapor contamination is usually responsible for paying for the installation of this system. If no responsible party is available, New York State will install the system. Once the contamination is cleaned up, the system should no longer be needed. In areas where radon is a problem, the NYSDOH recommends that these systems remain in place permanently.

What else can I do to improve my indoor air quality?

Household products and other factors, such as mold growth, carbon monoxide, and radon, can degrade the quality of air in your home. Consider the following tips to improve indoor air quality:

- Be aware of household products that contain VOCs. Do not buy more chemicals than you need at a time.
- Store unused chemicals in tightly-sealed containers in a well-ventilated location, preferably away from the living space in your home.
- Keep your home properly ventilated. Keeping it too air-tight may promote build up of chemicals in the air, as well as mold growth due to the build up of moisture.
- Fix all leaks promptly, as well as other moisture problems that encourage mold growth.
- Make sure your heating system, hot water, dryer and fireplaces are properly vented and in good condition. Have your furnace or boiler checked annually by a professional.
- Test your home for radon; take actions to reduce radon levels if needed.
- Install carbon monoxide detectors in your home; take immediate actions to reduce carbon monoxide levels if needed.

Where can I get more information?

For additional information about soil vapor intrusion, contact the NYSDOH's Bureau of Environmental Exposure Investigation at 1-800-458-1158 (extension 2-7850).

NEW YORK STATE
DEPARTMENT OF HEALTH

Trichloroethene (TCE) in Indoor and Outdoor Air

FACT SHEET
February 2005

What is trichloroethene?

Trichloroethene is a manufactured, volatile organic chemical. It has been used as a solvent to remove grease from metal. Trichloroethene has also been used as a paint stripper, adhesive solvent, as an ingredient in paints and varnishes, and in the manufacture of other organic chemicals. Other names for trichloroethene include TCE and trichloroethylene. TCE is a common name for trichloroethene and will be used for the rest of this fact sheet.

TCE is a clear, colorless liquid, and has a somewhat sweet odor. It is non-flammable at room temperature and will evaporate into the air.

How can I be exposed to TCE?

People can be exposed to TCE in air, water and food. Exposure can also occur when TCE, or material containing TCE, gets on the skin.

TCE gets into the air by evaporation when it is used. TCE can also enter air and groundwater if it is improperly disposed or leaks into the ground. People can be exposed to TCE if they drink groundwater contaminated with TCE, and if the TCE evaporates from the contaminated drinking water into indoor air during cooking and washing. They may also be exposed if TCE evaporates from the groundwater, enters soil vapor (air spaces between soil particles), and migrates through building foundations into the building's indoor air. This process is called "soil vapor intrusion."

How can TCE enter and leave my body?

If people breathe air containing TCE, some of the TCE is exhaled unchanged from the lungs and back into the air. Much of the TCE gets taken into the body through the lungs and is passed into the blood, which carries it to other parts of the body. The liver changes most of the TCE taken into the blood into other compounds, called breakdown products, which are excreted in the urine in a day or so. However, some of the TCE and its breakdown products can be stored in the fat or the liver, and it may take a few weeks for them to leave the body after exposure stops.

What kinds of health effects are caused by exposure to TCE in air?

In humans, long term exposure to workplace air containing high levels of TCE (generally greater than about 40,000 micrograms of TCE per cubic meter of air (mcg TCE/m^3)) is linked to effects on the central nervous system (reduced scores on tests evaluating motor coordination, nausea, headaches, dizziness) and irritation of the mucous membranes. Exposure to higher levels (generally greater than 300,000 mcg TCE/m^3) for short periods of time can irritate the eyes and respiratory tract, and can cause effects on the central nervous system, including dizziness, headache, sleepiness, nausea, confusion, blurred vision and fatigue. In laboratory animals, exposure to high levels of TCE has damaged the central nervous system, liver and kidneys, and adversely affected reproduction and development of offspring. Lifetime exposure to high levels of TCE has caused cancer in laboratory animals.

Some studies of people exposed for long periods of time to high levels of TCE in workplace air, or elevated levels of TCE in drinking water, show an association between exposure to TCE and increased risks for certain types of cancer, including cancers of the kidney, liver and esophagus, and non-Hodgkin's lymphoma. One study showed an association between elevated levels of TCE in drinking water and effects on fetal development. Other studies suggest an association between workplace TCE exposure and reproductive effects (alterations in sperm counts) in men. We do not know if the effects observed in these studies are due to TCE or some other possible factor (for example, exposure to other chemicals, smoking, alcohol consumption, socioeconomic status, lifestyle choices). Because all of these studies have limitations, they only suggest, but do not prove, that exposure to TCE can cause cancer in humans and can cause developmental and reproductive effects as well.

What are background levels of TCE for indoor and outdoor air?

The exact meaning of background depends on how a study selected sampling locations and conditions. Generally, sampling locations are selected to be not near known sources of volatile chemicals (for example, a home not near a chemical spill, a hazardous waste site, a dry cleaner, or a factory). In some studies, the criteria for sampling indoor air may require checking containers of volatile chemicals to make sure they are tightly closed or removing those products before samples are taken. The New York State Department of Health (NYSDOH) has used several sources of information on background levels of TCE in indoor and outdoor air. One NYSDOH study of residences heated by fuel oil found that background concentrations of TCE in indoor and outdoor air are less than 1 mcg/m^3 in most cases. In this study, most homes did not have obvious sources of volatile organic compounds (VOCs). In those homes with VOC sources, samples were taken and the data are included in the study.

What are sources of TCE in air in homes?

TCE is found in some household products, such as glues, adhesives, paint removers, spot removers, rug cleaning fluids, paints, metal cleaners and typewriter correction fluid. These and other products could be potential sources for TCE in indoor air.

Another source of TCE in indoor air is contaminated groundwater that is used for household purposes. Common use of water, such as washing dishes or clothing, showering, or bathing, can introduce TCE into indoor air through volatilization from the water.

TCE may also enter homes through vapor intrusion as described on page 1 in the question "How can I be exposed to TCE?".

What is the level of TCE that people can smell in the air?

The reported odor threshold (the air concentration at which a chemical can be smelled) for TCE in air is about 540,000 mcg TCE/m^3. At this level, most people would likely be able to start smelling TCE in air. However, odor thresholds vary from person to person. Some people may be able to detect TCE at levels lower than the reported odor threshold and some people may only detect it at concentrations higher than the reported odor threshold.

If I can't smell TCE in the air, am I being exposed?

Just because you can't smell TCE doesn't mean there is no exposure. Sampling and testing is the best way to know if TCE is present.

What is the NYSDOH's guideline for TCE in air?

After a review of the toxicological literature on TCE, the NYSDOH set a guideline of 5 mcg/m^3 for TCE in air. This level is lower than the levels that have caused health effects in animals and humans. In setting this level, the NYSDOH also considered the possibility that certain members of the population (infants, children, the elderly, and those with pre-existing health conditions) may be especially sensitive to the effects of TCE.

The guideline is not a bright line between air levels that cause health effects and those that do not. The purpose of the guideline is to help guide decisions about the nature of the efforts to reduce TCE exposure. Reasonable and practical actions should be taken to reduce TCE exposure when indoor air levels are above background, even when they are below the guideline of 5 mcg/m^3. The urgency to take actions increases as indoor air levels increase, especially when air levels are above the guideline. In all cases, the specific corrective actions to be taken depend on a case-by-case evaluation of the situation. The goal of the recommended actions is to reduce TCE levels in indoor air to as close to background as practical.

Should I be concerned about health effects if I am exposed to air levels slightly above the guideline? Below the guideline?

The possibility of health effects occurring is low even at air levels slightly above the guideline. In addition, the guideline is based on the assumption that people are continuously exposed to TCE in air all day, every day for as long as a lifetime. This is rarely true for most people who are likely to be exposed for only part of the day and part of their lifetime.

How can I limit my exposure to TCE?

TCE can get into indoor air through household sources (for example, commercial products that contain TCE), from contaminated drinking water, or by vapor intrusion. As with any indoor air contaminant, removing household sources of TCE will help reduce indoor air levels of the chemical. Maintaining adequate ventilation will also help reduce the indoor air levels of TCE. If TCE is in the indoor air as a result of vapor intrusion, a sub-slab depressurization system, much like a radon mitigation system, will reduce exposures by minimizing the movement of vapors that are beneath a slab into a building. If TCE is in the water supply of a house, a carbon filter on the water supply to remove the TCE will minimize ingestion and inhalation exposures.

Is there a medical test that can tell me whether I have been exposed to TCE?

TCE can be measured in people's breath soon after they are exposed. TCE and some of its breakdown products can be measured in the urine and blood. These tests are not routinely available at a doctor's office. Urine and blood tests can indicate that you may have recently (within the last few days) been exposed to a large amount of the chemical. However, they cannot tell you the source of the exposure. Some of the breakdown products of TCE can also be formed from other chemicals.

When should my children or I see a physician?

If you believe you or your children have symptoms that you think are caused by TCE exposure, you or your children should see a physician. You should tell the physician about the symptoms and about when, how and for how long you think you and/or your children were exposed to TCE.

What is the NYSDOH doing to educate physicians about TCE?

The NYSDOH maintains an Infoline (1-800-458-1158) that physicians or the public can call when they have questions related to various types of chemical exposures. A certified occupational and environmental health nurse is available to triage physicians' questions and to direct their inquiries to the appropriate staff member.

The NYSDOH also works closely with the federal Agency for Toxic Substances and Disease Registry (ATSDR), making their educational materials available to physicians upon request. One of these items is an environmental medicine case study entitled "Trichloroethylene (TCE) Toxicity," which provides the opportunity for physicians to earn continuing medical education credits from the Centers for Disease Control and Prevention. Physicians who would like to complete this training are encouraged to contact the NYSDOH for more information. A printed copy can be mailed to the physician or it can be accessed on-line at the following web site http://www.atsdr.cdc.gov/HEC/CSEM/tce/index.html.

Where can I get more information?

If you have any questions about the information in this fact sheet or would like to know more about TCE, please call the NYSDOH at 1-800-458-1158 or write to the following address:

New York State Department of Health
Bureau of Toxic Substance Assessment
Flanigan Square, 547 River Street
Troy, NY 12180-2216

ATTACHMENT 3

QUARTERLY SUB-SLAB MONITORING RESULTS
AND
DAILY FIELD REPORTS

1ST QUARTER SUB-SLAB MONITORING RESULTS

STERLING
Sterling Environmental Engineering, P.C.

May 18, 2017

Mr. Michael Dunn
Elmira City School District
Building and Grounds Department
733 Benjamin Street
Elmira, New York 14901

Subject: Elmira City School District – Elmira High School
2017 1st Quarter Sub-Slab Pressure Monitoring Event
STERLING File #28014 (Task 601)

Dear Mr. Dunn,

Sterling Environmental Engineering, P.C. (STERLING) conducted the 2017 1st quarter sub-slab pressure monitoring event and inspected the integrity of the vapor barriers on February 21, 2017, in accordance with the June 2009 Environmental Management Plan (EMP) for the Elmira High School (EHS). A Daily Field Report (DFR) for this event is attached. This letter report presents the results of the monitoring.

SUB-SLAB VAPOR PRESSURE SURVEY

The differential pressure between the sub-slab air and the indoor air was monitored at various locations at EHS. Different areas of the school building are designated as the Main Building, the Science Addition (K-Wing), the Gymnasium (Gym), Room 127 (including the F-Wing) and the Cafeteria (including the Cafeteria Addition and Cafeteria Renovation). The differential pressure between the sub-slab air and the indoor air was measured by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602, to the floor ports and/or the tubing connected to the magnehelic gauges and obtaining three (3) 32-second average pressure readings. The manometer was configured so a negative measurement indicates the indoor pressure is greater than the outdoor/sub-slab pressure (i.e., an outward pressure gradient).

The EHS was unoccupied during the monitoring event. The Heating, Ventilation, and Air Conditioning (HVAC) system was set to typical operational mode. The Main Building and Science Addition rely on the HVAC system to provide a continuous supply of outdoor makeup air. The American Society of Testing Materials (ASTM) 1456 design standard and New York State Department of Environmental Conservation (NYSDEC) approved objective is the maintenance of a minimum pressure differential between indoor and outdoor/sub-slab air of 0.020 inch water column (inWC).

Science Addition, Gym and the Main Building Locations

The pressure differential between the sub-slab air and the indoor air was measured at five (5) locations in the Science Addition (K-Wing), four (4) locations in the Gym and ten (10) locations in the Main Building. The Science Addition and Gym have continuously operating sub-slab depressurization systems (SSDSs) designed to produce negative sub-slab pressure relative to indoor air pressure (i.e., an outward pressure gradient). Three (3) sub-slab pressure measurements were recorded at each port and/or magnehelic gauge. The measurements for the Science Addition, Gym and the Main Building are presented in Tables 1, 2 and 3, respectively.

Measured sub-slab vapor pressure ranged from -0.067 to -0.090 inWC in the Science Addition, -0.292 to -0.359 inWC in the Gym and 0.003 to -0.026 inWC in the Main Building.

All measured locations in the Science Addition and Gym satisfy the SSDS design objective of a pressure difference of 0.020 inWC between the indoor air and the sub-slab air. One of the ten (10) locations in the Main Building satisfy the SSDS design objective. The locations in the Main Building which do not satisfy the SSDS design objective were addressed in the 2016 Annual Certification Report as follows:

> *The EMP requires the HVAC system to be operational when the building is occupied and the HVAC system creates a positive indoor air pressure relative to the sub-slab in the Main Building, including sections that do not have a SSDS. The design of this recently upgraded HVAC system does not meet this requirement uniformly throughout the building footprint. Modifying the HVAC system will involve the contracted services of a qualified professional engineer in mechanical engineering, an HVAC control systems monitoring company and an HVAC balancing contractor. Meanwhile, Unisys and Geosyntec have filed an agency review draft ISMP which concludes all areas which are potential sources of vapor have been addressed by SSDSs. Therefore, the sub-slab areas with elevated contaminants requiring mitigation or monitoring, according to the matrices in the 2006 NYSDOH Guidance, are under negative pressure relative to indoor air. The ISMP concludes the requirement to maintain the indoor air in the entire building under positive pressure relative to the sub-slab outside of the influence of the installed SSDSs is unnecessary. The ISMP is under review by the NYSDEC and NYSDOH and these Departments will be rendering a decision on these conclusions. At the conclusion of the regulatory review an ISMP will be adopted and will replace the existing EMP.*

The Gym aqueous manometer appeared to be clogged with debris during the 1st quarter monitoring event conducted February 21, 2017 and was reading a 0.0 inWC pressure difference. EHS personnel were informed and repairs were made on February 27, 2017. Pressure readings returned to approximately 1.0 inWC, similar to prior readings obtained at this location.

Cafeteria (including the Cafeteria Addition and Cafeteria Renovation) Locations

Pressure differential readings were measured at six (6) locations in the Cafeteria. Three (3) pressure differential readings were measured at the magnehelic gauge locations and sub-slab locations (see Figure 1 and Table 4).

Measured sub-slab vapor pressures ranged from -0.892 to -2.24 inWC in the Cafeteria. All locations in the Cafeteria satisfy the SSDS design objective of a pressure difference of 0.020 inWC.

Two (2) of the four (4) magnehelic gauges (NW1 and NW2) were adversely affected by long-term exposure to the high vacuum and were continuously reading negative pressure greater than -0.250 inWC, despite turning the valve to disconnect the gauge from the sub-slab. The gauges were serviced on February 27, 2017 and resumed operating properly. The valve is kept closed to isolate the magnehelic gauges, except for when it is opened to record pressure readings. This procedure will prevent damage to the gauges.

Room 127 (including the F-Wing) Location

Three (3) pressure differential readings were measured at one (1) sub-slab port location (see Table 5). The measured pressure differential ranged from -0.048 to -0.049 inWC. The measured pressure differential satisfies the SSDS design objective of a pressure difference of 0.020 inWC.

OUTDOOR VS. INDOOR AIR PRESSURE DIFFERENCE FOR ROOM 127

The pressure differential between outdoor versus indoor air in Room 127 was measured in the Main Building on February 21, 2017. The average reading was -0.0306 inWC, indicating the indoor air pressure was greater than the outdoor air pressure (see Table 2). It should be noted that the pressure readings from the outdoor air verses the indoor air may be influenced by the weather conditions, specifically winds.

CONCLUSIONS ON PRESSURES

The pressure differentials measured in the Science Addition and Cafeteria continue to meet the NYSDEC minimum objective of -0.020 inWC. The outdoor versus indoor air pressure differential in Room 127 also continues to achieve the NYSDEC minimum objective of -0.020 inWC.

The sub-slab versus indoor air pressure in Room 127 met the NYSDEC minimum pressure differential objective of -0.020 inWC. These conditions were achieved in Room 127 with the installation of the relatively new SSDS in the F-Wing, including Room 127. The balance of the Main Building does not consistently meet the NYSDEC approved pressure differential objective; however, the areas of the Main Building where the pressure differential is not achieved are being addressed by the review of the ISMP by the NYSDEC and NYSDOH.

VAPOR BARRIER INSPECTIONS

The vapor barrier was inspected during the quarterly event. No locations of the barrier within the school building were penetrated and the concrete cover above the barrier was observed to be in good condition. Multiple locations on the cover outside of the building were penetrated for soil sampling associated with the investigation activities by Geosyntec Consultants. All locations were properly sealed.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

Rodney L. Aldrich

Rodney L. Aldrich, P.E.
Director of Compliance
rodney.aldrich@sterlingenvironmental.com

RLA/bc
Email/First Class Mail
Attachments

cc: Dominic Insogna, Elmira City School District Health and Safety (Email Only)
Aaron Alsheimer, Esq. (Email Only)

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DAILY FIELD REPORT (DFR)

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name: Elmira High School
Project No.: 28014
Client Name: Elmira City School District
Date: February 21, 2017
Location: 777 South Main Street, Elmira, NY
Inspector: Amanda Castignetti (AC) – Sterling Environmental Engineering, P.C.

Work Description, Comments, Discussion, Problems, Instructions:

9:45 A.M. Amanda Castignetti (AC) with Sterling Environmental Engineering, P.C. (STERLING) arrives onsite to perform the 1st Quarter Sub-Slab Monitoring of the Elmira High School (EHS). Telephone call with Dominic Insogna (DI) of EHS BOCES. HVAC system is not observed to be set to “occupied”. DI verifies with EHS personnel HVAC system will be set to “occupied”.

10:30 A.M. AC meets with DI.

10:45 A.M. HVAC system set to “occupied” and AC verifies the HVAC system will remain on “occupied” for entire event. AC inspects Manometers located in the Science Addition (K-Wing) and Magnahelic Gauges in K-Wing, Cafeteria and Gymnasium (Gym) and begins measuring sub-slab vapor pressure by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602 to the floor ports and/or magnehelic gauges and obtains three (3) 32 second average readings (see results provided in Table 1, “Quarterly Sub-Slab Pressure Monitoring). Aqueous manometer in the Gym is not reading a pressure difference (reading 0.0 inWC). DI will have the manometer repaired asap.

1:55 P.M. AC measures the outdoor air versus indoor air pressure differential and sub-slab pressure for Room 127. Interior temperature: 68.9°F, Barometric Pressure: 29.22 inHg

Reading	Pressure Differential Between Outdoor Air and Indoor Air (inWC) for Room 127(1)
1	-0.031
2	-0.031
3	-0.029
4	-0.031
5	-0.030
6	-0.032
7	-0.031
8	-0.032
9	-0.030
10	-0.029
Average =	**0.0306**

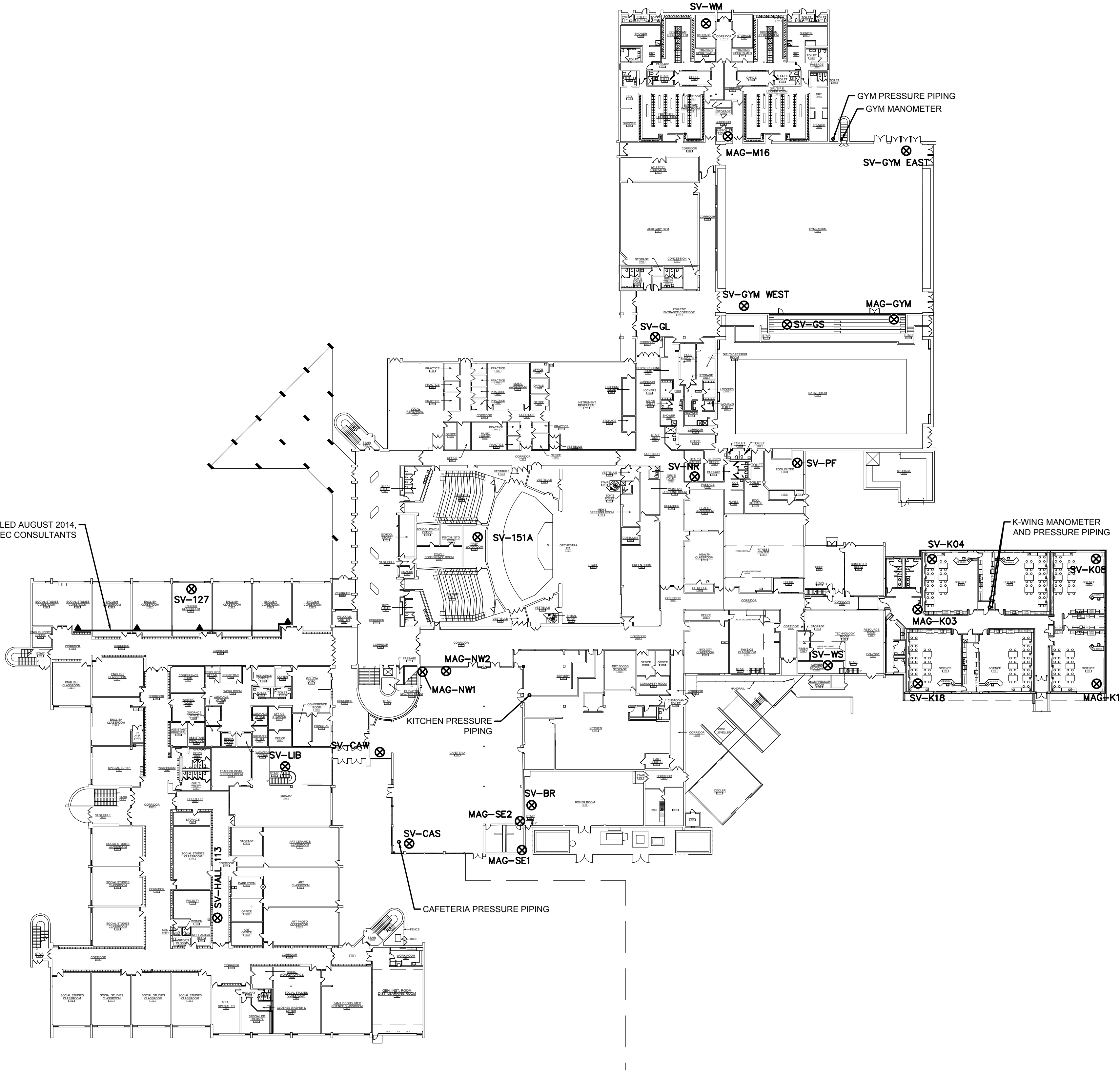
(1) A positive pressure differential reading indicates the indoor air pressure is less than the outdoor air pressure.

2:15 P.M. AC finishes with 1st quarter monitoring, packs up monitoring equipment and departs site. DI departs site.

Visitors (Name, Affiliation): Dominic Insogna, (EHS BOCES)

Signature:

FIGURE



LEGEND:

SV-K08 ⊗	SUB-SLAB SAMPLING LOCATIONS
▲—▲	SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLED BY GEOSYNTEC CONSULTANTS

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

SUB-SLAB
VAPOR PRESSURE PORTS
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.

CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.: 28014	DATE: 3/25/16	SCALE: N.T.S.	DWG. NO. 28014109	FIGURE 1

TABLES

TABLE 1

Quarterly Sub-Slab Pressure Monitoring
Science Addition (K-Wing)

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**February 21, 2017**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-K08	Science Addition	11:12am	60.8	29.21	-0.090	-0.089	-0.090
SV-K18	Science Addition	11:25am	69.2	29.20	-0.069	-0.068	-0.067
SV-K04	Science Addition	11:03am	63.6	29.22	-0.075	-0.073	-0.072
MAG-K10	Science Addition	11:17am	66.0	29.20	-0.072	-0.071	-0.072
MAG-K03	Science Addition	10:55am	68.5	29.22	-0.069	-0.071	-0.069

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

K-Wing (2/21/17)

Reading and Condition of Manometer:	0.3 inWC, good condition
Condition of Negative Pressure Piping:	Good
Mag-K10 (inWC):	-0.065
Mag-K03 (inWC):	-0.060

TABLE 2

Quarterly Sub-Slab Pressure Monitoring
Gym

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**February 21, 2017**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-GYM WEST	West Side of Gym	12:32pm	63.6	29.16	-0.304	-0.307	-0.307
SV-GYM EAST	East Side of Gym	12:17pm	69.4	29.17	-0.355	-0.353	-0.353
MAG-M16	Maintenance Room	12:00pm	62.5	29.17	-0.294	-0.295	-0.292
MAG-GYM	Gym Storage Room	12:22pm	69.6	29.16	-0.359	-0.359	-0.359

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Gym (2/21/17)

Reading and Condition of Manometer: 0.0 inWC, EHS personnel plans to ensure tubing is unclogged and no bends are observed.
Condition of Negative Pressure Piping: Good
Mag-M16 (inWC): >-0.250
Mag-GYM Storage (inWC): >-0.250

TABLE 3

Quarterly Sub-Slab Pressure Monitoring
Main Building

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **February 21, 2017**
Sampler: **Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-151A	Room 151A	1:01pm	69.0	29.16	0.000	0.001	0.000
SV-NR	Room 145 (Nurse's Office)	11:45am	62.3	29.18	-0.003	-0.000	0.002
SV-GL	Hallway Outside of Gym	12:55pm	66.0	29.15	-0.010	-0.010	-0.009
SV-WM	Room 159	12:08pm	61.7	29.17	-0.001	-0.000	-0.001
SV-GS	Gym Storage Room	12:26pm	69.1	29.16	-0.006	-0.006	-0.006
SV-PF	Pool Filter Room	11:55am	71.6	29.19	0.001	-0.000	-0.000
SV-WS	Room 139C	11:32am	61.2	29.19	0.000	0.001	0.000
SV-BR	Boiler Room	11:40am	55.9	29.19	-0.026	-0.025	-0.024
SV-LIB	Library	1:42pm	62.1	29.13	0.002	0.000	0.001
SV-HALL 113	Hallway Behind Room 113B	1:47pm	63.8	29.12	0.003	0.002	-0.002

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

TABLE 4

Quarterly Sub-Slab Pressure Monitoring
Cafeteria

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **February 21, 2017**
Sampler: **Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-CAW	Cafeteria West	1:25pm	69.8	29.13	-1.017	-0.963	-0.895
SV-CAS	Cafeteria South	1:30pm	68.8	29.13	-1.041	-1.044	-1.049
MAG-NW1	Cafeteria - North	1:08pm	66.7	29.19	-0.892	-0.894	-0.894
MAG-NW2	Cafeteria - North	1:11pm	66.8	29.19	-2.24	-2.24	-2.23
MAG-SE1	Cafeteria - South	1:15pm	65.7	29.19	-0.940	-0.948	-0.960
MAG-SE2	Cafeteria - South	1:20pm	65.2	29.19	-1.838	-1.840	-1.843

Notes: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.
*Magnahelic gauge does not 'zero' when system closed. EHS personnel serviced the magnehelic gauges on 2/27/17 and are operating as designed.

Cafeteria (2/21/17)

Mag-NW 1*	> -0.250
Mag-NW2*	> -0.250
Mag-SE1	> -0.250
Mag-SE2	> -0.250

Table 5

Room 127 Air Pressure Measurements

Elmira City School District

Elmira High School, Elmira, New York

Date	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential - Inches of Water Column (inWC)(1)			Indoor Air vs. Outdoor Air (in WC)
				Reading #1	Reading #2	Reading #3	Average Readings(2)
February 21, 2017	1:55 PM	68.9	29.22	-0.048	-0.049	-0.049	-0.0306

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates outdoor air pressure is greater than indoor air pressure.

2^{ND} QUARTER SUB-SLAB MONITORING RESULTS

STERLING
Sterling Environmental Engineering, P.C.

July 6, 2017

Mr. Michael Dunn
Elmira City School District
Building and Grounds Department
733 Benjamin Street
Elmira, New York 14901

Subject: Elmira City School District – Elmira High School
2017 2nd Quarter Sub-Slab Pressure Monitoring and Annual Outdoor Cover Inspection Event
STERLING File #28014 (Task 602)

Dear Mr. Dunn,

Sterling Environmental Engineering, P.C. (STERLING) conducted the 2017 2nd quarter sub-slab pressure monitoring event and inspected the integrity of the vapor barriers on April 9 and 10, 2017, in accordance with the June 2009 Environmental Management Plan (EMP) for the Elmira High School (EHS). A Daily Field Report (DFR) for this event is attached. This letter report presents the results of the monitoring.

SUB-SLAB VAPOR PRESSURE SURVEY

The differential pressure between the sub-slab air and the indoor air was monitored at various locations at EHS. Different areas of the school building are designated as the Main Building, the Science Addition (K-Wing), the Gymnasium (Gym), Room 127 (including the F-Wing) and the Cafeteria (including the Cafeteria Addition and Cafeteria Renovation). The differential pressure between the sub-slab air and the indoor air was measured by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602, to the floor ports and/or the tubing connected to the magnehelic gauges and obtaining three (3) 32-second average pressure readings. The manometer was configured so a negative measurement indicates the indoor pressure is greater than the outdoor/sub-slab pressure (i.e., an outward pressure gradient).

The EHS was unoccupied during the monitoring event. The Heating, Ventilation, and Air Conditioning (HVAC) system was set to typical operational mode. The Main Building and Science Addition rely on the HVAC system to provide a continuous supply of outdoor makeup air. The American Society of Testing Materials (ASTM) 1456 design standard and New York State Department of Environmental Conservation (NYSDEC) approved objective is the maintenance of a minimum pressure differential between indoor and outdoor/sub-slab air of 0.020 inch water column (inWC).

Science Addition, Gym and the Main Building Locations

The pressure differential between the sub-slab air and the indoor air was measured at five (5) locations in the Science Addition (K-Wing), four (4) locations in the Gym and ten (10) locations in the Main Building. The Science Addition and Gym have continuously operating sub-slab depressurization systems (SSDSs) designed to produce negative sub-slab pressure relative to indoor air pressure (i.e., an outward pressure gradient). Three (3) sub-slab pressure measurements were recorded at each port and/or

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magnehelic gauge. The measurements for the Science Addition, Gym and the Main Building are presented in Tables 1, 2 and 3, respectively.

Measured sub-slab vapor pressure ranged from -0.069 to -0.095 inWC in the Science Addition, -0.307 to -0.385 inWC in the Gym and 0.002 to -0.029 inWC in the Main Building.

All measured locations in the Science Addition and Gym satisfy the SSDS design objective of a pressure difference of 0.020 inWC between the indoor air and the sub-slab air. One (1) of the ten (10) locations in the Main Building satisfy the SSDS design objective. The locations in the Main Building which do not satisfy the SSDS design objective were addressed in the 2016 Annual Certification Report as follows:

> *The EMP requires the HVAC system to be operational when the building is occupied and the HVAC system creates a positive indoor air pressure relative to the sub-slab in the Main Building, including sections that do not have a SSDS. The design of this recently upgraded HVAC system does not meet this requirement uniformly throughout the building footprint. Modifying the HVAC system will involve the contracted services of a qualified professional engineer in mechanical engineering, an HVAC control systems monitoring company and an HVAC balancing contractor. Meanwhile, Unisys and Geosyntec have filed an agency review draft ISMP which concludes all areas which are potential sources of vapor have been addressed by SSDSs. Therefore, the sub-slab areas with elevated contaminants requiring mitigation or monitoring, according to the matrices in the 2006 NYSDOH Guidance, are under negative pressure relative to indoor air. The ISMP concludes the requirement to maintain the indoor air in the entire building under positive pressure relative to the sub-slab outside of the influence of the installed SSDSs is unnecessary. The ISMP is under review by the NYSDEC and NYSDOH and these Departments will be rendering a decision on these conclusions. At the conclusion of the regulatory review an ISMP will be adopted and will replace the existing EMP.*

The Gym aqueous manometer was observed to read approximately 1.0 inWC and was in good condition.

<u>Cafeteria (including the Cafeteria Addition and Cafeteria Renovation) Locations</u>

Pressure differential readings were measured at six (6) locations in the Cafeteria. Three (3) pressure differential readings were measured at the magnehelic gauge locations and sub-slab locations (see Figure 1 and Table 4).

Measured sub-slab vapor pressures ranged from -0.743 to -2.06 inWC in the Cafeteria. All locations in the Cafeteria satisfy the SSDS design objective of a pressure difference of 0.020 inWC.

<u>Room 127 (including the F-Wing) Location</u>

Three (3) pressure differential readings were measured at one (1) sub-slab port location (see Table 5). The measured pressure differential ranged from -0.057 to -0.058 inWC. The measured pressure differential satisfies the SSDS design objective of a pressure difference of 0.020 inWC.

OUTDOOR VS. INDOOR AIR PRESSURE DIFFERENCE FOR ROOM 127

The pressure differential between outdoor versus indoor air in Room 127 was measured in the Main Building on April 10, 2017. The average reading was -0.0501 inWC, indicating the indoor air pressure was greater than the outdoor air pressure (see Table 2). It should be noted that the pressure readings from the outdoor air verses the indoor air may be influenced by the weather conditions, specifically winds.

CONCLUSIONS ON PRESSURES

The pressure differentials measured in the Science Addition and Cafeteria continue to meet the NYSDEC minimum objective of -0.020 inWC. The outdoor versus indoor air pressure differential in Room 127 also continues to achieve the NYSDEC minimum objective of -0.020 inWC.

The sub-slab versus indoor air pressure in Room 127 met the NYSDEC minimum pressure differential objective of -0.020 inWC. These conditions were achieved in Room 127 with the installation of the relatively new SSDS in the F-Wing, including Room 127. The balance of the Main Building does not consistently meet the NYSDEC approved pressure differential objective; however, the areas of the Main Building where the pressure differential is not achieved are being addressed by the review of the ISMP by the NYSDEC and NYSDOH.

VAPOR BARRIER INSPECTIONS

The vapor barrier was inspected during the quarterly event. No locations of the barrier within the school building were penetrated and the concrete cover above the barrier was observed to be in good condition.

Annual Outdoor Cover Inspection

The outdoor cover systems were visually inspected for signs of erosion or disturbances to the soil cover and cracks or potholes in the asphalt and concrete (see Table 6) during the quarterly event. A total of 30 minor disturbances of the soil and asphalt cover systems were observed (including within the onsite tennis courts), as depicted on Figure 2 and documented in the Photograph Log. Generally, these disturbances consist of:

- Cracks within onsite concrete and asphalt,
- Vector holes,
- Vehicular ruts, and
- Erosion or removal of soil (producing a reduction in the cover thickness).

Action should be taken to repair the disturbances to the soil cover system, including the removal of onsite vectors, to preserve the integrity of the onsite cover systems. Maintenance of the vegetation and the cover soils minimizes the potential for exposure via dermal contact, airborne vapors or dust. In areas where the erosion of the vegetated cover system is due to foot traffic, STERLING recommends repairs be made with asphalt, concrete or stone to prevent a repeat disturbance. Construction activities planned for the summer of 2017 will alleviate the minor disturbances in the asphalt and tennis courts.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

Rodney L. Aldrich, P.E.
Director of Compliance
rodney.aldrich@sterlingenvironmental.com

RLA/bc
Email/First Class Mail
Attachments

cc: Dominic Insogna, Elmira City School District Health and Safety (Email Only)
Aaron Alsheimer, Esq. (Email Only)

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DAILY FIELD REPORT (DFR)

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name: Elmira High School
Project No.: 28014
Client Name: Elmira City School District
Date: April 9 and 10, 2017
Location: 777 South Main Street, Elmira, NY
Inspector: Amanda Castignetti (AC) – Sterling Environmental Engineering, P.C.

Work Description, Comments, Discussion, Problems, Instructions:

Sunday, April 9, 2017

4:45 P.M. Amanda Castignetti (AC) of Sterling Environmental Engineering, P.C. (STERLING) arrives onsite to perform the 2nd Quarter Sub-Slab Monitoring and 2017 Annual Outdoor Cover Inspection of the Elmira High School (EHS). AC begins Outdoor Cover Inspection of EHS grounds.

6:45 P.M. AC completes Outdoor Cover Inspection and departs site.

Monday, April 10, 2017

3:50 P.M. AC arrives onsite to perform the 1st Quarter Sub-Slab Monitoring of the Elmira High School (EHS). Dominic Insogna (DI) of EHS BOCES arrives onsite to assist with inspection. HVAC system set to "occupied" and AC verifies the HVAC system will remain on "occupied" for entire event.

AC measures the outdoor air versus indoor air pressure differential and sub-slab pressure for Room 127. Interior temperature: 73°F, Barometric Pressure: 29.00 inHg

Reading	Pressure Differential Between Outdoor Air and Indoor Air (inWC) for Room 127(1)
1	-0.048
2	-0.046
3	-0.059
4	-0.066
5	-0.053
6	-0.042
7	-0.058
8	-0.049
9	-0.044
10	-0.036
Average =	**-0.0501**

(1) A positive pressure differential reading indicates the indoor air pressure is less than the outdoor air pressure.

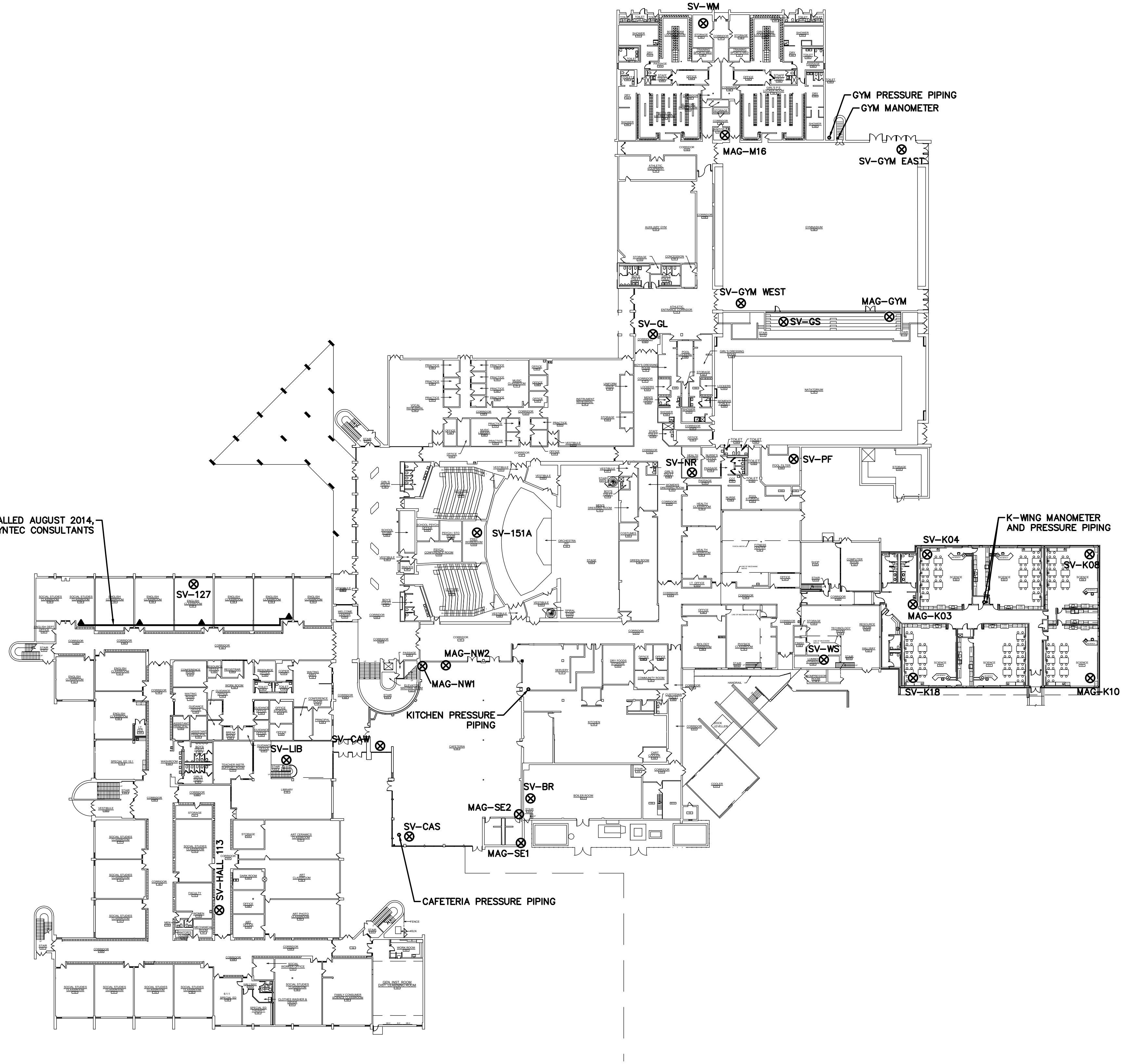
4:00 P.M. AC and DI continue with monitoring event. AC inspects Manometers located in the Science Addition (K-Wing) and Magnahelic Gauges in K-Wing, Cafeteria and Gymnasium (Gym) and begins measuring sub-slab vapor pressure by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602 to the floor ports and/or the tubing connected to the magnehelic gauges and obtains three (3) 32 second average differential pressure readings (see results provided in Table 1, “Quarterly Sub-Slab Pressure Monitoring).

7:10 P.M. AC and DI finish with 2nd quarter monitoring, pack up monitoring equipment and depart site.

Visitors (Name, Affiliation): Dominic Insogna (EHS BOCES)

Signature:

FIGURES



LEGEND:

SV-K08 ⊗	SUB-SLAB SAMPLING LOCATIONS
▲▬▲	SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLED BY GEOSYNTEC CONSULTANTS

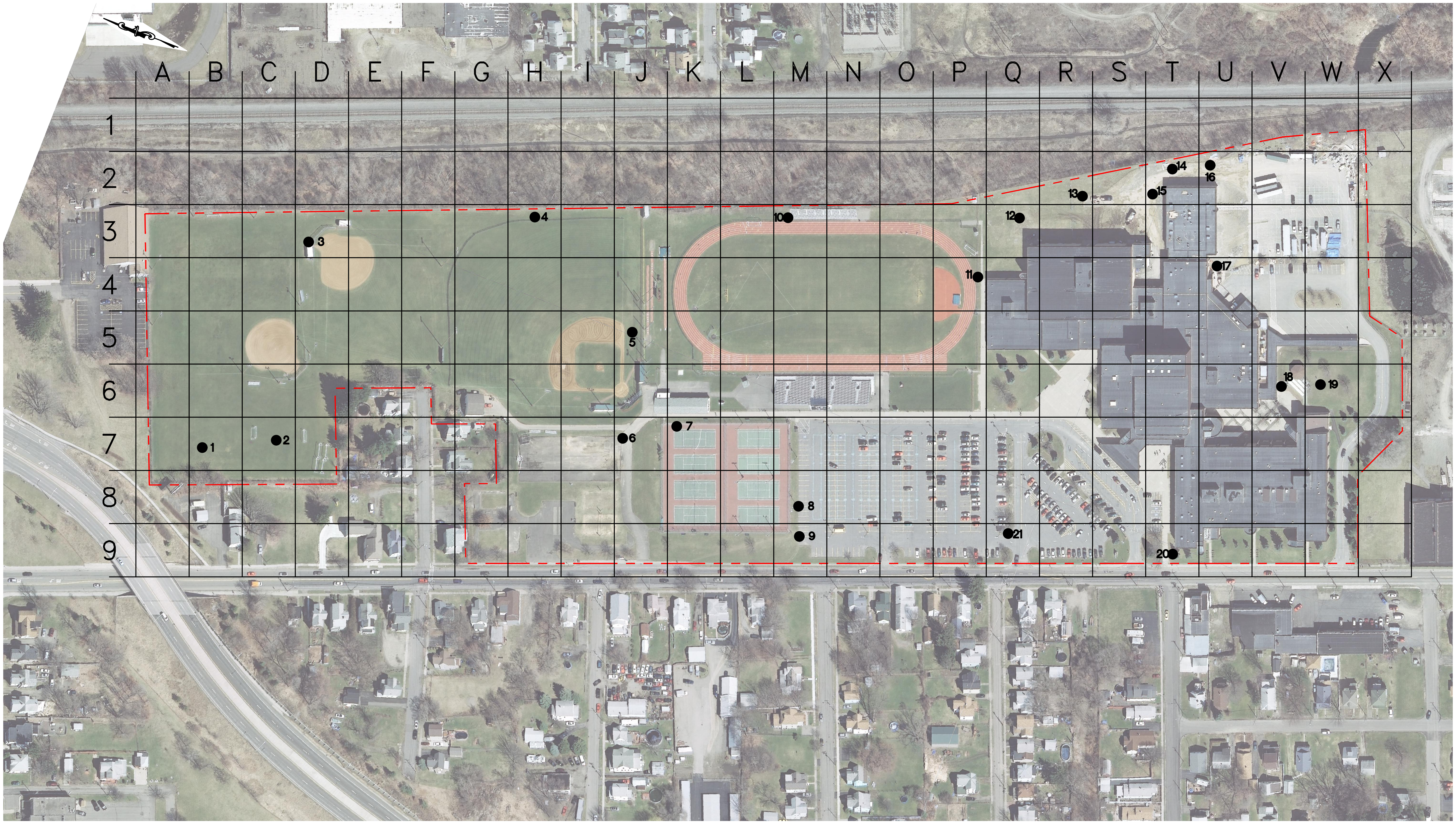
STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

SUB-SLAB
VAPOR PRESSURE PORTS
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.

CITY OF ELMIRA
CHEMUNG CO., N.Y.

PROJ. No.:	28014	DATE:	5/15/2017	SCALE:	N.T.S.	DWG. NO.	28014109	FIGURE	1

S:\Drawings\28014 - Elmira CSD\28014109.Sub-SlabVaporPressurePorts.dwg CAD 4/14/2017 4:11 PM



LEGEND:

— — — APPROXIMATE PROPERTY LINE

●1 PHOTOGRAPH I.D.# OF COVER SYSTEM DISTURBANCE
(GRID SPACE 100')

0 90 180 360
(IN FEET)
1 inch = 180 ft.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

OUTDOOR COVER INSPECTION
APRIL 9, 2017
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.
CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.:	28014	DATE:	5/15/17	SCALE:	1" = 180'	DWG. NO.	28014110	FIGURE	2

TABLES

TABLE 1

Quarterly Sub-Slab Pressure Monitoring
Science Addition (K-Wing)

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**April 10, 2017**
Sampler:	**Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-K08	Science Addition	5:33pm	62.0	29.02	-0.095	-0.094	-0.094
SV-K18	Science Addition	5:42pm	60.6	29.01	-0.069	-0.070	-0.071
SV-K04	Science Addition	5:25pm	71.7	29.02	-0.084	-0.081	-0.082
MAG-K10	Science Addition	5:38pm	59.4	29.01	-0.074	-0.073	-0.074
MAG-K03	Science Addition	5:20pm	71.2	29.01	-0.088	-0.083	-0.086

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

K-Wing (4/10/17)

Reading and Condition of Manometer:	0.3 inWC, good condition
Condition of Negative Pressure Piping:	Good
Mag-K10 (inWC):	-0.065
Mag-K03 (inWC):	-0.075

TABLE 2

Quarterly Sub-Slab Pressure Monitoring
Gym

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **April 10, 2017**
Sampler: **Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-GYM WEST	West Side of Gym	6:15pm	68.4	29.02	-0.314	-0.317	-0.316
SV-GYM EAST	East Side of Gym	6:35pm	66.6	29.02	-0.371	-0.371	-0.372
MAG-M16	Maintenance Room	6:45pm	63.5	29.02	-0.311	-0.307	-0.309
MAG-GYM	Gym Storage Room	6:30pm	73.6	29.02	-0.384	-0.385	-0.384

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Gym (4/10/17)

Reading and Condition of Manometer: 1.0 inWC, good condition.
Condition of Negative Pressure Piping: Good condition.
Mag-M16 (inWC): >-0.250
Mag-GYM Storage (inWC): >-0.250

TABLE 3

Quarterly Sub-Slab Pressure Monitoring
Main Building

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**April 10, 2017**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-151A	Room 151A	7:05pm	60.1	29.02	-0.000	0.001	-0.000
SV-NR	Room 145 (Nurse's Office)	6:00pm	65.9	29.01	0.000	-0.001	-0.001
SV-GL	Hallway Outside of Gym	6:58pm	69.9	29.02	-0.007	-0.005	-0.004
SV-WM	Room 159	6:51pm	63.7	29.02	0.002	0.001	0.001
SV-GS	Gym Storage Room	6:22pm	73.7	29.02	-0.008	-0.008	-0.009
SV-PF	Pool Filter Room	6:05pm	62.2	29.02	-0.000	-0.001	0.000
SV-WS	Room 139C	5:55pm	65.0	29.01	0.001	0.000	0.001
SV-BR	Boiler Room	5:05pm	67.9	29.02	-0.029	-0.029	-0.029
SV-LIB	Library	4:20pm	72.5	29.01	0.002	-0.000	0.002
SV-HALL 113	Hallway Behind Room 113B	4:15pm	68.3	29.01	-0.001	-0.001	-0.000

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

TABLE 4

Quarterly Sub-Slab Pressure Monitoring
Cafeteria

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **April 10, 2017**
Sampler: **Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-CAW	Cafeteria West	4:35pm	67.4	28.99	-0.921	-0.913	-0.912
SV-CAS	Cafeteria South	4:40pm	63.1	29.00	-0.947	-0.950	-0.947
MAG-NW1	Cafeteria - North	5:00pm	72.4	29.00	-0.746	-0.745	-0.743
MAG-NW2	Cafeteria - North	4:55pm	72.1	29.00	-2.06	-2.05	-2.05
MAG-SE1	Cafeteria - South	4:50pm	72.2	28.99	-0.876	-0.854	-0.863
MAG-SE2	Cafeteria - South	4:45pm	72.1	28.99	-0.931	-0.941	-0.936

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Cafeteria (4/10/17)

Mag-NW 1	> -0.250
Mag-NW2	> -0.250
Mag-SE1	> -0.250
Mag-SE2	> -0.250

Table 5

Room 127 Air Pressure Measurements

Elmira City School District

Elmira High School, Elmira, New York

Date	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential - Inches of Water Column (inWC)(1)			Indoor Air vs. Outdoor Air (in WC)
				Reading #1	Reading #2	Reading #3	Average Readings(2)
February 21, 2017	1:55 PM	68.9	29.22	-0.048	-0.049	-0.049	-0.0306
April 10, 2017	4:06 PM	67.7	29.00	-0.058	-0.058	-0.057	-0.0501

Table 6
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location (1)	Cover Type	Condition	Photograph ID
A3	Grass	No Disturbance in Cover	
A4	Grass	No Disturbance in Cover	
A5	Grass	No Disturbance in Cover	
A6	Grass	No Disturbance in Cover	
A7	Grass	No Disturbance in Cover	
A8	Grass	No Disturbance in Cover	
B3	Grass	No Disturbance in Cover	
B4	Grass	No Disturbance in Cover	
B5	Grass	No Disturbance in Cover	
B6	Grass	No Disturbance in Cover	
B7	**Grass**	**Dead Vegetation Due to Athletic Activities.**	**1**
B8	Grass	No Disturbance in Cover	
C3	Grass	No Disturbance in Cover	
C4	Grass	No Disturbance in Cover	
C5	Baseball Field	No Disturbance in Cover	
C6	Grass	No Disturbance in Cover	
C7	**Grass**	**Dead Vegetation Due to Athletic Activities.**	**2**
C8	Grass	No Disturbance in Cover	
D3	**Grass & Baseball Field**	**Vector Holes Observed Under Dugouts.**	**3**
D4	Grass & Baseball Field	No Disturbance in Cover	
D5	Grass	No Disturbance in Cover	
D6	Grass	No Disturbance in Cover	
D7	Grass	No Disturbance in Cover	
D8	Grass	No Disturbance in Cover	
E3	Grass & Baseball Field	No Disturbance in Cover	
E4	Grass & Baseball Field	No Disturbance in Cover	
E5	Grass	No Disturbance in Cover	
E6	Grass	No Disturbance in Cover	
F3	Grass	No Disturbance in Cover	
F4	Grass	No Disturbance in Cover	
F5	Grass	No Disturbance in Cover	
F6	Grass	No Disturbance in Cover	
F7	Grass	No Disturbance in Cover	
G3	Grass	No Disturbance in Cover	
G4	Grass	No Disturbance in Cover	
G5	Grass	No Disturbance in Cover	
G6	Grass, Pavement, & Garage	No Disturbance in Cover	
G7	Grass	No Disturbance in Cover	
G8	Grass & Pavement	No Disturbance in Cover	
G9	Grass & Pavement	No Disturbance in Cover	
H3	**Grass**	**No Grass Due to Foot Traffic**	**4**
H4	Grass	No Disturbance in Cover	
H5	Grass & Baseball Field	No Disturbance in Cover	
H6	Grass & Baseball Field	No Disturbance in Cover	
H7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
H8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
H9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I3	Grass	No Disturbance in Cover	
I4	Grass	No Disturbance in Cover	
I5	Grass & Baseball Field	No Disturbance in Cover	
I6	Grass & Baseball Field	No Disturbance in Cover	
I7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
J3	Grass	No Disturbance in Cover	
J4	Grass	No Disturbance in Cover	
J5	**Grass & Baseball Field**	**No Grass Due to Athletic Activities.**	**5**
J6	Grass, Field House, & Baseball Field	No Disturbance in Cover	
J7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	**6**
J8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
J9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
K3	Grass & Track	No Disturbance in Cover	
K4	Grass & Track	No Disturbance in Cover	
K5	Grass & Track	No Disturbance in Cover	
K6	Grass, Field House, & Pavement	No Disturbance in Cover	
K7	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	**7**
K8	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
K9	Grass	No Disturbance in Cover	
L3	Grass & Track	No Disturbance in Cover	
L4	Grass	No Disturbance in Cover	

Table 6
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location [(1)]	Cover Type	Condition	Photograph ID
L5	Grass & Track	No Disturbance in Cover	
L6	Track, Grass, & Pavement	No Disturbance in Cover	
L7	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
L8	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
L9	Tennis Court & Grass	No Disturbance in Cover	
M3	**Grass, Track & Bleachers**	**No Grass Due to Foot Traffic**	**10**
M4	Grass	No Disturbance in Cover	
M5	Grass & Track	No Disturbance in Cover	
M6	Track, Pavement, Bleachers	No Disturbance in Cover	
M7	Tennis Court, Grass, & Pavement	No Disturbance in Cover	
M8	**Tennis Court, Grass, & Pavement**	**Dead Vegetation Due to Parking Area Plow Activities from 2016**	**8**
M9	**Tennis Court & Grass**	**Dead Vegetation Due to Parking Area Plow Activities from 2016**	**9**
N3	**Grass, Track & Bleachers**	**No Grass Due to Foot Traffic**	
N4	Grass	No Disturbance in Cover	
N5	Grass & Track	No Disturbance in Cover	
N6	Track, Pavement, Bleachers	No Disturbance in Cover	
N7	Grass	No Disturbance in Cover	
N8	Grass	No Disturbance in Cover	
N9	Pavement & Grass	No Disturbance in Cover	
O3	Grass & Track	No Disturbance in Cover	
O4	Grass	No Disturbance in Cover	
O5	Grass & Track	No Disturbance in Cover	
O6	Grass, Track, & Pavement	No Disturbance in Cover	
O7	Pavement	No Disturbance in Cover	
O8	Pavement	No Disturbance in Cover	
O9	Pavement & Grass	No Disturbance in Cover	
P2	Grass	No Disturbance in Cover	
P3	Grass & Track	No Disturbance in Cover	
P4	**Grass, Track, & Pavement**	**Ruts Due to School Maintenance Vehicle Traffic**	**11**
P5	Grass, Track, & Pavement	No Disturbance in Cover	
P6	Grass & Track	No Disturbance in Cover	
P7	Pavement	No Disturbance in Cover	
P8	Pavement	No Disturbance in Cover	
P9	Pavement & Grass	No Disturbance in Cover	
Q2	Grass	No Disturbance in Cover	
Q3	**Grass & School Building**	**Dead Vegetation Due to School Maintenance Vehicle Traffic**	**12**
Q4	Grass & School Building	No Disturbance in Cover	
Q5	Grass & School Building	No Disturbance in Cover	
Q6	Grass	No Disturbance in Cover	
Q7	Pavement & Grass	No Disturbance in Cover	
Q8	Pavement	No Disturbance in Cover	
Q9	**Pavement & Grass**	**No Grass Due to Foot Traffic**	**21**
R2	**Grass**	**Dead Vegetation Due to School Maintenance Vehicle Traffic**	**13**
R3	Grass & School Building	No Disturbance in Cover	
R4	School Building	No Disturbance in Cover	
R5	School Building, Grass, & Concrete	No Disturbance in Cover	
R6	Grass & Concrete	No Disturbance in Cover	
R7	Grass, Pavement, & Concrete	No Disturbance in Cover	
R8	Pavement	No Disturbance in Cover	
R9	Pavement & Grass	No Disturbance in Cover	
S2	Grass	No Disturbance in Cover	
S3	Grass & School Building	No Disturbance in Cover	
S4	School Building & Pavement	No Disturbance in Cover	
S5	School Building	No Disturbance in Cover	
S6	School Building & Grass	No Disturbance in Cover	
S7	School Building & Concrete	No Disturbance in Cover	
S8	Pavement, School Building, & Concrete	No Disturbance in Cover	
S9	Pavement & Grass	No Disturbance in Cover	
T2	**Grass, Pavement & School Building**	**No Grass Due to Dead Vegetation and Truck Traffic, Vector Holes Present Beneath Trailer**	**14, 15**
T3	Grass, Pavement & School Building	No Disturbance in Cover	
T4	Pavement & School Building	No Disturbance in Cover	
T5	School Building	No Disturbance in Cover	
T6	School Building	No Disturbance in Cover	
T7	School Building & Concrete	No Disturbance in Cover	
T8	School Building, Concrete, Pavement	No Disturbance in Cover	
T9	**Grass, Concrete, School Building**	**No Grass Due to Foot Traffic and Dead Vegetation**	**20**
U1	Grass	No Disturbance in Cover	
U2	**Grass, Pavement, & School Building**	**No Grass Due to Dead Vegetation**	**16**
U3	School Building & Pavement	No Disturbance in Cover	
U4	**School Building & Pavement**	**No Grass Due to Foot Traffic and Dead Vegetation**	**17**

Table 6
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location (1)	Cover Type	Condition	Photograph ID
U5	School Building	No Disturbance in Cover	
U6	School Building & Concrete	No Disturbance in Cover	
U7	School Building & Concrete	No Disturbance in Cover	
U8	School Building	No Disturbance in Cover	
U9	Grass	No Disturbance in Cover	
V1	Grass	No Disturbance in Cover	
V2	Pavement	No Disturbance in Cover	
V3	Pavement	No Disturbance in Cover	
V4	Pavement & Grass	No Disturbance in Cover	
V5	Pavement, Concrete, & Grass	No Disturbance in Cover	
V6	**Concrete & Grass**	**Dead Grass Due to Foot Traffic**	**18**
V7	Concrete & School Building	No Disturbance in Cover	
V8	School Building	No Disturbance in Cover	
V9	Grass	No Disturbance in Cover	
W1	Grass	No Disturbance in Cover	
W2	Pavement	No Disturbance in Cover	
W3	Pavement	No Disturbance in Cover	
W4	Grass & Pavement	No Disturbance in Cover	
W5	Grass, Pavement, Concrete	No Disturbance in Cover	
W6	**Grass**	**No Grass Due to Foot Traffic and Dead Vegetation**	**19**
W7	Grass, School Building, Pavement	No Disturbance in Cover	
W8	Grass, School Building, Pavement	No Disturbance in Cover	
W9	Grass, School Building, Pavement	No Disturbance in Cover	
X1	Grass	No Disturbance in Cover	
X2	Grass	No Disturbance in Cover	
X3	Grass	No Disturbance in Cover	
X4	Grass	No Disturbance in Cover	
X5	Grass & Pavement	No Disturbance in Cover	
X6	Grass & Pavement	No Disturbance in Cover	
X7	Grass & Pavement	No Disturbance in Cover	

Notes:

(1) See Figure 2 - Outdoor Cover Inspection, April 9, 2017
Conditions in **Bold** to be addressed by Elmira City School District

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 1

Photograph 2

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 3

Photograph 4

Photograph Log

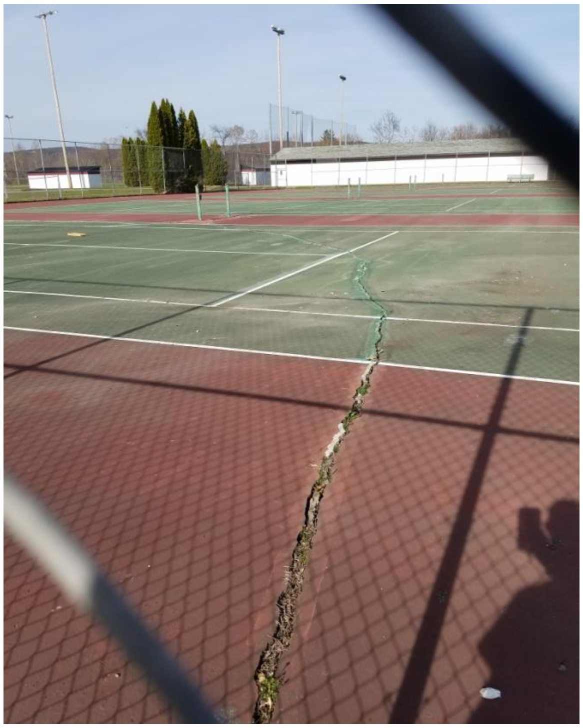
(See Table 6 for Location and Condition Description)

Photograph 5

Photograph 6

Photograph Log

(See Table 6 for Location and Condition Description)



Photograph 7

Photograph 8

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 9

Photograph 10

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 11

Photograph 12

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 13

Photograph 14

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 15

Photograph 16

Photograph Log

(See Table 6 for Location and Condition Description)

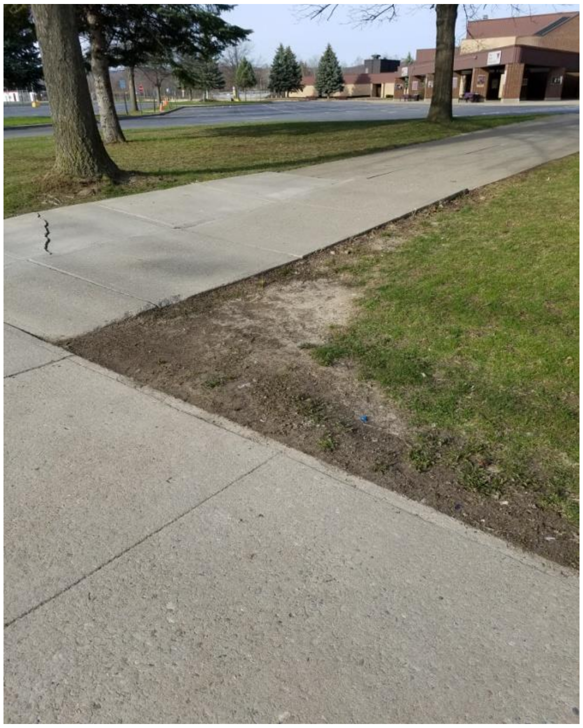
Photograph 17

Photograph 18

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 19



Photograph 20

Photograph Log

(See Table 6 for Location and Condition Description)

Photograph 21

3RD QUARTER SUB-SLAB MONITORING RESULTS

STERLING
Sterling Environmental Engineering, P.C.

October 27, 2017

Mr. Michael Dunn
Elmira City School District
Building and Grounds Department
733 Benjamin Street
Elmira, New York 14901

Subject: Elmira City School District – Elmira High School
2017 3rd Quarter Sub-Slab Pressure Inspection Event and Roof Inspection
STERLING File #28014 (Task 603)

Dear Mr. Dunn,

Sterling Environmental Engineering, P.C. (STERLING) conducted the 2017 3rd quarter sub-slab pressure monitoring event and biannual roof inspection on August 4 and 22, 2017, in accordance with the June 2009 Environmental Management Plan (EMP) for the Elmira High School (EHS). The Daily Field Reports (DFRs) for this event are attached. This letter report presents the results of the monitoring.

SUB-SLAB VAPOR PRESSURE SURVEY

The differential pressure between the sub-slab air and the indoor air was monitored at various locations at EHS. Different areas of the school building are designated as the Main Building, the Science Addition (K-Wing), the Gymnasium (Gym), Room 127 (including the F-Wing) and the Cafeteria (including the Cafeteria Addition and Cafeteria Renovation). The differential pressure between the sub-slab air and the indoor air was measured by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602, to the floor ports and/or the tubing connected to the magnehelic gauges and obtaining three (3) 32-second average pressure readings. The manometer was configured so a negative measurement indicates the outdoor/sub-slab pressure is less than the indoor air pressure (i.e., an outward pressure gradient).

The EHS was unoccupied during the monitoring event. The Heating, Ventilation, and Air Conditioning (HVAC) system was set to typical operational mode. The Main Building and Science Addition rely on the HVAC system to provide a continuous supply of outdoor makeup air. The American Society of Testing Materials (ASTM) E1465 design standard and New York State Department of Environmental Conservation (NYSDEC) approved objective is the maintenance of a minimum pressure differential between indoor and outdoor/sub-slab air of 0.020 inch water column (inWC).

Science Addition, Gym and the Main Building Locations

The pressure differential between the sub-slab air and the indoor air was measured at sub-slab ports at five (5) locations in the Science Addition (K-Wing), four (4) locations in the Gym and ten (10) locations in the Main Building.

Additionally, two (2) aqueous manometers have been installed in the K-Wing and Gym to provide ongoing pressure measurements for the continuously operating sub-slab depressurization systems (SSDSs) which were designed to produce negative sub-slab pressure relative to indoor air pressure (i.e., an outward pressure gradient). The K-Wing aqueous manometer was observed to read approximately 0.2 inWC and was in good condition. The Gym aqueous manometer was observed to read approximately 1.0 inWC and was in good condition.

Three (3) sub-slab pressure measurements were recorded at each sub-slab port and/or each sub-slab location with an installed magnehelic gauge. The sub-slab ports, magnehelic gauges and aqueous manometer measurements for the Science Addition, Gym and the Main Building are presented in Tables 1, 2 and 3, respectively. SV-K04 was not measured as the sub-slab port was inaccessible due to a wax sealant of the port cover. EHS personnel have been notified and will provide the necessary repairs before the next quarterly event in the fourth quarter.

Measured sub-slab vapor pressure ranged from -0.069 to -0.090 inWC in the Science Addition, -0.388 to -0.459 inWC in the Gym and 0.003 to -0.017 inWC in the Main Building.

All measured locations in the Science Addition and Gym satisfy the SSDS design objective of maintaining a pressure difference of 0.020 inWC between the indoor air and the sub-slab air. None of the ten (10) locations in the Main Building satisfy the SSDS design objective. These locations in the Main Building were addressed in the 2016 Annual Certification Report as follows:

> *The EMP requires the HVAC system to be operational when the building is occupied and the HVAC system creates a positive indoor air pressure relative to the sub-slab in the Main Building, including sections that do not have a SSDS. The design of this recently upgraded HVAC system does not meet this requirement uniformly throughout the building footprint. Modifying the HVAC system will involve the contracted services of a qualified professional engineer in mechanical engineering, an HVAC control systems monitoring company and an HVAC balancing contractor. Meanwhile, Unisys and Geosyntec have filed an agency review draft ISMP which concludes all areas which are potential sources of vapor have been addressed by SSDSs. Therefore, the sub-slab areas with elevated contaminants requiring mitigation or monitoring, according to the matrices in the 2006 NYSDOH Guidance, are under negative pressure relative to indoor air. The ISMP concludes the requirement to maintain the indoor air in the entire building under positive pressure relative to the sub-slab outside of the influence of the installed SSDSs is unnecessary. The ISMP is under review by the NYSDEC and NYSDOH and these Departments will be rendering a decision on these conclusions. At the conclusion of the regulatory review an ISMP will be adopted and will replace the existing EMP.*

Cafeteria (including the Cafeteria Addition and Cafeteria Renovation) Locations

Pressure differential readings were measured at six (6) locations in the Cafeteria. Three (3) pressure differential readings were measured at the magnehelic gauge locations and sub-slab port locations (see Figure 1 and Table 4).

Measured sub-slab vapor pressures ranged from -0.906 to -2.03 inWC in the Cafeteria. All locations in the Cafeteria satisfy the SSDS design objective of a pressure difference of 0.020 inWC.

Room 127 (including the F-Wing) Location

Three (3) pressure differential readings were measured at one (1) sub-slab port location (see Table 5). The measured pressure differential ranged from -0.059 to -0.062 inWC. The measured pressure differential satisfies the SSDS design objective of a pressure difference of 0.020 inWC.

OUTDOOR VS. INDOOR AIR PRESSURE DIFFERENCE FOR ROOM 127

The pressure differential between outdoor versus indoor air in Room 127 was measured in the Main Building on August 4, 2017. The average reading was -0.0301 inWC, indicating the indoor air pressure was greater than the outdoor air pressure (see Table 5). It should be noted that the pressure readings from the outdoor air verses the indoor air may be influenced by the weather conditions.

CONCLUSIONS ON PRESSURES

The pressure differentials between indoor air and the sub-slab measured in the Science Addition and Cafeteria continue to meet the NYSDEC minimum objective of -0.020 inWC. The outdoor versus indoor air pressure differential in Room 127 also continues to achieve the NYSDEC minimum objective of -0.020 inWC.

The sub-slab versus indoor air pressure in Room 127 met the NYSDEC minimum pressure differential objective of -0.020 inWC. These conditions were achieved in Room 127 with the installation of the relatively new SSDS in the F-Wing, including Room 127. The balance of the Main Building does not consistently meet the NYSDEC approved pressure differential objective; however, the areas of the Main Building where the pressure differential is not achieved are being addressed by the review of the ISMP by the NYSDEC and NYSDOH.

BIANNUAL NEGATIVE PRESSURE PIPING AND ROOF INSPECTION

The solid pipes within the Science Addition, Gym, and Cafeteria and above the roof were inspected on August 4, 2017. The pipes were inspected for holes, cracks or penetrations that could potentially allow building air or outside air to infiltrate into the system. The inspection indicated the negative pressure solid pipes for the Science Addition, Gym and Cafeteria and above the roof are in good condition.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

Rodney L. Aldrich

Rodney L. Aldrich, P.E.
Director of Compliance
rodney.aldrich@sterlingenvironmental.com

RLA/bc
Email/First Class Mail
Attachments

cc: Dominic Insogna, Elmira City School District Health and Safety (Email Only)
Aaron Alsheimer, Esq. (Email Only)

S:\Sterling\Projects\2008 Projects\Elmira CSD - 28014\Correspondence\2017\2017-10-27_2017 Third Quarter Sub-Slab Pressure Monitoring Inspection_ltr.docx\

DAILY FIELD REPORT (DFR)

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name: Elmira High School
Project No.: 28014
Client Name: Elmira City School District
Date: August 4, 2017
Location: 777 South Main Street, Elmira, NY
Inspector: Amanda Castignetti (AC) – Sterling Environmental Engineering, P.C.

Work Description, Comments, Discussion, Problems, Instructions:

1:30 P.M. Amanda Castignetti (AC) of Sterling Environmental Engineering, P.C. (STERLING) arrives onsite to perform the 3rd Quarter Sub-Slab Monitoring and Biannual Roof Inspection of the Elmira High School (EHS). HVAC system is set to "occupied". Dominic Insogna (DI) of GTS BOCES Health and Safety onsite to assist AC in roof inspection. AC and DI perform Biannual Negative Pressure Piping and Roof Inspection for the SSDSs in the Science Addition (K-Wing), Gym, Cafeteria and Room 127. No holes, cracks or penetrations were observed in the piping within or above the roof of the exhaust system.

NOTE: Pressure fan associated with K-Wing appears to be operating at a slower speed than previously observed. STERLING will review fan specifications.

2:20 P.M. AC and DI begin the SSDS monitoring and inspection event in the Main Building by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602 to the floor ports and/or magnehelic gauges and obtaining three (3) 32-second average pressure readings (see results provided in Tables 1-5, "Quarterly Sub-Slab Pressure Monitoring").

3:40 P.M. AC and DI inspect Manometers located in K-Wing and continue measuring sub-slab vapor pressure. AC could not measure locations SV-K08 and SV-K04 due to difficulties with opening of the encasement lock. EHS personnel were informed and will ensure port can be accessible during additional inspection in late August. AC will revisit ports in late August to finish monitoring event. AC and DI continue to inspect and measure sub-slab vapor pressure in the Gymnasium (GYM) and Magnahelic Gauges in K-Wing and Cafeteria. AC could not measure location SV-CAW due to difficulties with opening of the encasement lock. EHS personnel were informed and will ensure port can be accessible during additional inspection in late August.

4:55 P.M. AC measures the outdoor air versus indoor air pressure differential and sub-slab pressure for Room 127 Temperature: 74.1°F, Barometric Pressure: 28.90 inHg

Reading	Pressure Differential Between Outdoor Air and Indoor Air (inWC) for Room 127(1)
1	-0.029
2	-0.021
3	-0.028
4	-0.039
5	-0.035
6	-0.027
7	-0.035
8	-0.032
9	-0.027
10	-0.028
Average =	**-0.0301**

(1) A positive pressure differential reading indicates the indoor air pressure is less than the outdoor air pressure.

5:15 P.M. AC finishes with 3rd Quarter SSDS and packs up monitoring equipment. AC departs site.

Visitors (Name, Affiliation): Dominic Insogna (GTS BOCES Health and Safety Specialist)

Signature:

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name: Elmira High School
Project No.: 28014
Client Name: Elmira City School District
Date: August 22, 2017
Location: 777 South Main Street, Elmira, NY
Inspector: Amanda Castignetti (AC) – Sterling Environmental Engineering, P.C.

Work Description, Comments, Discussion, Problems, Instructions:

12:00 P.M. Amanda Castignetti (AC) of Sterling Environmental Engineering, P.C. (STERLING) arrives onsite to complete the 3rd Quarter Sub-Slab Monitoring and Biannual Roof Inspection of the Elmira High School (EHS). HVAC system is set to “occupied”. Dominic Insogna (DI) of GTS BOCES Health and Safety onsite to assist AC in sub-slab monitoring event.

12:05 P.M. AC and DI begin the SSDS monitoring and inspection event in the Cafeteria by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602 to the SV-CAW floor port and obtaining three (3) 32-second average pressure readings (see results provided in Table 4, “Quarterly Sub-Slab Pressure Monitoring”).

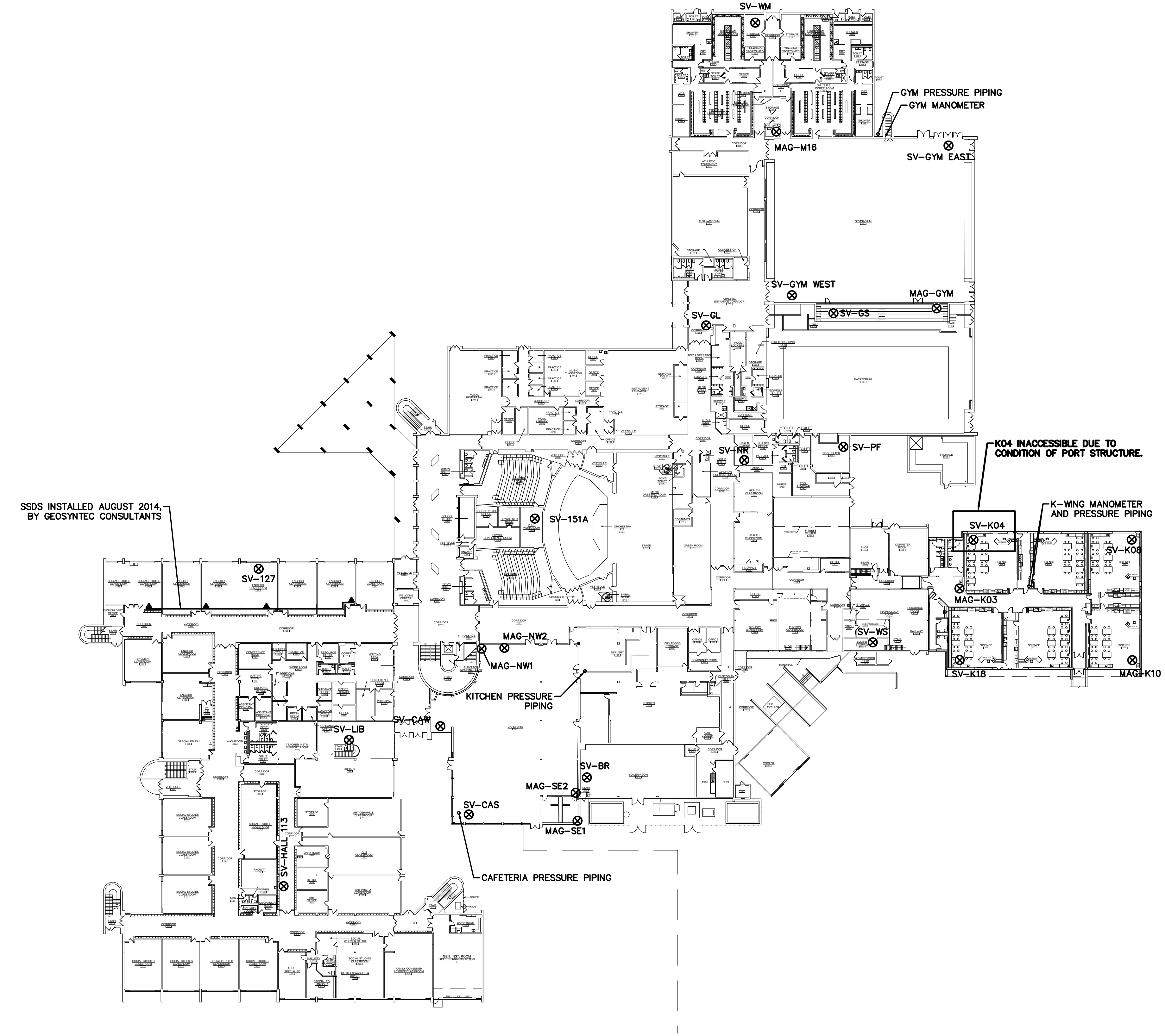
1:20 P.M. AC and DI inspect sub-slab ports SV-K04 and SV-K08 in the Science Addition (K-Wing). The K08 floor port was accessible and AC obtains pressure readings (see results provided in Table 1, “Quarterly Sub-Slab Pressure Monitoring”). K04 was inaccessible due to condition of port structure. DI will inform EHS personnel and will repair before next monitoring event in fourth quarter.

1:30 P.M. AC and DI finish with 3rd Quarter SSDS and pack up monitoring equipment. AC and DI departs site.

Visitors (Name, Affiliation): Dominic Insogna (EHS BOCES)

Signature:

FIGURES



LEGEND:

SV-K08 ⊗ SUB-SLAB SAMPLING LOCATIONS

▬ SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLED BY GEOSYNTEC CONSULTANTS

S:\Drawings\28014 - Elmira CSD\28014109.Sub-SlabVaporPressurePorts.dwg CAD 8/30/2017 8:46 AM

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

SUB-SLAB
VAPOR PRESSURE PORTS
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.
CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.:	28014	DATE:	8/30/2017	SCALE:	N.T.S.	DWG. NO.	28014109	FIGURE	1

TABLES

TABLE 1

Quarterly Sub-Slab Pressure Monitoring
Science Addition (K-Wing)

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**August 4, 2017, unless otherwise noted**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-K08	Science Addition	12:20pm, 8/22/17	75.5	28.90	-0.073	-0.073	-0.073
SV-K18	Science Addition	4:00pm	75.7	28.91	-0.077	-0.080	-0.079
SV-K04*	Science Addition	NA	NA	NA	NA	NA	NA
MAG-K10	Science Addition	3:50pm	75.7	28.91	-0.070	-0.069	-0.069
MAG-K03	Science Addition	3:30pm	75.4	28.92	-0.089	-0.090	-0.088

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.
* SV-K04 was inaccesible due to condition of the screws. EHS personnal addressing for next quarterly sampling event.

K-Wing (8/4/17)

Reading and Condition of Manometer:	0.2 inWC, good condition
Condition of Negative Pressure Piping:	Good
Mag-K10 (inWC):	-0.060
Mag-K03 (inWC):	-0.080

TABLE 2

Quarterly Sub-Slab Pressure Monitoring
Gym

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**August 4, 2017**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-GYM WEST	West Side of Gym	2:55pm	77.7	28.92	-0.388	-0.391	-0.389
SV-GYM EAST	East Side of Gym	2:41pm	69.6	28.92	-0.447	-0.448	-0.450
MAG-M16	Maintenance Room	2:30pm	68.7	28.92	-0.390	-0.389	-0.392
MAG-GYM	Gym Storage Room	2:47pm	75.4	28.92	-0.458	-0.459	-0.459

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Gym (8/4/17)

Reading and Condition of Manometer:	1.0 inWC, good condition.
Condition of Negative Pressure Piping:	Good condition.
Mag-M16 (inWC):	<-0.250
Mag-GYM Storage (inWC):	<-0.250

TABLE 3

Quarterly Sub-Slab Pressure Monitoring
Main Building

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**August 4, 2017**
Sampler:	**Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column) (1)(2)**		
					Reading #1	**Reading #2**	**Reading #3**
SV-151A	Room 151A	5:05pm	71.5	28.90	0.001	0.001	0.001
SV-NR	Room 145 (Nurse's Office)	3:20pm	76.0	28.92	-0.002	-0.001	0.000
SV-GL	Hallway Outside of Gym	2:20pm	81.1	28.91	-0.005	-0.004	-0.006
SV-WM	Room 159	2:35pm	71.1	28.92	-0.000	-0.001	-0.001
SV-GS	Gym Storage Room	3:05pm	68.0	28.92	-0.009	-0.009	-0.009
SV-PF	Pool Filter Room	3:13pm	71.8	28.92	-0.000	-0.001	-0.001
SV-WS	Room 139C	3:30pm	76.5	28.91	-0.000	-0.000	0.000
SV-BR	Boiler Room	4:07pm	79.2	28.91	-0.017	-0.013	-0.013
SV-LIB	Library	4:40pm	73.7	28.90	-0.012	-0.006	-0.006
SV-HALL 113	Hallway Behind Room 113B	4:45pm	68.7	28.90	0.001	0.003	0.001

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

TABLE 4

Quarterly Sub-Slab Pressure Monitoring
Cafeteria

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**August 4, 2017, unless otherwise noted.**
Sampler:	**Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-CAW	Cafeteria West	12:07pm, 8/22/17	75.7	28.89	-1.258	-1.258	-1.257
SV-CAS	Cafeteria South	4:28pm	77.4	28.90	-1.029	-1.033	-1.032
MAG-NW1	Cafeteria - North	4:10pm	76.7	28.91	-0.906	-0.908	-0.906
MAG-NW2	Cafeteria - North	4:15pm	76.7	28.91	-2.02	-2.02	-2.03
MAG-SE1	Cafeteria - South	4:20pm	77.8	28.90	-1.779	-1.781	-1.783
MAG-SE2	Cafeteria - South	4:25pm	77.5	28.90	-1.009	-1.009	-1.008

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Cafeteria (8/4/17)

Mag-NW 1	< -0.250
Mag-NW2	< -0.250
Mag-SE1	> -0.250
Mag-SE2	< -0.250

Table 5
Room 127 Air Pressure Measurements
Elmira City School District
Elmira High School, Elmira, New York

Date	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential - Inches of Water Column (inWC)(1)			Indoor Air vs. Outdoor Air (in WC) Average Readings(2)
				Reading #1	Reading #2	Reading #3	
February 21, 2017	1:55 PM	68.9	29.22	-0.048	-0.049	-0.049	-0.0306
April 10, 2017	4:06 PM	67.7	29.00	-0.058	-0.058	-0.057	-0.0501
August 4, 2017	4:50 PM	74.1	28.90	-0.059	-0.062	-0.061	-0.0301

4TH QUARTER SUB-SLAB MONITORING RESULTS

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name: Elmira High School
Project No.: 28014
Client Name: Elmira City School District
Date: December 26 and 27, 2017
Location: 777 South Main Street, Elmira, NY
Inspector: Amanda Castignetti (AC) – Sterling Environmental Engineering, P.C.

Work Description, Comments, Discussion, Problems, Instructions:

December 26, 2017 (20°F, Overcast)

3:30 P.M. Amanda Castignetti (AC) with Sterling Environmental Engineering, P.C. (STERLING) arrives onsite to perform the 4th Quarter Sub-Slab Monitoring, Indoor Cover Inspection, Product Inventory and 2017 Annual Indoor Air Collection in Room 127 of the Elmira High School (EHS).

5:20 P.M. AC and DI begin indoor cover inspection by looking for evidence of new penetrations or open penetrations of the EHS floor.

7:15 P.M. AC and DI cease activities for the day and depart site.

December 27, 2017 (5°F, Overcast)

5:45 A.M. AC arrives onsite and prepares for 2017 Annual Indoor Air Collection. AC sets up two (2) air sampling canisters, each equipped with a 12-hour regulator, adjacent to each other in the breathing zone on top of a desk in the center of Room 127. HVAC system turns on and is in occupied mode. AC verifies with the Elmira City School District (ECSD) the HVAC system will remain on occupied setting until 11:00 pm to assure the annual sample is collecting a sample with the HVAC on "occupied" status.

6:00 A.M. AC begins the 12-hour indoor air sample collection and checks each regulator every couple hours to verify sample volume.

Sample ID	Canister ID	Initial Pressure (inHg)	Flow Controller ID	Flow Controller Rate (mL/min)
IA-A_122717	1575	-29.98	0027	6.7
IA-B_122717	2063	-29.78	0406	6.5

AC begins the 4th Quarter differential pressure monitoring. AC inspects manometers located in the Science Addition (K-Wing), Gymnasium (Gym) and Magnehelic Gauges in K-Wing, Cafeteria and Gym by measuring sub-slab vapor pressure by attaching a tube connected to the Infiltec digital micro manometer, Model DM1, Serial No. 055602 to the floor ports and/or magnehelic gauges. AC obtains three (3) 32 second average readings at each floor port or the magnehelic gauge connection (see results provided in Table 1, Quarterly Sub-Slab Pressure Monitoring).

6:05 A.M. AC measures the outdoor air versus indoor air pressure differential and sub-slab pressure for Room 127. Interior Temperature: 68.1°F, Barometric Pressure: 28.87 inHg, Weather Outside: 10°F Overcast, Wind <5mph.

Reading	Pressure Differential Between Outdoor Air and Indoor Air (inWC) for Room 127(1)
1	-0.028
2	-0.024
3	-0.025
4	-0.021
5	-0.026
6	-0.026
7	-0.028
8	-0.026
9	-0.021
10	-0.025
Average =	**-0.025**

(1) A negative pressure differential reading indicates the indoor air pressure is greater than the outdoor air pressure.

9:30 A.M. AC completes the 4th Quarter Sub-Slab Monitoring Inspection and continues with DI the Indoor Cover Inspection.

1:00 P.M. AC completes the Indoor Cover Inspection. DI offsite.

1:30 P.M. AC begins performing the Product Inventory by examining all volatile organic compound (VOC) containers and checking for leaks using a photoionization detector (PID) with an 11.7 eV lamp. AC also examines surrounding air adjacent to all (if any) visually impacted VOC containers for potential openings or leakages. Majority of VOC containers are stored in non-flammable cabinets. No potentially impacted containers were observed.

5:30 P.M. AC completes Annual Indoor Air Collection. Packs up canisters for delivery to Alpha Analytical service center in Albany, NY. AC finishes 4th Quarter Sub-Slab Monitoring, 2017 Annual Indoor Air Collection, Product Inventory and Indoor Cover Inspection. AC packs up equipment and departs from the site within the hour.

Sample Time Collected	Sample ID	Canister ID	Final Pressure (inHg)
4:40 P.M.	IA-A_122717	1575	-7.81
5:15 P.M.	IA-B_122717	2063	-8.52

9:00 P.M. AC drops air samples at Alpha Lab courier in Albany, NY.

Visitors (Name, Affiliation): Dominic Insogna (EHS BOCES)

Signature:

TABLE 1

Quarterly Sub-Slab Pressure Monitoring
Science Addition (K-Wing)

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **December 27, 2017**
Sampler: **Amanda Castignetti**

Location	**Room ID Description**	**Time**	**Temperature (°F)**	**Indoor Air Pressure (inches of Mercury)**	**Sub-Slab Pressure Differential (inch of water column)** [1][2]		
					Reading #1	**Reading #2**	**Reading #3**
SV-K08	Science Addition	8:05am	67.9	28.91	-0.061	-0.062	-0.062
SV-K18	Science Addition	7:55am	68.1	28.90	-0.039	-0.039	-0.039
SV-K04*	Science Addition	10:35am	67.9	21:36	-0.056	-0.057	-0.056
MAG-K10	Science Addition	8:00am	67.2	28.90	-0.039	-0.039	-0.041
MAG-K03	Science Addition	8:20am	66.8	28.91	-0.047	-0.046	-0.046

Note: [1] Negative value indicates sub-slab pressure is less than indoor air pressure.

[2] Positive value indicates sub-slab pressure is greater than indoor air pressure.

* SV-K04 was inaccesible due to condition of the screws. EHS personnal addressing for next quarterly sampling event.

<u>K-Wing (12/27/17)</u>

Reading and Condition of Manometer: 0.2 inWC, good condition
Condition of Negative Pressure Piping: Good
Mag-K10 (inWC): -0.031
Mag-K03 (inWC): -0.035

TABLE 2

Quarterly Sub-Slab Pressure Monitoring
Gym

Sterling Project Name:	**Elmira City School District**
Project Location:	**Elmira High School, Elmira, NY**
Sterling Project Number:	**28014**
Date:	**December 27, 2017**
Sampler:	**Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) [(1)(2)]		
					Reading #1	Reading #2	Reading #3
SV-GYM WEST	West Side of Gym	6:45am	70.1	28.88	-0.303	-0.304	-0.303
SV-GYM EAST	East Side of Gym	7:05am	69.7	28.87	-0.352	-0.352	-0.352
MAG-M16	Maintenance Room	7:10am	68.5	28.91	-0.316	-0.316	-0.315
MAG-GYM	Gym Storage Room	6:55am	72.5	28.90	-0.366	-0.365	-0.366

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Gym (12/27/17)

Reading and Condition of Manometer:	1.0 inWC, good condition.
Condition of Negative Pressure Piping:	Good condition.
Mag-M16 (inWC):	<-0.250
Mag-GYM Storage (inWC):	<-0.250

TABLE 3

Quarterly Sub-Slab Pressure Monitoring
Main Building

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **December 27, 2017**
Sampler: **Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) (1)(2)		
					Reading #1	Reading #2	Reading #3
SV-151A	Room 151A	9:15am	70.2	28.90	-0.001	0.001	-0.000
SV-NR	Room 145 (Nurse's Office)	7:40am	67.5	28.89	0.002	0.001	0.001
SV-GL	Hallway Outside of Gym	7:25am	66.4	28.89	-0.003	-0.003	-0.003
SV-WM	Room 159	7:40am	63.7	28.89	0.001	0.002	0.001
SV-GS	Gym Storage Room	6:50am	72.1	28.90	-0.007	-0.007	-0.008
SV-PF	Pool Filter Room	7:35am	72.5	28.91	0.001	0.000	0.002
SV-WS	Room 139C - Ice Storage Room	7:15am	67.1	28.89	0.000	0.002	0.000
SV-BR	Boiler Room	8:30am	67.3	28.89	-0.025	-0.024	-0.025
SV-LIB	Library	9:05am	68.2	28.90	0.000	-0.001	-0.001
SV-HALL 113	Hallway Behind Room 113B	9:10am	67.8	28.91	-0.000	-0.000	-0.001

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

TABLE 4

Quarterly Sub-Slab Pressure Monitoring
Cafeteria

Sterling Project Name: **Elmira City School District**
Project Location: **Elmira High School, Elmira, NY**
Sterling Project Number: **28014**
Date: **December 27, 2017**
Sampler: **Amanda Castignetti**

Location	Room ID Description	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential (inch of water column) [(1)(2)]		
					Reading #1	Reading #2	Reading #3
SV-CAW	Cafeteria West	9:00am	67.5	28.89	-0.935	-0.937	-0.937
SV-CAS	Cafeteria South	8:55am	66.9	28.90	-0.947	-0.921	-0.927
MAG-NW1	Cafeteria - North	8:40am	70.0	28.89	-0.790	-0.795	-0.799
MAG-NW2	Cafeteria - North	8:35am	70.1	28.89	-2.18	-2.18	-2.18
MAG-SE1	Cafeteria - South	8:50am	68.7	28.89	-0.854	-0.854	-0.861
MAG-SE2	Cafeteria - South	8:45am	69.3	28.89	-1.841	-1.841	-1.047

Note: (1) Negative value indicates sub-slab pressure is less than indoor air pressure.
(2) Positive value indicates sub-slab pressure is greater than indoor air pressure.

Cafeteria (12/27/17)

Mag-NW 1	< -0.250
Mag-NW2	< -0.250
Mag-SE1	Magnahelic was not measuring pressure difference. EHS personnel to repair.
Mag-SE2	< -0.250

Table 5

Room 127 Air Pressure Measurements

Elmira City School District

Elmira High School, Elmira, New York

Date	Time	Temperature (°F)	Indoor Air Pressure (inches of Mercury)	Sub-Slab Pressure Differential - Inches of Water Column (inWC)(1)			Indoor Air vs. Outdoor Air (in WC) Average Readings(2)
				Reading #1	Reading #2	Reading #3	
February 21, 2017	1:55 PM	68.9	29.22	-0.048	-0.049	-0.049	-0.0306
April 10, 2017	4:06 PM	67.7	29.00	-0.058	-0.058	-0.057	-0.0501
August 4, 2017	4:50 PM	74.1	28.90	-0.059	-0.062	-0.061	-0.0301
December 27, 2017	6:05 AM	68.1	28.87	-0.053	-0.053	-0.053	-0.0250

ATTACHMENT 4

PRODUCT INVENTORY FOR EHS
AND
AIR QUALITY QUESTIONNAIRE

OSR – 3

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

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

Preparer's Name Dominic Insogna Date/Time Prepared 12/7/2017

Preparer's Affiliation HSE Compliance Specialist Phone No. (607) 735-3992

Purpose of Investigation Supplement to Elmira High School IAQAP

1. OCCUPANT: NA

Interviewed: Y / N

Last Name: ____________ First Name: ____________

Address: ______________________________

County: __________

Home Phone: ____________ Office Phone: ____________

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

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

Interviewed: Y / N

Last Name: ____________ First Name: ____________

Address: ______________________________

County: __________

Home Phone: ____________ Office Phone: ____________

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	[✓ School]	Commercial/Multi-use
Industrial	Church	Other: __________

Notes:
NA = Not Applicable

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

Ranch
Raised Ranch
Cape Cod
Duplex
Modular

2-Family
Split Level
Contemporary
Apartment House
Log Home

3-Family
Colonial
Mobile Home
Townhouses/Condos
Other:__________

If multiple units, how many? NA

If the property is commercial, type?

Business Type(s) NA

Does it include residences (i.e., multi-use)? Y / [✓ N] If yes, how many? NA

Other characteristics:

Number of floors 3 Building age 36 years

Is the building insulated? [✓ Y] / N How air tight? Tight / [✓ Average] / Not Tight

4. AIRFLOW

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

Airflow between floors

Neutral

Airflow near source

NA

Outdoor air infiltration

Some of the building is positively pressurized compared to the outside based on sub-slab depressurization systems (SSDSs) located in the gym, K-Wing, F-Wing and two in the Cafeteria.

Infiltration into air ducts

The HVAC system was partially refurbished or replaced in 2010. Some original air ducts remain. There may be leakage from these original ducts.

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

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

Basement/Lowest level depth below grade: 30 (feet)

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

Floor drains in various locations (boiler room, kitchen, custodial closets).

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

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

[✓ Hot air circulation]
Space Heaters
Electric baseboard
Heat pump
Stream radiation
Wood stove
Hot water baseboard
Radiant floor
Outdoor wood boiler
[✓ Other] Unit ventilation above suspended ceiling for classrooms.

The primary type of fuel used is:

[✓ Natural Gas]
Electric
Wood
Fuel Oil
Propane
Coal
Kerosene
Solar

Domestic hot water tank fueled by: Natural Gas

Boiler/furnace located in: Basement Outdoors [✓ Main Floor] Other________

Air conditioning: [✓ Central Air] Window units Open Windows None

Are there air distribution ducts present? [✓ Y] / N

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

Large air handler units on roof feed supply ducts into building. Cold air returns exist and duct joints may leak.

7. OCCUPANCY

Is basement/lowest level occupied? [✓ Full-time] Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	Two (2) large lecture halls.
1st Floor	Classrooms and offices.
2nd Floor	Classrooms and offices.
3rd Floor	NA
4th Floor	NA

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / [✓ N]

b. Does the garage have a separate heating unit? Y / N / [✓ NA]

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / [✓ NA] Please specify

d. Has the building ever had a fire? Y / [✓ N] When?

e. Is a kerosene or unvented gas space heater present? Y / [✓ N] Where?

f. Is there a workshop or hobby/craft area? [✓ Y] / N Where & Type? 1st Floor Woodshop

g. Is there smoking in the building? Y / [✓ N] How frequently?

h. Have cleaning products been used recently? [✓ Y] / N When & Type? Daily, see Product Inventory, Table 1

i. Have cosmetic products been used recently? [✓ Y] / N When & Type? Daily, by staff and students; products unknown.

j. Has painting/staining been done in the last 6 months? [✓ Y] / N Where & When? Throughout the building as part of the remodel.

k. Is there new carpet, drapes or other textiles? [✓ Y] / N Where & When? Throughout the building as part of the remodel in 2010.

l. Have air fresheners been used recently? [✓ Y] / N When & Type? Custodial use.

m. Is there a kitchen exhaust fan? [✓ Y] / N If yes, where vented? Outside

n. Is there a bathroom exhaust fan? [✓ Y] / N If yes, where vented? Outside

o. Is there a clothes dryer? [✓ Y] / N If yes, is it vented outside? [✓ Y] / N

p. Has there been a pesticide application? Y / [✓ N] When & Type? ____________

Are there odors in the building? Y / [✓ N]
If yes, please describe: ____________

Do any of the building occupants use solvents at work? [✓ Y] / N The Woodshop
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? See Product Inventory, Table 1

If yes, are their clothes washed at work? Y / [✓ N]

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

Yes, use dry-cleaning regularly (weekly)
Yes, use dry-cleaning infrequently (monthly or less)
Yes, work at a dry-cleaning service
No
[✓ Unknown]

Is there a radon mitigation system for the building/structure? [✓ Y] / N Date of Installation: 2009 - K-Wing
2010 - Gym
2013 and 2014 - Cafeteria
2014 - F-Wing

Is the system active or passive? [✓ Active] / Passive

9. WATER AND SEWAGE

Water Supply: [✓ Public Water] Drilled Well Driven Well Dug Well Other: ________

Sewage Disposal: [✓ Public Sewer] Septic Tank Leach Field Dry Well Other: ________

10. RELOCATION INFORMATION (for oil spill residential emergency) [✓ NA]

a. Provide reasons why relocation is recommended: ____________

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

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

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

11. FLOOR PLANS

See Figure 1

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

Basement: No Basement

First Floor:

12. OUTDOOR PLOT NA

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

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

13. PRODUCT INVENTORY FORM

See Table 1

Make & Model of field instrument used: MiniRAE 3000

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

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* 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.

Table 1
Inventory and Use Evaluation for Products Containing Volatile Organic Compounds (VOCs) for Elmira High School - Elmira City School District
Conducted December 27, 2017

Location	Product Description	Quantity X Volume	Condition	Chemical Ingredients	PID 3000 11.7 eV Lamp / Background 0.0ppm
Art Room 102	Blickrylic Economy Acrylic Polymer	55 x 2L, 47 X 8oz., 77 X 1 L	U/UO	Ammonia, Amorphous Silica, Benzotriazolyl-OH-Butylphenyl Propionate, Carbon Black	0.00
Art Room 102	Best Look Spar Varnish	1 X 16 oz.	U	Aliphatic Hydrocarbons	0.00
Art Room 102	Surguard #911 Clear Gloss	1 X 14 oz.	U	Placticizer, Resin, Propane/Isobutane/Butane Propellant Toluene; Isobutyl Acetate, MEK, Methyl N-Amyl Ketone	0.90
Art Room 102	Zinsser Bulls Eye Shellac Sealer and Finish Spray	1 X 12 oz.	U	Shellac resins, Ketones, Alcohols, and Aliphatic hydrocarbons	0.10
Art Room 102	Nybco Clear Shellac	1 X 11 oz.	U	Ethyl alcohol, Acetone and Butyl cellosolve	1.60
Art Room 102	Sureguard #951 McDonald Pro-tecta-cote Retouch	1 X 14 oz.	U	Toluene, Isobutyl acetate, Methyl ethyl ketone, Methyl n-amyl ketone	0.90
Art Room 102	Krylon Int.-Ext. Spray Paint	1 X 12 oz.	U	Ketones, Hydrocarbon propellants, Xylene, Acetates, Ethylbenzene and Toluene	0.50
Art Room 102	Beacon Styrofoam Glue	1 X 2 oz.	U	Methacrylic Acid, Methyl Methacrylic	0.10
Art Room 102	Blow-Off Air Duster	1 X 9 oz.	U	1,1,1,2 Tetrafluoroethane petroleum hydrocarbon	0.10
Art Room 102	Devcon 5-Minute Epoxy Hardener	2 X .5 oz.	U	2,4,6 Tri(Dimethylaminomethyl) phenol and Polymer	0.20
Art Room 102	Marshall's Pre-Color Spray	1 X 11 oz.	U	Acetone, Propane, Isobutane, Toluene, Acrylic copolymer	4.90
Art Room 102	Pure Gum Turpentine	1 X 1 qt.	U	Pure Gum Turpentine	3.70
Art Room 102	Elmer's Rubber Cement	4 X 1 gal., 11 X 4 oz.	UO	n-Heptane, Rubber Latex, Petroleum Distillates	0.50
Art Room 102	Ross Rubber Cement	4 X 8 oz., 2 X 1 gal.	U/UC	Hexane	4.5 / 8.3
Art Room 102	Best-Test Rubber Cement	12 X 8 oz., 12 X 4 oz.	U/UO	Heptane	7.10
Art Room 102	Best-Test Rubber Cement Thinner	1 X 16 oz.	U	Heptane	7.30
Art Room 102	Premier Dry Mount	2 X 11 oz.	U/UO	Cyclohexane, Liquefied petroleum gas	0.50
Art Room 102	Sax Workable Fixative	10 X 12 oz.	U	Hydrocarbon Propellants, PM Acetate, Butyl Benzyl Phthalate, Acetone	0.30
Art Room 102	Krylon UV-resistant Acrylic Coating	1 X 11 oz.	U	Acetone, Xylene, Toluene, Petroleum distillates, Propane, Butane	1.30
Art Room 102	Best-Test Paper Cement	1 X 8 oz.	U	N-Heptane	2.70
Art Room 102	Krylon Workable Fixatif	5 X 11 oz.	UO	Acetone, Toluene, Propane, Butane, Ethyl 3-Ethoxypropionate	1.60
Art Room 102	Krylon Preserve It	2 X 11 oz.	UO	Acetone, Hydrocarbon Propellants, Toluene, Ethyl 3-Ethoxyprpionate, Aromatic Hydrocarbons	0.10
Art Room 102	Design Master Surface Sealer	2 X 12 oz.	U/UO	Acetone, Iobutyl Acetate, 2-Propanol, Ethyl-3-Ethoxyproprionate, Propane	0.30
Art Room 102	Hahnemühle Protective Spray	1 X 11 oz.	U	Isopropyl Alcohol, Dimethyl Ether, n-Butyl Acetate	0.20
Art Room 102	Aleene's Tacky Spray	2 X 11 oz.	U	Hexante, Dimethyl Either, Acetone, Liquified Petroleum Gas, Propane	4.10
Art Room 102	Krylon In/Out Satin Spray	1 X 12 oz.	U	Acetone, Propane, n-Butyl Acetate, Butane, Xylene, Ethylbenzene, Lt. Aliphatic Hydrocarbon Solvent, Ethyl 3-Ethoxypropionate.	0.00
Pottery Room 101	Blickrylic Economy Acrylic Polymer	21 x 2L, 34 X 1 L	U/UO	SDS not provided.	0.00
Pottery Room 101	Premium Tempura	10 X pint, 12 X 8oz.	U/UO	SDS not provided.	0.00
Boiler Room	Diedrich Tech. 202V Cleaner	1 X 1 gal.	U	Acid Chlorides	0.00
Boiler Room	HVAC Water Treatment Compound XJ-715	1 X 20 gal.	U	SDS not provided.	0.00
Boiler Room	Devflex HP Semi Gloss	5 gal.	U	Propylene Glycol, Diethylene Glycol, Monobutyl Ether, Texanol	0.00
Outside Boiler Room	Simoniz Pick-Up	6 X 1 gal.	U	2-Propanol, 1-Phenoxy, 2-Propenoic Acid, Butyl Ester, Polymer w/Ethenyl Acetate, Silicic Acid, Aluminum Salt	0.02
Outside Boiler Room	Dust mop treatment	1 X 15 gal.	UO	Ethylene glycol	0.02
Outside Boiler Room	Simoniz Liquid hand soap	2 X 1 gal.	UO	Potassium cocoate	0.02
Outside Boiler Room	Xtraction II Carpet Cleaner	4 X 1 gal.	U/UO	Alcohol ethoxylate, Sodium carbonate, Tetrasodium ethylenediaminetetraacetate, 2-Butoxyethanol, Sodium alkylnapthalenesulfonate, Contents partially unknown	0.02
Outside Boiler Room	True Kleen	4 X 1 gal.	U/UO	Cocamide DEA, Potassium Cocoate, Potassium Oleate, Sodium Styrene/PEG 10 Maleate/Nonoxylnol-10 Maleate/Acrylate copolymer (and) Ammonium Nonoxylnol-4 Sulfate, Chloroxylenol, DMDM Hydantoin Dye	0.02

Notes:
UO - Unopened Container.
U - Used Container.
D - Deteriorated Chemicals - none noted for 2017 inventory.

Table 1 (cont.)
Inventory and Use Evaluation for Products Containing Volatile Organic Compounds (VOCs)
for Elmira High School - Elmira City School District
Conducted December 27, 2017

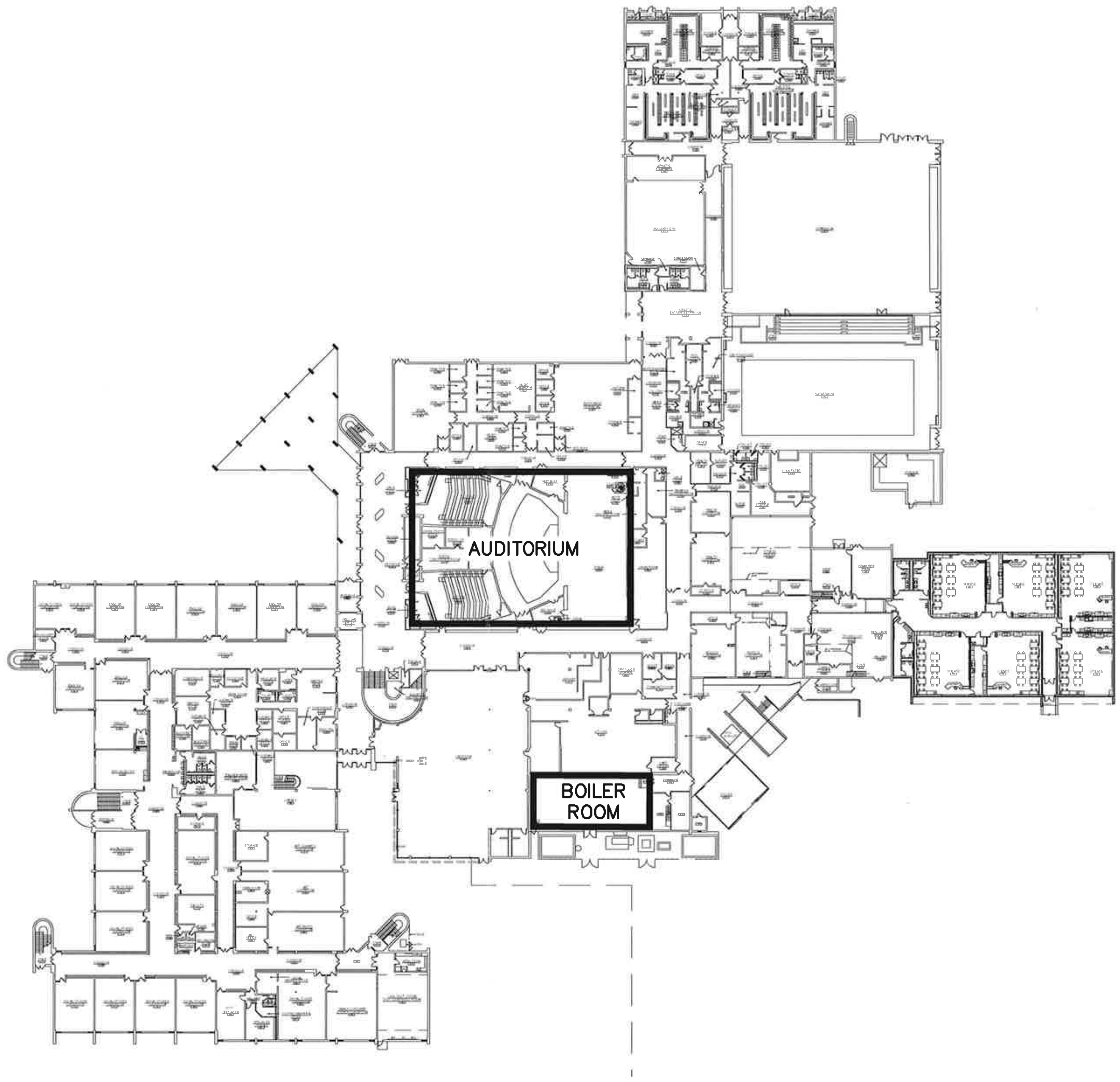
Location	Product Description	Quantity X Volume	Condition	Chemical Ingredients	PID 3000 11.7 eV Lamp / Background 0.0ppm
Custodial Cleaning Chemicals	Buckeye True Seven pH Neutral Cleaner	1 X 5 gal.	U	Alcohol ethoxylate	0.00
Custodial Cleaning Chemicals	Buckeye Terminator One-Step Disinfectant	1 X 5 gal.	U	Dialkyldimethyl ammonium chloride	0.00
Custodial Storeroom M-10	Dust mop treatment	1 X 15 gal.	UO	Ethylene glycol	0.04
Custodial Storeroom M-10	n-Buyric Acid	3 X 30 mL	U	n-Buyric Acid	0.04
Custodial Storeroom M-10	m-Amyl Alcohol	2 X 100 mL	U	m-Amyl Alcohol	0.04
Custodial Storeroom M-10	Hydrochloric Acid	1 X 1 gal., 1 X 100 mL	U	Hydrochloric Acid	0.04
Custodial Storeroom M-10	Nitric Acid	1 X 1 L	U	Nitric Acid	0.04
Custodial Storeroom M-10	Phosphoric Acid	1 X 1 qt	U	Phosphoric Acid	0.04
Custodial Storeroom M-10	Sulfuric Acid	1 X 5 pt., 1 X 500 mL	U	Sulfuric Acid	0.04
Custodial Storeroom M-10	Ammonia	2 X 1 gal	U	50% Ammonia	0.04
Custodial Storeroom M-10	Simoniz pickup	5 X 1 gal	U	Sodium tripolyphosephate, sodium metasilicate, nonylphenoxpolyethyleneoxyethanol	0.04
Custodial Storeroom M-10	Simoniz gentle touch cleanser	2 X 1 qt	U	Calcium Carbonate, sodium octane sulfonate, sodium metasilicate	0.04
Custodial Storeroom M-10	Isopropyl Alcohol 99%	1 X 1 gal.	U	$(CH_3)_2CHOH$	0.04
Custodial Storeroom M-10	Lab Grade Octyl Alcohol	2 X 100 mL	UO	Octyl alcohol	0.04
Custodial Storeroom M-10	Lab Grade n-Amyl Alcohol	2 X 100 mL	U	n-Amyle alcohol	0.04
Custodial Storeroom M-10	Reagent Grade Methanol	1 X 4 L	U	Methanol	0.04
Custodial Storeroom M-10	99% Isopropyl Alcohol	1 X 500 mL, 1 X 1 gal.	U	Isopropyl alcohol	0.04
Custodial Storeroom M-10	Denatured Ethanol	1 X 4 L	U	Ethanol	0.04
Custodial Storeroom M-10	Denatured Anhydrous Reagent Alcohol	1 X 1 gal.	U	Alcohol	0.04
Custodial Storeroom M-10	Simoniz Cleaner Degreaser	2 X 5 gal.	U	2-Butoxy ethanol, Water	0.04
Custodial Storeroom M-135	Simoniz degreaser	1 X 25 gal bucket	U	Butoxyethanol	0.05
Custodial Storeroom M-135	Buckeye Starspray Glass Cleaner	4 X 5 gal.	U	NA	0.05
Custodial Storeroom M-135	Buckeye Terminator One-Step Disinfectant	1 X 5 gal.	U	Dialkyldimethyl ammonium chloride	0.05
Custodial Storeroom M-3	Simoniz Pick-Up	1 X 1 gal.	U/UO	Sodium tripolyphosephate, sodium metasilicate, nonylphenoxpolyethyleneoxyethanol	0.05
Custodial Storeroom M-3	Xtraction II	1 X 1 gal.	U	Alcohol ethoxylate, Sodium Carbonate	0.05
IDF M-2	Buckeye Star Spray Concentrate	1 X 32 oz.	U	Water, Propylene Glycol Monomethyl Ether, Alpha Olefin Sulfonate	0.04
IDF M-2	Allstar Deodorizer	1 X 10 oz.	U	Propane, N-Butane	0.04
IDF M-2	Vasco Quixee Creme Cleaner	1 X 32 oz.	U	MSDS not provided.	0.04
IDF M-2	Shakedown Odor Eliminator	1 X 15 oz.	U	Sodium Sulfate, Sodium Bicarbonate, Sodium Calcium Aluminate, Mineral Oil	0.04
IDF M-3	Ready Match Touchup	1 X 4.5 oz.	U	Acetone, Propane, Toluene, N-Butane, Methyl Ethyl Ketone, Xylene, 1-Methoxy-2-Acetoxzypropane, Ethyl Benzene	0.04
IDF M-2	Simoz Flush Away	1 X 1 qt.	U	Alkyl Dimethyl Benzyl Ammonium Chloride, Alkyl Dimethyl Ethylbenzyl Ammonium Chloride, Hydrogen Chloride	0.04
Dishwashing Room	A-1 Bleach	5 X 1 gal.	UO	Sodium Hypochlorite	0.00
Dishwashing Room	Lime-A-Way	6 X 1 gal.	U/UO	Uronium Hydrogen Sulphate, Urea	0.00
Dishwashing Room	Sicily Dishwashing Concentrate	3 X 1 gal.	UO	Sodium Alkybenzene, Sulfonate, Sodium Laureth Sulfate	0.00
Dishwashing Room	Ecolab Greasecutter Plus	6 X 1 gal.	U/UO	Sodium Hydroxide, Sodium Gluconate, Monoethanolamine	0.00
Dishwashing Room	Tide Detergent	5 X 50 oz.	UO	Biodigradable Surfactants, Enzymes	0.00
Dishwashing Room	Ecolab Scout Pan & Pot Detergent	2 X 2 gal.	U/UO	Sodium, Olefin Sulfonate, Sodium Laureth Sulfate, Cocmine Oxide, Sodium Chloride, Alcohol	0.00
Dishwashing Room	Spray Nine Glass and Stainless Steal Cleaner	1 X 19 oz.	U	2 - Butoxyethanol, Flammable Propellant	0.00
Dishwashing Room	Keystone Satin Shine	4 X 16 oz.	U	Mineral Oils/Spirits, Butane, Propane	0.00
Dishwashing Room	Oasis 146 Multi - Quad Sanitizer	2 X 2.5 gal.	U	Dimethyl benzyl ammonium chloride, Octyl decyl dimethyl ammonium chloride, Dibecyl dimethyl ammonium chloride, Dioctyl dimethyl ammonium chloride	0.00
Dishwashing Room	Specialty Oven Rinse	4 X 1 gal.	U	Water, Citric acid, Proprietary nonionic surfactan	0.00
Dishwashing Room	Specialty Oven Cleaner	2 X 1 gal.	U	Water, Sodium carbonate, Tetrasodium, Sodium xylene sulfonate, Ethoxylated alcohol	0.00
Wood Shop, Finish Room	Titebound II Wood Glue	1 X 16 oz., 2 X 1 gal.	U	Aluminum Chloride, Anhydrous	0.48
Wood Shop, Finish Room	Pitsco HD Bond II	3 X 16 oz.	U	Chemical Ingredients not available due to "trade secrets" (MSDS).	0.48
Wood Shop, Finish Room	Pitsco White Glue	1 X 3.75 gal.	U	Chemical Ingredients not available due to "trade secrets" (MSDS).	0.48
Wood Shop, Finish Room	Jasco Green Mineral Spirits	1 X 1 qt.	U	Hydrotreated Light Distillate (Petroleum)	0.48
Wood Shop, Finish Room	Klean Strip Odorless Mineral Spirits	1 X 1 qt.	U	Petroleum Distillates	0.48
Wood Shop, Finish Room	Ponsonol Lighter Fluid	1 X 5 oz	U	Naptha	0.48
Wood Shop, Finish Room	Fastrip Brush Cleaner	1 X 1 qt.	U	Methylene Chloride, Methanol, Toluene, Acetone, and Petroleum Distillates	0.48
Wood Shop, Finish Room	Black and Decker Moisture Gaurd	1 X 1 qt.	U	Air Motor Oil	0.48
Wood Shop, Finish Room	Parks Paint Thinner	2 X 1 gal.	U	Petroleum Distillates	0.48
Wood Shop, Finish Room	Donjer Suede Tex	5 X 1 pint	U	Aliphatic Naphtha, Methyl Ethyl Ketoxime	0.48
Wood Shop, Finish Room	MinWax Wipe On Paste Fnishing Wax	2 X 1 lb	U	Aliphatic hydrocarbons	0.48
Wood Shop, Finish Room	Mini Wax Wood Finish	10 X 1 qt.	U	Aliphatic hydrocarbons	0.48
Wood Shop, Finish Room	EZ Cast Polyester Coating Resin	2 X 1 gal.	U/UO	Styrene monomer	0.48
Wood Shop, Finish Room	Propane Fuel	6 X 14.1 oz.	U	Propane	0.48
Wood Shop, Finish Room	Red Devil Spray/Metallic	1 X 11 oz.	U	Propane, Butane, Heptane, V.M. and P. Naphtha, Toluene, Acetone, Titanium Dioxide, 2-Butoxyelhanol	0.48
Wood Shop, Finish Room	W.E.P. Resinal Polyester Resin	2 X 1 gal.	U	Styrene, Di-methyl aniline	0.48
Wood Shop, Finish Room	RaeCo Paint Thinner	1 X 1 gal.	U	Toluene, Naptha (petroleum), hydrated heavy benzene	0.48
Wood Shop, Finish Room	WatCo Teak Oil Finish	1 X 1 pint	U	Mineral spirits	0.48
Wood Shop, Finish Room	Olympic Icon - Satin	2 X 1 gal.	U	Naptha (petroleum), hydrated heavy, Stoddard solvent, 2-butanone oxime, bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate, 2-ethylhexonic acid, Zirconium salt	0.48
Wood Shop, Finish Room	Ace Royal Touch Enamel	2 X 1 gal.	U	Titanium Dioxide, Nepheline syenite, Limestone, Palygorskite	0.48
Wood Shop, Finish Room	Valspar Ex/Interior	2 X 1 gal.	U	Titanium Dioxide, Ester-Alcohol, Butyl Acrylate	0.48
Wood Shop, Finish Room	Royal Interiors	1 X 1qt.	UO	Titanium Dioxide, Polymer, Sodium, Potassium, Aluminum, Silicate	0.48

Notes:
UO - Unopened Container.
U - Used Container.
D - Deteriorated Chemicals - none noted for 2016 inventory.

Table 1 (cont.)
Inventory and Use Evaluation for Products Containing Volatile Organic Compounds (VOCs)
for Elmira High School - Elmira City School District
Conducted December 27, 2017

Location	Product Description	Quantity X Volume	Condition	Chemical Ingredients	PID 3000 11.7 eV Lamp / Background 0.0ppm
Wood Shop, Finish Room	Loc Tite Spray adhesive	1 X 13.5 oz	U	Hyrocarbon propellante, hexane, acetone	0.48
Wood Shop, Finish Room	Rust-oleum paint/primer	1 X 12 oz	U	Acetone, xylene	0.48
Wood Shop, Finish Room	3M Super 77 Adhesive	1 X 16.75 oz	U	Acetone, propane, 2-methylpentane, cyclohexane, 3-methylpentane, 2,3-Dimethhylbutane, 2,2-Dimethylbutane, Hhexane	0.48
Wood Shop, Finish Room	Bulls Eye Shellac Sealer/Finish	1 X 12 oz.	U	Shellac, Acetone, Propane, Isobutane, Ethanol, Isopropanol, Methanol	0.48
Wood Shop, Finish Room	Now Spray Paint	1 X 10 oz.	U	Ketones, Toluene, Aliphatic Hydrocarbons	0.48
Wood Shop, Finish Room	Miracle Spray Enamel	1 X 11 oz.	U/UO	Keytones, Toluene, Xylene	0.48
Wood Shop, Finish Room	Min Wax Fast Drying Polyurethane	2 X 11.5 oz.	U/UO	Keytone, Aliphatic Hydrocarbons	0.48
Wood Shop, Finish Room	Valspar Color Radiance	1 X 1 oz.	U	Acetone, Butyl Acetate, Ethylene Glycol Monopropyl Ether, Isobutyl Acetate	0.48
Wood Shop, Finish Room	Painters Touch	2 X 12 oz.	U	Toluene, Xylene, Acetone	0.48
Wood Shop, Finish Room	Elmer's Spray Adhesive	1 X 10 oz.	U/UO	Acetone, Propane, Isobutane, 2-Methylpentane, Pentane, Dimethyl Ether	0.48
Wood Shop, Finish Room	Krylon Workable Fixatif	2 X 11 oz.	U	Acetone, Isobutane, butyle-alcohol, and PM Acetate	0.48
Wood Shop, Finish Room	Colorplace Spray Paint	2 X 10 oz.	U	Aliphatic Hydrocarbons, Ketones, and Toluene	0.48
Wood Shop, Finish Room	Cabot Gloss Varnish	1 X 11.5, 1 X 1 qt.	U/UO	Petroleum Distillates, Ecetone, Xylene, Toluene, Ethylbenzene	0.48
Wood Shop, Finish Room	Krylon Gloss	1 X 12 oz.	U	Acetone, Propane, Toluene, Aliphatic Hydrocarbons, Butane, Trimethylbenzenes	0.48
Wood Shop, Finish Room	Krylon Flourescent	1 X 11 oz.	UO	Acetone, Propane, Butane, Xylene, Aliphatic Hydrocarbons, Ethylbenzene, Toluene, Hexane	0.48
Wood Shop, Finish Room	Krylon Color Max	2 X 11 oz.	U/UO	Acetone, Toluene, Aliphatic Hydrocarbons, Propane, Butane, Trimethyl-benzenes	0.48
Wood Shop, Finish Room	Interlux Clipper Clean Varnish	1 X 1 qt.	U	Aliphatic Urethane Alkyd, Mineral Spirits, High Flash Naptha	0.48
Wood Shop, Finish Room	Watco Danish Oil	1 X 1 pt., 5 X 1 qt., 3 X 1 gal.	U	Petroleum Distallates	0.48
Stage	Ace Poly-Finish	1 X 1 qt., 1 X 1 gal.	U	Ethylene Glycol	0.01
Stage	Sherwin Williams Ext	1 X 1 gal.	U	Acrylic Polymer, Kaolin, Propylene Glycol, Zinc Oxide, Heavy Paraffinic Oil, Cristobalite	0.01
Stage	Ace Royal Interior	12 X 1 gal., 5 X 1 pt.	U/UO	Vinyl Acrylic, Titanium Dioxide, Anhydrous Aluminum Silicate, Propylene Glycol	0.01
Stage	Ace Royal Accent	3 X 1 gal.	U	Sodium Potassium Aluminum Silicate, Acrylic Polymer, Ethylene Glycol, Ester Alcohol	0.01
Stage	Ace Premium Royal	1 X 1 gal., 1 X 1 qt.	U	Titanium Dioxide, Acrylic Copolymer, Crystalline Silica, Anyhdrous Aluminum Silicate	0.01
Stage	Ace Terpentine	1 X 1 qt.	U	Terpentine	0.01
Stage	Olymipic Exterior	2 X 1 qt.	U	Acrylic Resin, Ethylene Glycol, Isobutyrate Ester, Octylisothiazolone	0.01
Stage	Glidden Professional	2 X 1 gal.	U	2 - Propanoic Acid, Butylester, Propanoic Acid	0.01
Stage	Dutch Boy Dirt Fighter	1 X 1 gal.	U	Vinyl Polymer, Titanium Dioxide, Kaolin, Calcined Clay, Ethylene Glycol, Cristobalite, Vinyl Acetate	0.01
Stage	Pure Pure White	1 X 1 qt.	U	Oil Enamel N.L.	0.01
Stage	Rosco Flurescent	1 X 1 qt.	UO	Calcium Carbonate, Vinyl Acrylic Copolymer, Propylene Glycol	0.01
Stage	Color place exterior	3 X 1 gal.	U	Latax	0.01
Stage	Ace spray enamel, Krylon fusion, interior, exterior, sprament, painters touch, America Accent, Color Place	15 X 10 oz	U	Aliphatic Hydrocarbons, Ketones, and Toluene	0.01
Stage	Painter's Touch	1 X 8 fl. oz.	U	Latex Paint	0.01
Stage	Guardian Interior	1 X 1 gal.	U	Vinyl Acetate, Ethylene Copolymer	0.01
Stage	Sear's Best Weather Beater	1 X 1 gal.	U	Acrylic Polymer, 2-(2-butoxyethoxy)ethanol	0.01
Stage	Clark & Kensington Paint & Primer	8 X 29 oz.	U/UO	Sodium Potassium, Alluminum Silicate, Silicon Dioxide, Ethyl Glycol	0.01
Stage	Min Wax Wood Finish	1 X 32 oz.	U	Alphatic Hydrocarbons	0.01
Room 129 Chemical Storage	Buckeye True Seven	1 X 1 qt.	U	Alcohol ethoxylate	0.00
Room 129 Chemical Storage	Buckeye Terminator	1 X 2 L	U	Octyl Decyl Dimethyl Ammonium Chloride, Dioctyl Dimethyl Ammonium Chloride, Didecyl Dimethyl Ammonium Chloride, Alkyl Dimethyl Benzyl Ammonium Chloride	0.00
Room 129 Chemical Storage	Simoniz Pre Spot	2 X 1 gal.	U	Water, Isopropyl Alcohol, Sodium Octane Sulfonate	0.00
Room 129 Chemical Storage	Spartan Furniture Polish	1 X 18 oz.	U	Mineral Seal Oil, Isopropanolamine Salt, of Dodecylbenze Sulonate, Ethylene Glyocol	0.00
Room 129 Chemical Storage	Simoniz Flush Away	1 X 1 gt.	U	Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethyl benzyl ammonium chloride, Alkyl (68% C12, 32% C14) dimethyl ethylbenzyl ammonium chloride, Hydrogen Chloride	0.00
Room 129 Chemical Storage	System Clean Vandalism Mark Remover	1 X 16 oz.	U	Toluene, Acetone, Methyl Ethyl Ketone, Ethylene Glycol n-Butyl Ether, Propane	0.00
Room 129 Chemical Storage	Allstar Deoderizor	1 X 10 oz.	U	Propane, N-Butane	0.00

Notes:
UO - Unopened Container.
U - Used Container.
D - Deteriorated Chemicals - none noted for 2016 inventory.



LEGEND:

▭ DESIGNATED AREAS BELOW GRADE

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

EHS FLOOR PLAN

ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.
CITY OF ELMIRA
CHEMUNG CO., N.Y.

PROJ. No.:	28014	DATE:	02/16/2016	SCALE:	N.T.S.	DWG. NO.	28014111	FIGURE	1

ATTACHMENT 5

ROOM 127 INDOOR AIR ANALYSIS RESULTS, LABORATORY DATA (PROVIDED ON CD) AND DATA USABILITY SUMMARY REPORT (DUSR)

Table 1

Elmira City School District - Elmira High School
Room 127 Indoor Air Analytical Data for 2009-2017
TO-15 Volatile Organic Compounds (VOCs)

Parameter	CAS#	December 2009 Sub-Slab Soil Vapor (ug/m3)		December 2009 Indoor Air (ug/m3)		December 2010 Indoor Air (ug/m3)		December 2010 Indoor Air (Duplicate) (ug/m3)		December 2011 Indoor Air (ug/m3)		December 2011 Indoor Air (Duplicate) (ug/m3)		December 2012 Indoor Air (ug/m3)		December 2012 Indoor Air (Duplicate) (ug/m3)		December 2013 Indoor Air (ug/m3)		December 2013 Indoor Air (Duplicate) (ug/m3)		December 2014 Indoor Air (ug/m3)		December 2014 Indoor Air (1) (Duplicate) (ug/m3)		December 2015 Indoor Air (ug/m3)		December 2015 Indoor Air (Duplicate) (ug/m3)		December 2016 Indoor Air (ug/m3)		December 2016 Indoor Air (Duplicate) (ug/m3)		December 2017 Indoor Air (ug/m3)		December 2017 Indoor Air (Duplicate) (ug/m3)	
Volatile Organic Compounds:																																					
1,1,1-Trichloroethane	71-55-6	1.6	j	<0.83		<0.83		<0.83		<0.83		<0.83		<.83		<.83		<0.83		<0.83		<0.82		NA		<0.109		<0.109		<0.109		<0.109		<0.109		<0.109	
1,1,2,2-Tetrachloroethane	79-34-5	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		NA		<1.37		<1.37		<1.37		<1.37		<1.37		<1.37	
1,1,2-Trichloroethane	79-00-5	<0.83		<0.83		<0.83		<0.83		<0.83		<0.83		<0.83		<0.83		<0.83		<0.83		<0.82		NA		<1.09		<1.09		<1.09		<1.09		<1.09		<1.09	
1,1-Dichloroethane	75-34-3	1.3		<0.62		<0.62		<0.62		<0.62		<0.62		<0.62		<0.62		<0.62		<0.62		<0.61		NA		<0.809		<0.809		<0.809		<0.809		<0.809		<0.809	
1,1-Dichloroethene	75-35-4	<0.60		0.69		<0.60		<0.60		<0.60		<0.60		<0.60		<0.60		<0.60		<0.60		<0.59		NA		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079	
1,2,4-Trichlorobenzene	120-82-1	<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		NA		<1.48		<1.48		<1.48		<1.48		<1.48		<1.48	
1,2,4-Trimethylbenzene	95-63-6	4.2	j	<0.75		1		1.2		0.9		0.75		0.85		0.90		0.7	J	<0.75		4.7		NA		<0.983		<0.983		<0.983		<0.983		<0.983		<0.983	
1,2-Dibromoethane	106-93-4	<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		NA		<1.54		<1.54		<1.54		<1.54		<1.54		<1.54	
1,2-Dichlorobenzene	95-50-1	<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.90		NA		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2	
1,2-Dichloroethane	107-06-2	0.45	J	<0.62		<0.62		<0.62		1.1		1.1		<0.62		<0.62		<0.62		<0.62		<0.61		NA		<0.809		<0.809		<0.809		<0.809		<0.809		<0.809	
1,2-Dichloropropane	78-87-5	<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.69		NA		<0.924		<0.924		<0.924		<0.924		<0.924		<0.924	
1,3,5-Trimethylbenzene	108-67-8	0.85	j	<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		1.6		NA		<0.983		<0.983		<0.983		<0.983		<0.983		<0.983	
1,3-Butadiene	106-99-0	<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.33		NA		<0.442		<0.442		<0.442		<0.442		<0.442		<0.442	
1,3-Dichlorobenzene	541-73-1	<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.90		NA		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2	
1,4-Dichlorobenzene	106-46-7	<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.90		NA		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2	
1,4-Dioxane	123-91-1	<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		NA		<0.721		<0.721		<0.721		<0.721		<0.721		<0.721	
2,2,4-Trimethylpentane	540-84-1	0.57	j,J	<0.71		<0.71		<0.71		0.52	j,J	0.47	J	<0.71		<0.71		<0.71		<0.71		1.2		NA		<0.934		<0.934		<0.934		<0.934		<0.934		<0.934	
4-Ethyltoluene	622-96-8	1	j	<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		<0.75		1.3		NA		<0.983		<0.983		<0.983		<0.983		<0.983		<0.983	
Acetone	67-64-1	130		14		13	j	8.1	j	49		52		43		56		12		17		560		NA		3.06		3.23		<2.38		<2.38		5.49		4.61	
Allyl chloride	107-05-1	<0.48		<0.48		<0.48		<0.48		<0.48		<0.48		<0.48		<0.48		<0.48		<0.48		<0.47		NA		<0.626		<0.626		<0.626		<0.626		<0.626		<0.626	
Benzene	71-43-2	1.4	j	0.42	J	0.71		0.65		1.5	j	1.4		0.78		0.71		0.55		0.65		14		NA		<0.639		<0.639		<0.639		<0.639		<0.639		<0.639	
Benzyl chloride	100-44-7	<0.88		<0.88		<0.88		<0.88		<0.88		<0.88		<0.88		<0.88		<0.88		<0.88		<0.86		NA		<1.04		<1.04		<1.04		<1.04		<1.04		<1.04	
Bromodichloromethane	75-27-4	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		NA		<1.34		<1.34		<1.34		<1.34		<1.34		<1.34	
Bromoform	75-25-2	<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		NA		<2.07		<2.07		<2.07		<2.07		<2.07		<2.07	
Bromomethane	74-83-9	<0.59		<0.59		<0.59		<0.59		<0.59		<0.59		<0.59		<0.59		<0.59		<0.59		<0.58		NA		<0.777		<0.777		<0.777		<0.777		<0.777		<0.777	
Carbon disulfide	75-15-0	1.2		<0.47		<0.47		<0.47		<0.47		<0.47		<0.47		0.47	J	<0.47		<0.47		1.3		NA		<0.623		<0.623		<0.623		<0.623		<0.623		<0.623	
Carbon tetrachloride	56-23-5	<0.96		0.32		<0.26		<0.26		<0.26		<0.26		0.90		0.90		<0.26		<0.26		<0.25		NA		0.503		0.522		0.566		0.572		0.421		0.447	
Chlorobenzene	108-90-7	<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.70		<0.69		NA		<0.921		<0.921		<0.921		<0.921		<0.921		<0.921	
Chloroethane	75-00-3	2.4		<0.40		<0.40		<0.40		<0.40		<0.40		<0.40		<0.40		<0.40		<0.40		<0.40		NA		<0.528		<0.528		<0.528		<0.528		<0.528		<0.528	
Chloroform	67-66-3	7.9		0.94		<0.74		<0.74		0.74		0.74		<0.74		<0.74		<0.74		<0.74		0.63	J	NA		<0.977		<0.977		<0.977		<0.977		<0.977		<0.977	
Chloromethane	74-87-3	<0.31		0.55		<0.31		<0.31		<0.31		<0.31		<0.31		<0.31		1.0		1.2		1.3		NA		1.09		1.11		0.975		1.07		0.938		0.948	
cis -1,2-Dichloroethene	156-59-2	300		<0.60		0.44	J	0.52	J	2.5	j	1.3	j	<0.60		<0.60		<0.60		<0.60		0.40	J	NA		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079	
cis -1,3-Dichloropropene	10061-01-5	<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.68		NA		<0.908		<0.908		<0.908		<0.908		<0.908		<0.908	
Cyclohexane	110-82-7	<0.52		<0.52		<0.52		0.59		<0.52		<0.52		<0.52		<0.52		<0.52		<0.52		3.0		NA		<0.688		<0.688		<0.688		<0.688		<0.688		<0.688	
Dibromochloromethane	124-48-1	<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		<1.3		NA		<1.7		<1.7		<1.7		<1.7		<1.7		<1.7	
Ethanol	64-17-5	ND*		7.9*	JN	ND*		ND*		570		550		1100		980		270		290		200		NA		15.6		13.4		27.1		26		26		25.8	
Ethyl acetate	141-78-6	<0.92		2.1		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		<0.92		4.0		NA		<1.8		<1.8		<1.8		<1.8		<1.8		<1.8	
Ethylbenzene	100-41-4	2.6	j	<0.66		<0.66		0.44	J	0.71		0.62	J	0.49	J	<0.66		<0.66		<0.66		2.3		NA		<0.869		<0.869		<0.869		<0.869		<0.869		<0.869	
Freon 11	75-69-4	0.86		0.91		<0.86		<0.86		1.5	j	1.5	j	3.1	J	3.3	J	1.3		1.4		1.7		NA		1.21		1.26		1.48		1.54		1.23		1.57	
Freon 113	76-13-1	<1.2		4.8		<1.2		<1.2		<1.2		<1.2		1.9	J	1.9	J	0.93	J	0.78	J	<1.1		NA		<1.53		<1.53		<1.53		<1.53		<1.53		<1.53	
Freon 114	76-14-2	<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.1		<1.0		NA		<1.4		<1.4		<1.4		<1.4		<1.4		<1.4	
Freon 12	75-71-8	1800		12		<0.75		<0.75		24	j	56	j	15		16		6.9		7.6		2.7		NA		1.87	j	3.47		4.27		6.08		6.23		6.23	
Heptane	142-82-5	3.9		6.4		1.5	j	1	j	1.4		<0.62		<0.62		0.83		3.5		3.5		19		NA		<0.82		<0.82		0.832		<0.82		<0.82		<0.82	
Hexachloro-1,3-butadiene	87-68-3	<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		<1.6		NA		<2.13		<2.13		<2.13		<2.13		<2.13		<2.13	
Hexane	110-54-3	<0.54		<0.54		0.68		0.79		<0.54		<0.54		<0.54		0.57		<0.54		<0.54		34		NA		1.27		<0.705		<0.705		<0.705		<0.705		<0.705	
Isopropyl alcohol	67-63-0	<0.37		11		15		15		<0.37		<0.37		24	J	25	J	20		25		<0.37		NA		1.84		1.94		1.7		1.56		2.53		2.78	
m&p-Xylene	179601-23-1	7.6	j	<1.3		1.1	J	1.1	J	1.7		1.5		1.4		<1.3		0.84	J	1.1	J	7.2		NA		<1.74		<1.74		<1.74		<1.74		<1.74		<1.74	
Methyl Butyl Ketone	591-78-6	<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		NA		<2.05		<2.05		<0.820		<0.820		<0.820		<0.820	
Methyl Ethyl Ketone	78-93-3	5.5		0.51	J	<0.90		<0.90		3.1		<0.90		<0.90		<0.90		2.4		2.4		50		NA		<1.47		<1.47		<1.47		<1.47		<1.47		<1.47	
Methyl Isobutyl Ketone	108-10-1	1.8	j	<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		<1.2		1.8		NA		<2.05		<2.05		<2.05		<2.05		<2.05		<2.05	
Methyl tert-butyl ether	1634-04-4	<0.55		<0.55		<0.55		<0.55		<0.55		<0.55		<0.55	J	<0.55	J	<0.55		<0.55		<0.54		NA		<0.721		<0.721		<0.721		<0.721		<0.721		<0.721	
Methylene chloride	75-09-2	0.46	J	<0.53		<0.53		0.39	J	<0.53		0.78	j	1.6	J	1.3	J	1.0		0.95		3.50		NA		<1.74		<1.74		3.32		<1.74		<1.74		<1.74	
o-Xylene	95-47-6	2.5	j	<0.66		<0.66		<0.66		0.57	J	0.49	J	0.44		<0.66		<0.66		<0.66		3.0		NA		<0.869		<0.869		<0.869		<0.869		<0.869		<0.869	
Propylene	115-07-1	<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		NA		NA		NA		NA		NA		NA		NA	
Styrene	100-42-5	1.3	j	<0.65		<0.65		<0.65		0.52	J	0.48	J	<0.65		<0.65		<0.65		<0.65		7.2		NA		<0.852		<0.852		<0.852		<0.852		<0.852		<0.852	
Tert Butyl alchohol (TBA)	75-65-0	ND*		ND*		ND*		ND*		ND*		ND*		<0.46		1.1		<0.46		<0.46		15		NA		<1.52		<1.52		<1.52		<1.52		<1.52		<1.52	
Tetrachloroethene	127-18-4	2.6	j	<1.0		<1.0		<1.0		16	j	4.3	j	<1.0		<1.0		<1.0		<1.0		<1.0		NA		<0.136		<0.136		<0.136		<0.136		<0.136		<0.136	
Tetrahydrofuran	109-99.9	<0.45		<0.45		<0.45		<0.45		<0.45		<0.45		<0.45		<0.45		<0.45		<0.45		<0.44		NA		<1.47		<1.47		<1.47		<1.47		<1.47		<1.47	
Toluene	108-88-3	29		6.6		2.1	j	3.1	j	3.8		3.2		2.6		2.3		1.8		2.1		43		NA		1.18		<0.754		1.02		0.81		0.81		0.806	
trans-1,2-Dichloroethene	156-60-5	21	J	<0.60		<0.60		<0.60		<0.60	j	<0.60	j	<0.60		<0.60		<0.60		<0.60		<0.59		NA		<0.793		<0.793		<0.793		<0.793		<0.793		<0.793	
trans-1,3-Dichloropropene	10061-02-6	<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.69		<0.68		NA		<0.908		<0.908		<0.908		<0.908		<0.908		<0.908	
Trichloroethene	79-01-6	2100		2.4		3.3		2.8		4.8	j	4.5		1.8		1.7		1.3		1.7		2.1		NA		<0.107		<0.107		<0.107		<0.107		<0.107		<0.107	
Vinyl Acetate	108-05-4	<0.54		<0.54		<0.54		<0.54		<0.54		<0.54		<0.54	J	<0.54	J	<0.54		<0.54		<0.53		NA		NA		NA		NA		NA		NA		NA	
Vinyl Bromide	593-60-2	<0.67		<0.67		<0.67		<0.67		<0.67		<0.67		<0.67		<0.67		<0.67		<0.67		<0.66		NA		<0.874		<0.874		<0.874		<0.874		<0.874		<0.874	
Vinyl Chloride	75-01-4	0.55		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<1.0		<1.0		<0.10		NA		<0.051		<0.051		<0.051		<0.051		<0.051		<0.051	

Notes:

<	Indicates the parameter was not detected at the reporting limit.
B	Analyte was detected in the associated Method Blank.
j	(From Data Validation Report) Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.
J	Analyte detected at a level less than the reporting limit and greater than or equal to the method detection limit. Concentrations within this range are estimated.
*	Analyzed as a TIC.
NA	Not available.
(1)	2014 Duplicate sample provided no analytical results due to malfunction of the canister during transportation to the laboratory.

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January 12, 2018

Ms. Amanda Castignetti, EIT
Environmental Engineer
Sterling Environmental Engineering, P.C.
24 Wade Road
Latham, New York 12110

Re: Data Validation Report
Elmira High School
December 2017 Air Sampling Events

Dear Ms. Castignetti:

The QA/QC review and data usability summary report (DUSR) are attached to this letter for the above referenced project sampling event. The data for Alpha Analytical SDG: L1747754 are acceptable with some minor issues that are identified and discussed in the DUSR and QA/QC review. There are no data that are qualified as rejected, unusable (R) in the data pack.

A list of common data validation acronyms is attached to this letter to assist you interpreting the validation summaries. If you have any questions concerning the work performed, please contact me at (518) 348-6995. Thank you for the opportunity to assist Sterling Environmental Engineering, P.C.

Sincerely,
Alpha Geoscience

Donald Anné

Donald Anné
Senior Chemist

DCA:dca
attachments

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Data Validation Acronyms

AA	Atomic absorption, flame technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene
CCB	Continuing calibration blank
CCC	Calibration check compound
CCV	Continuing calibration verification
CN	Cyanide
CRDL	Contract required detection limit
CRQL	Contract required quantitation limit
CVAA	Atomic adsorption, cold vapor technique
DCAA	2,4-Dichlophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine
ECD	Electron capture detector
FAA	Atomic absorption, furnace technique
FID	Flame ionization detector
FNP	1-Fluoronaphthalene
GC	Gas chromatography
GC/MS	Gas chromatography/mass spectrometry
GPC	Gel permeation chromatography
ICB	Initial calibration blank
ICP	Inductively coupled plasma-atomic emission spectrometer
ICV	Initial calibration verification
IDL	Instrument detection limit
IS	Internal standard
LCS	Laboratory control sample
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
MSA	Method of standard additions
MS/MSD	Matrix spike/matrix spike duplicate
PID	Photo ionization detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
QA	Quality assurance
QC	Quality control
RF	Response factor
RPD	Relative percent difference
RRF	Relative response factor
RRF(number)	Relative response factor at concentration of the number following
RT	Retention time
RRT	Relative retention time
SDG	Sample delivery group
SPCC	System performance check compound
TCX	Tetrachloro-m-xylene
%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation

Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II

U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank.

R = Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.

N = Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.

J = Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.

J- = Analyte is present. Reported value may be biased low and associated with a higher level of uncertainty than is normally expected with the analytical method.

J+ = Analyte is present. Reported value may be biased high andassociated with a higher level of uncertainty than is normally expected with the analytical method.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.

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Data Usability Summary Report for Alpha Analytical, SDG: No: L1747754

2 Indoor Air Samples
Collected December 27, 2017

Prepared by: Donald Anné
January 12, 2018

The data package contain the documentation required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appeared legible and complete. The data pack contained 2 indoor air samples analyzed for TO-15 volatiles.

The overall performances of the analyses are acceptable. Alpha Analytical did fulfill the requirements of the analytical methods. Examples of calculations were checked and found to be acceptable. The quantitation of checked results were found to be correct.

The following samples contained results that were qualified:

- The positive volatile results for isopropanol were qualified as "estimated" (J) in samples IA-A and IA-B because %RSD for isopropanol was above the allowable maximum in the associated initial calibration.

All data are considered usable, with estimated (J) data associated with a higher level of quantitative uncertainty. Detailed information on data quality is included in the data validation review.

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QA/QC Review of Method TO15 Volatiles Data for Alpha Analytical, SDG: No: L1747754

2 Indoor Air Samples
Collected December 27, 2017

Prepared by: Donald Anné
January 12, 2018

Holding Times: The samples were analyzed within the EPA recommended holding times.

GC/MS Tuning and Mass Calibration: The BFB tuning criteria were within control limits.

Initial Calibration: The average RRFs for target compounds were above the allowable minimum (0.010), as required.

The %RSD for isopropanol was above the allowable maximum (30%) for AIRLAB15 on 12-22-17. Positive results for isopropanol should be considered estimated (J) in associated samples.

Continuing Calibration: The CCRFs for target compounds were above the allowable minimum (0.010) and the %Ds were below the allowable maximum (30%), as required.

Blanks: The analysis of the method blank reported target compounds as not detected.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Laboratory Duplicate: The relative percent differences for applicable compounds were below the allowable maximum (25%) for air duplicate sample IA-1DUP, as required.

Laboratory Control Sample: The percent recoveries for target compounds were within QC limits for air samples WG1078148-3 and WG1078229-3.

Compound ID: Checked compounds were within GC quantitation limits. The mass spectra for detected compounds contained the primary and secondary ions, as outlined in the method.

Cannister Pressure: The laboratory reported out and in pressures were acceptable as per the method.

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Initial Calibration Summary
Form 6

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Ical Ref**	: ICAL14299
Calibration dates	: 12/22/17 16:49 12/22/17 21:22		

Calibration Files

0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D

50 =r154822.D 100 =r154823.D

		Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
1)	I	bromochloromethane	----------------ISTD--------------------									
2)		chlorodifluoromethane	1.180	1.119	1.106	1.059	1.030	0.944	0.874	0.801	1.0141	12.87
3)		propylene	0.889	0.817	0.808	0.751	0.708	0.628	0.562	0.495	0.7074	19.25
4)		propane	1.091	0.960	0.875	0.837	0.807	0.737	0.674	0.614	0.8244	18.74
5)		dichlorodifluoromethane	1.244	1.201	1.193	1.158	1.099	0.999	0.911	0.819	1.0780	14.19
6)	C	chloromethane	0.718	0.690	0.679	0.654	0.631	0.564	0.514	0.464	0.6141	14.79
7)		Freon-114	1.551	1.501	1.486	1.419	1.380	1.240	1.103	0.920	1.3250	16.63
8)	C	methanol			0.335	0.280	0.266	0.233	0.218	0.198	0.2550	19.46
9)	C	vinyl chloride	0.638	0.640	0.623	0.611	0.591	0.535	0.505	0.480	0.5778	10.86
10)	C	1,3-butadiene	0.625	0.590	0.588	0.565	0.547	0.498	0.466	0.432	0.5389	12.46
11)		butane	1.279	1.199	1.152	1.061	0.974	0.920	0.766	0.658	1.0012	21.46
12)	C	acetaldehyde		0.398	0.395	0.327	0.311	0.310	0.263	0.210	0.3164	21.20
13)	C	bromomethane	0.554	0.559	0.539	0.519	0.505	0.456	0.426	0.403	0.4953	12.07
14)	C	chloroethane	0.342	0.321	0.325	0.305	0.292	0.265	0.246	0.235	0.2913	13.38
15)		ethanol			0.528	0.499	0.476	0.428	0.383	0.338	0.4419	16.39
16)		dichlorofluoromethane	1.158	1.137	1.134	1.071	1.026	0.912	0.816	0.733	0.9984	16.07
17)	C	vinyl bromide	0.617	0.590	0.589	0.569	0.557	0.504	0.452	0.398	0.5345	14.29
18)	C	acrolein		0.297	0.284	0.272	0.270	0.252	0.242	0.233	0.2642	8.67
19)		acetone	1.039	0.871	0.833	0.676	0.643	0.603	0.516	0.427	0.7010	28.71
20)	C	acetonitrile	0.703	0.661	0.591	0.559	0.547	0.483	0.435	0.384	0.5454	19.93
21)		trichlorofluoromethane	0.949	0.937	0.929	0.890	0.862	0.763	0.688	0.627	0.8306	14.80
22)		isopropyl alcohol	1.628	1.263	1.135	0.948	0.909	0.857	0.750	0.633	1.0153	31.33#
23)	C	acrylonitrile	0.618	0.551	0.547	0.529	0.523	0.481	0.456	0.429	0.5167	11.65
24)		pentane	1.314	1.361	1.351	1.246	1.199	1.066	0.932	0.791	1.1575	18.09
25)		ethyl ether	1.061	1.019	0.982	0.945	0.927	0.834	0.757	0.684	0.9012	14.60
26)	C	1,1-dichloroethene	0.836	0.846	0.818	0.797	0.766	0.694	0.640	0.589	0.7483	12.89
27)		tertiary butyl alcohol		1.076	1.072	1.009	0.997	0.907	0.850	0.799	0.9588	11.31
28)	C	methylene chloride		0.840	0.850	0.800	0.776	0.697	0.628	0.559	0.7358	15.07
29)	C	3-chloropropene	1.136	1.022	0.984	0.914	0.895	0.800	0.717	0.633	0.8875	18.65
30)	C	carbon disulfide	2.014	1.887	1.884	2.075	1.899	1.734	1.538	1.266	1.7870	15.00
31)		Freon 113	1.239	1.094	1.103	1.190	1.028	0.922	0.810	0.697	1.0104	18.58
32)		trans-1,2-dichloroethene	1.193	1.153	1.150	1.129	1.123	1.003	0.926	0.827	1.0631	12.23
33)	C	1,1-dichloroethane	1.456	1.412	1.412	1.359	1.348	1.209	1.107	0.990	1.2866	12.99
34)	C	MTBE	1.911	1.894	1.895	1.875	1.878	1.718	1.606	1.484	1.7826	9.09
35)	C	vinyl acetate	2.155	2.043	2.052	2.061	2.090	1.898	1.788	1.590	1.9596	9.66
36)	C	2-butanone	2.169	2.071	2.053	1.984	1.976	1.764	1.632	1.447	1.8872	13.16
37)		cis-1,2-dichloroethene	0.985	1.001	1.003	0.979	0.971	0.875	0.801	0.719	0.9168	11.71
38)		Ethyl Acetate	0.311	0.306	0.290	0.278	0.280	0.251	0.235	0.209	0.2699	13.19

Initial Calibration Summary
Form 6

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Ical Ref**	: ICAL14299
Calibration dates	: 12/22/17 16:49 12/22/17 21:22		

Calibration Files
0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

		Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
39)	C	chloroform	1.267	1.228	1.203	1.171	1.138	1.032	0.960	0.871	1.1087	12.65
40)		Tetrahydrofuran	1.281	1.235	1.275	1.261	1.259	1.134	1.039	0.924	1.1760	11.24
41)		2,2-dichloropropane	0.972	0.943	0.952	0.946	0.934	0.858	0.806	0.745	0.8944	9.20
42)	C	1,2-dichloroethane	0.807	0.809	0.787	0.760	0.750	0.661	0.610	0.550	0.7167	13.63
43)	I	1,4-difluorobenzene	----------------ISTD--------------------									
44)	C	hexane	0.621	0.606	0.589	0.580	0.577	0.515	0.475	0.435	0.5498	12.18
45)		diisopropyl ether	0.284	0.285	0.280	0.278	0.277	0.249	0.241	0.227	0.2650	8.51
46)		tert-butyl ethyl ether	0.948	0.961	0.960	0.962	0.954	0.857	0.816	0.766	0.9031	8.69
47)	s	1,2-dichloroethane-D4	0.216	0.214	0.213	0.214	0.215	0.205	0.198	0.193	0.2086	4.18
48)	C	1,1,1-trichloroethane	0.453	0.417	0.427	0.431	0.426	0.384	0.363	0.345	0.4058	9.24
49)		1,1-dichloropropene	0.475	0.469	0.459	0.466	0.464	0.425	0.411	0.390	0.4451	7.15
50)	C	benzene	1.158	1.074	1.065	1.052	1.040	0.945	0.916	0.871	1.0150	9.41
51)		thiophene	0.534	0.502	0.508	0.476	0.470	0.472	0.463	0.441	0.4834	6.07
52)	C	carbon tetrachloride	0.368	0.357	0.355	0.361	0.370	0.336	0.324	0.317	0.3486	5.79
53)		cyclohexane	0.649	0.619	0.618	0.621	0.616	0.558	0.538	0.512	0.5914	8.27
54)		tert-amyl methyl ether	0.881	0.853	0.854	0.878	0.890	0.814	0.798	0.762	0.8412	5.42
55)		dibromomethane	0.334	0.331	0.322	0.317	0.313	0.279	0.266	0.246	0.3010	11.02
56)	C	1,2-dichloropropane	0.428	0.408	0.402	0.401	0.398	0.354	0.332	0.304	0.3783	11.36
57)		bromodichloromethane	0.531	0.523	0.517	0.541	0.550	0.498	0.483	0.462	0.5130	5.87
58)	C	1,4-dioxane	0.248	0.259	0.249	0.259	0.252	0.232	0.225	0.213	0.2419	6.98
59)	C	trichloroethene	0.424	0.411	0.401	0.398	0.401	0.355	0.348	0.329	0.3834	8.95
60)	C	2,2,4-trimethylpentane	2.011	1.981	1.964	1.953	1.927	1.724	1.610	1.475	1.8308	10.99
61)		methyl methacrylate	0.458	0.465	0.466	0.422	0.424	0.429	0.405	0.375	0.4306	7.37
62)		heptane	0.961	0.910	0.910	0.913	0.897	0.800	0.738	0.654	0.8478	12.54
63)	C	cis-1,3-dichloropropene	0.501	0.483	0.490	0.519	0.525	0.483	0.473	0.459	0.4916	4.57
64)	C	4-methyl-2-pentanone	1.065	1.011	1.046	1.049	1.046	0.928	0.856	0.777	0.9722	11.03
65)		trans-1,3-dichloropropene	0.459	0.448	0.448	0.481	0.488	0.451	0.446	0.429	0.4563	4.27
66)	C	1,1,2-trichloroethane	0.419	0.387	0.392	0.393	0.391	0.353	0.337	0.318	0.3736	9.10
67)	I	chlorobenzene-D5	----------------ISTD--------------------									
68)	C	toluene	7.165	6.891	6.735	6.720	6.622	6.087	5.725	5.198	6.3930	10.39
69)	s	toluene-D8	5.016	5.136	4.946	5.163	5.159	5.054	5.095	4.988	5.0697	1.61
70)		2-methylthiophene	5.785	5.683	5.709	5.056	5.084	5.296	5.075	4.627	5.2892	7.69
71)		1,3-dichloropropane	3.431	3.312	3.209	3.194	3.155	2.950	2.837	2.681	3.0960	8.15
72)		2-hexanone	5.388	5.447	5.500	5.252	5.348	4.858	4.455	3.912	5.0202	11.37
73)		3-methylthiophene	4.252	4.170	4.179	3.857	3.789	4.019	3.775	3.500	3.9426	6.53
74)		dibromochloromethane	2.561	2.510	2.651	2.758	2.858	2.677	2.564	2.382	2.6201	5.68
75)	C	1,2-dibromoethane	3.249	3.206	3.119	3.117	3.111	2.894	2.810	2.589	3.0119	7.53
76)		butyl acetate	0.670	0.718	0.756	0.782	0.807	0.771	0.764	0.727	0.7495	5.74

Initial Calibration Summary
Form 6

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Calibration dates : 12/22/17 16:49 12/22/17 21:22
Lab Number : L1747754
Project Number : 28014
Ical Ref : ICAL14299

Calibration Files

0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

		Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
77)		octane	2.450	2.497	2.430	2.436	2.428	2.262	2.192	2.065	2.3450	6.56
78)	C	tetrachloroethene	2.569	2.695	2.509	2.523	2.503	2.320	2.223	2.060	2.4250	8.55
79)		1,1,1,2-tetrachloroethane	2.127	2.117	2.079	2.147	2.152	2.021	1.892	1.711	2.0307	7.65
80)	C	chlorobenzene	5.549	5.304	5.207	5.179	5.170	4.790	4.577	3.980	4.9696	10.07
81)	C	ethylbenzene	8.805	8.700	8.567	8.502	8.484	7.804	7.229	6.553	8.0804	10.06
82)		2-ethylthiophene	5.087	5.103	5.041	4.676	4.681	4.797	4.541	4.110	4.7545	7.06
83)	C	m+p-xylene	7.120	7.147	7.113	7.037	6.899	6.286	5.725	4.965	6.5365	12.42
84)	C	bromoform	2.068	2.100	2.175	2.441	2.489	2.448	2.381	2.137	2.2799	7.73
85)	C	styrene	5.487	5.576	5.653	5.718	5.674	5.327	5.107	4.581	5.3904	7.15
86)	C	1,1,2,2-tetrachloroethane	5.046	4.958	4.927	4.921	4.869	4.479	4.141	3.402	4.5928	12.39
87)	C	o-xylene	7.192	7.247	7.072	7.104	6.947	6.388	5.718	4.726	6.5490	13.75
88)		1,2,3-trichloropropane	3.887	3.995	3.979	3.956	3.965	3.677	3.524	3.260	3.7805	7.13
89)		nonane	7.291	7.374	7.319	7.285	7.098	6.471	5.694	4.721	6.6564	14.65
90)	s	bromofluorobenzene	2.698	2.762	2.785	2.618	2.696	3.023	2.850	2.871	2.7879	4.54
91)	C	isopropylbenzene	9.425	9.251	9.147	9.311	9.082	8.513	7.837	6.842	8.6760	10.47
92)		bromobenzene	5.246	5.224	5.133	5.082	5.041	4.740	4.450	4.077	4.8741	8.61
93)		2-chlorotoluene	2.582	2.586	2.542	2.601	2.581	2.407	2.312	2.159	2.4711	6.60
94)		n-propylbenzene	2.959	3.011	2.972	2.974	3.010	2.836	2.713	2.467	2.8679	6.68
95)		4-chlorotoluene	2.660	2.600	2.528	2.581	2.566	2.386	2.355	2.131	2.4760	7.04
96)		4-ethyl toluene	1.021	1.046	1.028	1.057	1.044	0.958	0.874	0.751	0.9724	11.13
97)		1,3,5-trimethylbenzene	8.526	8.306	8.363	8.342	8.417	7.659	7.079	6.186	7.8597	10.63
98)		tert-butylbenzene	8.334	8.222	8.424	8.565	8.458	7.702	6.734	5.399	7.7296	14.46
99)		1,2,4-trimethylbenzene	8.070	8.253	8.299	8.399	8.294	7.470	6.583	5.196	7.5705	15.05
100)		decane	7.112	7.237	7.155	7.308	7.161	6.514	5.964	5.054	6.6882	12.03
101)	C	Benzyl Chloride	4.434	4.909	5.208	5.992	6.439	6.263	5.947	5.315	5.5633	12.67
102)		1,3-dichlorobenzene	5.447	5.392	5.495	5.367	5.357	5.025	4.691	4.045	5.1022	9.90
103)	C	1,4-dichlorobenzene	5.589	5.506	5.470	5.342	5.453	5.083	4.694	4.139	5.1593	9.79
104)		sec-butylbenzene	1.224	1.204	1.179	1.195	1.192	1.106	1.003	0.838	1.1178	11.97
105)		1,2,3-trimethylbenzene	6.359	6.324	6.262	6.212	6.158	6.052	5.424	4.373	5.8957	11.59
106)		p-isopropyltoluene	1.028	1.024	1.013	1.021	1.037	0.933	0.810	0.633	0.9373	15.48
107)		1,2-dichlorobenzene	5.011	5.055	5.024	4.991	4.892	4.717	4.489	4.038	4.7771	7.44
108)		n-butylbenzene	9.487	9.616	9.786	9.736	9.569	8.674	8.138	6.975	8.9975	11.15
109)		indan	6.544	6.804	6.702	6.613	6.646	6.642	6.207	5.434	6.4489	6.91
110)		indene	2.773	2.855	2.945	3.058	3.058	3.116	3.102	2.937	2.9807	4.15
111)	C	1,2-dibromo-3-chloropropane	1.726	1.852	1.868	2.127	2.192	2.062	2.050	1.911	1.9735	8.04
112)		undecane	7.439	8.164	8.202	8.322	8.212	7.317	6.681	5.570	7.4883	12.92
113)		1,2,4,5-tetramethylbenzene	1.020	1.067	1.070	1.118	1.121	1.054	0.966	0.791	1.0258	10.46
114)		dodecane	5.739	7.773	8.572	8.519	8.824	6.953	6.552	5.479	7.3014	17.99

Initial Calibration Summary
Form 6

Client	: **Sterling Environmental Eng**	**Lab Number**	: **L1747754**
Project Name	: **EHS 2017 IA**	**Project Number**	: **28014**
Instrument ID	: **AIRLAB15**	**Ical Ref**	: **ICAL14299**
Calibration dates	: **12/22/17 16:49 12/22/17 21:22**		

Calibration Files
0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

		Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
115)	C	1,2,4-trichlorobenzene	3.371	3.684	3.900	3.800	4.152	3.715	3.649	3.378	3.7060	6.98
116)		naphthalene	0.964	1.053	1.131	1.084	1.174	1.044	1.017	0.889	1.0443	8.68
117)		1,2,3-trichlorobenzene	3.213	3.521	3.586	3.642	3.876	3.477	3.518	3.260	3.5115	5.99
118)		benzothiophene	0.703	0.813	0.857	0.792	0.845	1.136	1.127	0.970	0.9054	17.45
119)	C	hexachlorobutadiene	3.109	3.070	3.113	3.223	3.329	2.875	2.822	2.456	2.9999	9.18
120)		2-methylnaphthalene			1.390	2.019	2.468	3.296	3.613	3.550	2.7225	MA 33.43#
121)		1-methylnaphthalene			2.387	2.731	3.150	3.792	4.101	3.909	3.3448	20.81

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Alpha Analytical

Laboratory Code: 11148

SDG Number: L1747754

Table of Contents

Table of Contents

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1747754-01	IA-A_122717	AIR	ELMIRA, NY	12/27/17 16:40	12/27/17
L1747754-02	IA-B_122717	AIR	ELMIRA, NY	12/27/17 17:15	12/27/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on December 21, 2017. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J Anderson Report Date: 01/03/18

Title: Technical Director/Representative

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 5975MSD (or equivalent)
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)
Purge time: 11 min

Columns (length x ID x df):
RTX-VMS 20m x 0.18mm x 1um
RTX-VMS 30m x 0.25mm x 1.4um
RTX-502.2 40m x 0.18mm x 1um

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 um
ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar Velocity / EST Encon
Autosampler: Varian Archon / EST Centurion
Purge time: 11 min

Column Type: DB-VRX
Column Length: 60 Meters
df: 1.40 um
ID: 0.25 mm
Desorb: 1 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE

Concentrator: Entech 7100A or 7200
Autosampler: Entech 7016CA or 7016D

Column Type: Restek RTX-1
Column Length: 60 Meters
df: 1.00 um
ID: 0.52 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD   Injection volume: 1 ul
Column Type: Restek RXI-5SILMS   df: 0.25 um
Column Length: 30 Meters   ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD   Injection volume: 1 ul
Column Type: Restek RTX-5MS   df: 0.25 um
Column Length: 30 Meters   ID: 0.25 mm

Pesticides/PCB

Instrument: Agilent 6890 w/Dual Micro ECDs   Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL   df: 0.32
Column B: Restek RTX/STX-CLPPesticide II   df: 0.25
Column Length: 30 Meters   ID: 0.32 mm

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs   Injection Volume: 1uL
Column A: Restek RTX-1701   df: 0.25
Column B: Restek RTX-5   df: 0.25
Column Length: 30 Meters   ID: 0.32 mm

Petroleum

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID   Injection Volume: 1uL
Column: Restek RTX 5   df: 0.25
Column Length: 30 Meters
ID: 0.32 mm

EPH

Instrument: Agilent 6890N w/FID   Injection Volume: 1uL
Column: Restek RTX 5   df: 0.25
Column Length: 30 Meters
ID: 0.32 mm

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (ECD):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L1747754

Received : 27-DEC-2017
Reviewer : Paul Walukevich

Account Name : Sterling Environmental Eng
Project Number : 28014
Project Name : EHS 2017 IA

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
NA	Absent/			

Condition Information

All samples on COC received?	**YES**
Extra samples received?	**NO**
Are there any sample container discrepancies?	**NO**
Are there any discrepancies between sample labels & COC?	**NO**
Are samples in appropriate containers for requested analysis?	**YES**
Are samples properly preserved for requested analysis?	**NO**
Are samples within holding time for requested analysis?	**YES**
All sampling equipment returned?	**YES**

Volatile Organics/VPH

Reagent Water Vials Frozen by Client?	**NA**

```
                                ALPHA ANALYTICAL LABORATORIES, INC.
                                   LOGIN CHAIN OF CUSTODY REPORT
                                       Jan 08 2018, 04:41 pm

                                       Login Number: L1747754
                   Account: STERLINGENV  Sterling Environmental EngProject: 28014
                              Received: 27DEC17     Due Date: 04JAN18
Sample #    Client ID          Mat PR Collected     Container

L1747754-01 IA-A_122717         10 S0 27DEC17 16:40 1-Can-6
Need SIM for 7 NYS DMCs. ASP-B Package Due Date: 01/05/17

ASP-B,CAN-RENT,FLOW-RENT,TO15-LL,TO15-SIM

L1747754-02 IA-B_122717         10 S0 27DEC17 17:15 1-Can-6
Need SIM for 7 NYS DMCs.  Package Due Date: 01/05/17

CAN-RENT,FLOW-RENT,TO15-LL,TO15-SIM
```

Logged By: Paul Walukevich

AIR ANALYSIS

PAGE 1 OF 1

Date Rec'd in Lab: 12/28/17

ALPHA Job #: L1747754

ALPHA ANALYTICAL

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Sterling Env. Eng
Address: 24 Wade Rd
Latham, NY 12110
Phone: (518) 456-4900
Fax: —
Email: amanda.castignetti@sterlingenvironmental.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: EHS 2017 IA
Project Location: Elmira, NY
Project #: 28014
Project Manager: C. Anderson / R. Aldrich
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☒ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☒ EMAIL (standard pdf report)
☐ Additional Deliverables: CAT B
Report to: (if different than Project Manager)

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

* Cat B Report *

Other Project Specific Requirements/Comments: * TCE, VC & Carbon Tetrachloride = 0.25 ug/m3, All other = 1 ug/m3

Project-Specific Target Compound List: ☐

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	☐	Sample Comments (i.e. PID)
47754-01	IA-A_122717	12/27/17	0600	1640	-29.98	-7.81	IA	AMC	6L	1575	0027	X	X					
-02	IA-B_122717	12/27/17	0600	1715	-27.78	-8.52	IA	AMC	6L	0063	0406	X	X					

ANALYSIS: TO-15, TO-15 SIM, APH (Subtract Non-petroleum HCs), Fixed Gases, Sulfides & Mercaptans by TO-15

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
	12/27/17 2040	AAL	12/27/17 2140
	12/27/17 2145		12/28/17 00:40
	12/28/17 0430		12/28/17 0430

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Form No: 101-02 Rev: (25-Sep-15)

Supporting Documentation

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1747754-01	IA-A_122717	0027	Flow 5	12/21/17	256045		-	-	-	Pass	6.7	7.0	4
L1747754-01	IA-A_122717	1575	6.0L Can	12/21/17	256045	L1746688-01	Pass	-29.7	-8.3	-	-	-	-
L1747754-02	IA-B_122717	0406	Flow 5	12/21/17	256045		-	-	-	Pass	6.5	6.1	6
L1747754-02	IA-B_122717	2063	6.0L Can	12/21/17	256045	L1746688-03	Pass	-29.7	-9.1	-	-	-	-

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	12/19/17 13:03		
Analyst:	MB		

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Air Canister Certification Results

Lab ID: L1746688-01
Client ID: CAN 584 SHELF 45
Sample Location:

Date Collected: 12/15/17 16:00
Date Received: 12/19/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	82		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	81		60-140

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	12/19/17 13:03		
Analyst:	MB		

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1

Air Canister Certification Results

Lab ID:	L1746688-01	Date Collected:	12/15/17 16:00
Client ID:	CAN 584 SHELF 45	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	82		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	82		60-140

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L1746688
Project Number: CANISTER QC BAT **Report Date:** 01/08/18

Air Canister Certification Results

Lab ID:	L1746688-03	Date Collected:	12/15/17 16:00
Client ID:	CAN 706 SHELF 47	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	12/19/17 17:43		
Analyst:	MB		

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Air Canister Certification Results

Lab ID: L1746688-03
Client ID: CAN 706 SHELF 47
Sample Location:
Date Collected: 12/15/17 16:00
Date Received: 12/19/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Air Canister Certification Results

Lab ID:	L1746688-03	Date Collected:	12/15/17 16:00
Client ID:	CAN 706 SHELF 47	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Air Canister Certification Results

Lab ID:	L1746688-03	Date Collected:	12/15/17 16:00
Client ID:	CAN 706 SHELF 47	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Air Canister Certification Results

Lab ID:	L1746688-03	Date Collected:	12/15/17 16:00
Client ID:	CAN 706 SHELF 47	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air								

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	87		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	85		60-140

Air Canister Certification Results

Lab ID: L1746688-03
Client ID: CAN 706 SHELF 47
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 12/19/17 17:43
Analyst: MB

Date Collected: 12/15/17 16:00
Date Received: 12/19/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Air Canister Certification Results

Lab ID: L1746688-03
Client ID: CAN 706 SHELF 47
Sample Location:

Date Collected: 12/15/17 16:00
Date Received: 12/19/17
Field Prep: Not Specified

	ppbV			**ug/m3**				**Dilution Factor**
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	
Volatile Organics in Air by SIM								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1

Air Canister Certification Results

Lab ID:	L1746688-03	Date Collected:	12/15/17 16:00
Client ID:	CAN 706 SHELF 47	Date Received:	12/19/17
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	88		60-140

Organics

Volatile Organics in Air
TO-15 Low Level

Volatiles QC Summary

Lab Duplicates
Form 3

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Client Sample ID	**: NA**	**Matrix**	**: AIR**
Lab Sample ID	**: NA**	**Analysis Date**	**: 01/02/18 18:07**
Lab File ID	**: R154994**	**DUP File ID**	**: r154995**
Dup Sample ID	**: WG1078148-5**	**DUP Analysis Date**	**: 01/02/18 18:50**

Parameter	Sample Concentration (ppbV)	Duplicate Concentration (ppbV)	RPD	RPD Limit
Dichlorodifluoromethane	0.487	0.470	4	25
Chloromethane	0.469	0.475	1	25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	NC	25
1,3-Butadiene	ND	ND	NC	25
Bromomethane	ND	ND	NC	25
Chloroethane	ND	ND	NC	25
Ethyl Alcohol	ND	ND	NC	25
Vinyl bromide	ND	ND	NC	25
Acetone	41.5	41.0	1	25
Trichlorofluoromethane	0.244	0.245	0	25
iso-Propyl Alcohol	33.5	33.3	1	25
tert-Butyl Alcohol	ND	ND	NC	25
Methylene chloride	ND	ND	NC	25
3-Chloropropene	ND	ND	NC	25
Carbon disulfide	ND	ND	NC	25
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	NC	25
trans-1,2-Dichloroethene	ND	ND	NC	25
1,1-Dichloroethane	ND	ND	NC	25
Methyl tert butyl ether	ND	ND	NC	25
2-Butanone	ND	ND	NC	25
Ethyl Acetate	ND	ND	NC	25
Chloroform	ND	ND	NC	25
Tetrahydrofuran	ND	ND	NC	25
1,2-Dichloroethane	ND	ND	NC	25
n-Hexane	0.232	0.224	4	25
Benzene	ND	ND	NC	25
Cyclohexane	ND	ND	NC	25

Lab Duplicates
Form 3

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Client Sample ID	**: NA**	**Matrix**	**: AIR**
Lab Sample ID	**: NA**	**Analysis Date**	**: 01/02/18 18:07**
Lab File ID	**: R154994**	**DUP File ID**	**: r154995**
Dup Sample ID	**: WG1078148-5**	**DUP Analysis Date**	**: 01/02/18 18:50**

Parameter	Sample Concentration (ppbV)	Duplicate Concentration (ppbV)	RPD	RPD Limit
1,2-Dichloropropane	ND	ND	NC	25
Bromodichloromethane	ND	ND	NC	25
1,4-Dioxane	ND	ND	NC	25
2,2,4-Trimethylpentane	0.321	0.325	1	25
Heptane	3.39	3.45	2	25
cis-1,3-Dichloropropene	ND	ND	NC	25
4-Methyl-2-pentanone	ND	ND	NC	25
trans-1,3-Dichloropropene	ND	ND	NC	25
1,1,2-Trichloroethane	ND	ND	NC	25
Toluene	2.51	2.56	2	25
2-Hexanone	ND	ND	NC	25
Dibromochloromethane	ND	ND	NC	25
1,2-Dibromoethane	ND	ND	NC	25
Chlorobenzene	ND	ND	NC	25
Ethylbenzene	3.09	3.20	3	25
p/m-Xylene	13.3	13.7	3	25
Bromoform	ND	ND	NC	25
Styrene	0.286	0.292	2	25
1,1,2,2-Tetrachloroethane	ND	ND	NC	25
o-Xylene	4.21	4.29	2	25
4-Ethyltoluene	1.64	1.64	0	25
1,3,5-Trimethylbenzene	1.90	1.94	2	25
1,2,4-Trimethylbenzene	6.96	7.09	2	25
Benzyl chloride	ND	ND	NC	25
1,3-Dichlorobenzene	ND	ND	NC	25
1,4-Dichlorobenzene	ND	ND	NC	25
1,2-Dichlorobenzene	ND	ND	NC	25

Lab Duplicates
Form 3

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Client Sample ID	**: NA**	**Matrix**	**: AIR**
Lab Sample ID	**: NA**	**Analysis Date**	**: 01/02/18 18:07**
Lab File ID	**: R154994**	**DUP File ID**	**: r154995**
Dup Sample ID	**: WG1078148-5**	**DUP Analysis Date**	**: 01/02/18 18:50**

Parameter	Sample Concentration (ppbV)	Duplicate Concentration (ppbV)	RPD	RPD Limit
1,2,4-Trichlorobenzene	ND	ND	NC	25
Hexachlorobutadiene	ND	ND	NC	25

Laboratory Control Sample
Form 3

Client : Sterling Environmental Eng **Lab Number** : L1747754
Project Name : EHS 2017 IA **Project Number** : 28014
Matrix : AIR
LCS Sample ID : WG1078148-3 **Analysis Date** : 01/02/18 11:33 **File ID** : r154989
LCSD Sample ID : **Analysis Date** : **File ID** :

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
Chlorodifluoromethane	10	8.50	85				-	70-130	-
Propylene	10	9.94	99				-	70-130	-
Propane	10	7.56	76				-	70-130	-
Dichlorodifluoromethane	10	9.99	100				-	70-130	-
Chloromethane	10	8.83	88				-	70-130	-
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10	9.54	95				-	70-130	-
Methanol	50	38.0	76				-	70-130	-
Vinyl chloride	10	9.69	97				-	70-130	-
1,3-Butadiene	10	9.26	93				-	70-130	-
Butane	10	9.00	90				-	70-130	-
Bromomethane	10	9.74	97				-	70-130	-
Chloroethane	10	9.26	93				-	70-130	-
Ethyl Alcohol	50	41.5	83				-	70-130	-
Dichlorofluoromethane	10	9.00	90				-	70-130	-
Vinyl bromide	10	9.61	96				-	70-130	-
Acrolein	10	7.96	80				-	70-130	-
Acetone	50	46.8	94				-	70-130	-
Acetonitrile	10	8.32	83				-	70-130	-
Trichlorofluoromethane	10	10.4	104				-	70-130	-
iso-Propyl Alcohol	25	22.1	88				-	70-130	-
Acrylonitrile	10	7.99	80				-	70-130	-
Pentane	10	8.45	84				-	70-130	-
Ethyl ether	10	7.53	75				-	70-130	-
1,1-Dichloroethene	10	9.65	96				-	70-130	-
tert-Butyl Alcohol	10	8.19	82				-	70-130	-
Methylene chloride	10	8.93	89				-	70-130	-

Laboratory Control Sample
Form 3

Client	: Sterling Environmental Eng			**Lab Number**	: L1747754
Project Name	: EHS 2017 IA			**Project Number**	: 28014
Matrix	: AIR				
LCS Sample ID	: WG1078148-3	**Analysis Date**	: 01/02/18 11:33	**File ID**	: r154989
LCSD Sample ID	:	**Analysis Date**	:	**File ID**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
3-Chloropropene	10	9.52	95				-	70-130	-
Carbon disulfide	10	8.72	87				-	70-130	-
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	10.0	100				-	70-130	-
trans-1,2-Dichloroethene	10	10.5	105				-	70-130	-
1,1-Dichloroethane	10	10.4	104				-	70-130	-
Methyl tert butyl ether	10	9.53	95				-	70-130	-
Vinyl acetate	10	10.7	107				-	70-130	-
2-Butanone	10	9.73	97				-	70-130	-
cis-1,2-Dichloroethene	10	11.0	110				-	70-130	-
Ethyl Acetate	10	10.8	108				-	70-130	-
Chloroform	10	10.9	109				-	70-130	-
Tetrahydrofuran	10	9.76	98				-	70-130	-
2,2-Dichloropropane	10	9.43	94				-	70-130	-
1,2-Dichloroethane	10	10.9	109				-	70-130	-
n-Hexane	10	9.54	95				-	70-130	-
Isopropyl Ether	10	8.79	88				-	70-130	-
Ethyl-Tert-Butyl-Ether	10	8.26	83				-	70-130	-
1,1,1-Trichloroethane	10	10.2	102				-	70-130	-
1,1-Dichloropropene	10	8.97	90				-	70-130	-
Benzene	10	9.04	90				-	70-130	-
Carbon tetrachloride	10	10.5	105				-	70-130	-
Cyclohexane	10	9.59	96				-	70-130	-
Tertiary-Amyl Methyl Ether	10	8.02	80				-	70-130	-
Dibromomethane	10	9.18	92				-	70-130	-
1,2-Dichloropropane	10	9.60	96				-	70-130	-
Bromodichloromethane	10	10.2	102				-	70-130	-

Laboratory Control Sample
Form 3

Client	: Sterling Environmental Eng			**Lab Number**	: L1747754		
Project Name	: EHS 2017 IA			**Project Number**	: 28014		
Matrix	: AIR						
LCS Sample ID	: WG1078148-3	**Analysis Date :**	01/02/18 11:33	**File ID**	: r154989		
LCSD Sample ID	:	**Analysis Date :**		**File ID**	:		

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
1,4-Dioxane	10	9.92	99				-	70-130	-
Trichloroethene	10	9.89	99				-	70-130	-
2,2,4-Trimethylpentane	10	9.76	98				-	70-130	-
Methyl Methacrylate	10	10.2	102				-	70-130	-
Heptane	10	9.06	91				-	70-130	-
cis-1,3-Dichloropropene	10	9.76	98				-	70-130	-
4-Methyl-2-pentanone	10	9.15	92				-	70-130	-
trans-1,3-Dichloropropene	10	8.39	84				-	70-130	-
1,1,2-Trichloroethane	10	9.96	100				-	70-130	-
Toluene	10	10.4	104				-	70-130	-
1,3-Dichloropropane	10	8.98	90				-	70-130	-
2-Hexanone	10	9.35	94				-	70-130	-
Dibromochloromethane	10	11.3	113				-	70-130	-
1,2-Dibromoethane	10	10.1	101				-	70-130	-
Butyl Acetate	10	8.94	89				-	70-130	-
Octane	10	9.49	95				-	70-130	-
Tetrachloroethene	10	10.7	107				-	70-130	-
1,1,1,2-Tetrachloroethane	10	9.83	98				-	70-130	-
Chlorobenzene	10	10.4	104				-	70-130	-
Ethylbenzene	10	10.5	105				-	70-130	-
p/m-Xylene	20	21.2	106				-	70-130	-
Bromoform	10	11.4	114				-	70-130	-
Styrene	10	10.4	104				-	70-130	-
1,1,2,2-Tetrachloroethane	10	10.8	108				-	70-130	-
o-Xylene	10	10.8	108				-	70-130	-
1,2,3-Trichloropropane	10	9.40	94				-	70-130	-
Nonane (C9)	10	8.84	88				-	70-130	-
Isopropylbenzene	10	9.94	99				-	70-130	-

Laboratory Control Sample
Form 3

Client	: Sterling Environmental Eng			**Lab Number**	: L1747754
Project Name	: EHS 2017 IA			**Project Number**	: 28014
Matrix	: AIR				
LCS Sample ID	: WG1078148-3	**Analysis Date**	: 01/02/18 11:33	**File ID**	: r154989
LCSD Sample ID	:	**Analysis Date**	:	**File ID**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
Bromobenzene	10	9.42	94				-	70-130	-
o-Chlorotoluene	10	9.58	96				-	70-130	-
n-Propylbenzene	10	9.71	97				-	70-130	-
p-Chlorotoluene	10	9.69	97				-	70-130	-
4-Ethyltoluene	10	10.2	102				-	70-130	-
1,3,5-Trimethylbenzene	10	10.4	104				-	70-130	-
tert-Butylbenzene	10	9.98	100				-	70-130	-
1,2,4-Trimethylbenzene	10	10.8	108				-	70-130	-
Decane (C10)	10	9.65	96				-	70-130	-
Benzyl chloride	10	10.8	108				-	70-130	-
1,3-Dichlorobenzene	10	10.6	106				-	70-130	-
1,4-Dichlorobenzene	10	10.4	104				-	70-130	-
sec-Butylbenzene	10	9.67	97				-	70-130	-
p-Isopropyltoluene	10	9.25	92				-	70-130	-
1,2-Dichlorobenzene	10	10.7	107				-	70-130	-
n-Butylbenzene	10	10.1	101				-	70-130	-
1,2-Dibromo-3-chloropropane	10	10.0	100				-	70-130	-
Undecane	10	9.96	100				-	70-130	-
Dodecane (C12)	10	10.6	106				-	70-130	-
1,2,4-Trichlorobenzene	10	11.3	113				-	70-130	-
Naphthalene	10	10.2	102				-	70-130	-
1,2,3-Trichlorobenzene	10	10.6	106				-	70-130	-
Hexachlorobutadiene	10	11.5	115				-	70-130	-

Method Blank Summary
Form 4

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab Sample ID	: WG1078148-4	**Lab File ID**	: r154992
Instrument ID	: AIRLAB15		
Matrix	: AIR	**Analysis Date**	: 01/02/18 15:23

Client Sample No.	Lab Sample ID	Analysis Date
WG1078148-3LCS	WG1078148-3	01/02/18 11:33
IA-1DUP	WG1078148-5	01/02/18 18:50
IA-A_122717	L1747754-01	01/02/18 21:38
IA-B_122717	L1747754-02	01/02/18 22:21

Instrument Performance Check
Bromofluorobenzene (BFB)
Form 5

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Analysis Date**	: 12/22/17 14:17
Tune Standard	: WG1075924-1	**Tune File ID**	: r154812_tune

m/e	Ion Abundance Criteria	%Relative Abundance
50	8.0 - 40.0% of mass 95	15.5
75	30.0 - 66.0% of mass 95	38.6
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.3 (.5)1
174	50.0 - 120.0% of mass 95	65.3
175	4.0 - 9.0% of mass 174	4.5 (6.9)1
176	93.0 - 101% of mass 174	60.8 (93.1)1
177	5.0 - 9.0% of mass 176	3.9 (6.5)2

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
STD0.2	R1034536-1	R154816	12/22/17 16:49
STD0.5	R1034536-2	R154817	12/22/17 17:27
STD1.0	R1034536-3	R154818	12/22/17 18:07
STD5.0	R1034536-4	R154819	12/22/17 18:44
STD010	R1034536-5	R154820	12/22/17 19:25
STD020	R1034536-6	R154821	12/22/17 20:02
STD050	R1034536-7	R154822	12/22/17 20:41
STD100	R1034536-8	R154823	12/22/17 21:22
ICV QUANT REPORT	R1034536-9	R154826	12/23/17 10:11

Instrument Performance Check
Bromofluorobenzene (BFB)
Form 5

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Analysis Date**	: 01/02/18 09:54
Tune Standard	: WG1078148-1	**Tune File ID**	: r154987_tune

m/e	Ion Abundance Criteria	%Relative Abundance
50	8.0 - 40.0% of mass 95	14.5
75	30.0 - 66.0% of mass 95	37.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.3 (.5)1
174	50.0 - 120.0% of mass 95	64.2
175	4.0 - 9.0% of mass 174	4.5 (7)1
176	93.0 - 101% of mass 174	60.9 (94.8)1
177	5.0 - 9.0% of mass 176	4.1 (6.7)2

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
WG1078148-2CCAL	WG1078148-2	R154988	01/02/18 10:38
WG1078148-3LCS	WG1078148-3	R154989	01/02/18 11:33
WG1078148-4BLANK	WG1078148-4	R154992	01/02/18 15:23
WG1078148-5DUP	WG1078148-5	R154995	01/02/18 18:50
IA-A_122717	L1747754-01	R154999	01/02/18 21:38
IA-B_122717	L1747754-02	R155000	01/02/18 22:21

Internal Standard Area and RT Summary
Form 8

Client	: Sterling Environmental Eng		**Lab Number**	: L1747754
Project Name	: EHS 2017 IA		**Project Number**	: 28014
Instrument ID	: AIRLAB15		**Analysis Date**	: 01/02/18 10:38
Sample No	: WG1078148-2		**Lab File ID**	: R154988

	Bromochloromethane		1,4-Difluorobenzene		Chlorobenzene-d5	
	Area	RT	Area	RT	Area	RT
WG1078148-2	220148	8.92	557225	11.16	97822	15.89
Upper Limit	308207	9.25	780115	11.49	136951	16.22
Lower Limit	132089	8.59	334335	10.83	58693	15.56
Sample ID						
WG1078148-3 LCS	218683	8.93	559797	11.17	96791	15.89
WG1078148-4 BLANK	211944	8.92	550912	11.16	94691	15.89
IA-1 DUP	208518	8.92	537771	11.16	92788	15.89
IA-A_122717	203541	8.92	532564	11.16	92241	15.89
IA-B_122717	205925	8.92	536036	11.16	90810	15.89

Area Upper Limit = +40% of internal standard area

Area Lower Limit = - 40% of internal standard area

RT Upper Limit = +0.33 minutes of internal standard RT

RT Lower Limit = -0.33 minutes of internal standard RT

* Values outside of QC limits

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Volatile Organics in Air: TO-15 (AIR)

Holding Time: 30 days
Container/Sample Preservation: 1 - Canister - 2.7 Liter

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
1,1,1-Trichloroethane	71-55-6	0.2	0.057	ppbV	70-130			25	25			
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.0548	ppbV	70-130			25	25			
1,1,2-Trichloroethane	79-00-5	0.2	0.0667	ppbV	70-130			25	25			
1,1-Dichloroethane	75-34-3	0.2	0.0771	ppbV	70-130			25	25			
1,1-Dichloroethene	75-35-4	0.2	0.0566	ppbV	70-130			25	25			
1,2,3-Trimethylbenzene	526-73-8	0.2	0.0751	ppbV	70-130			25	25			
1,2,4-Trichlorobenzene	120-82-1	0.2	0.0611	ppbV	70-130			25	25			
1,2,4-Trimethylbenzene	95-63-6	0.2	0.0694	ppbV	70-130			25	25			
1,2,4,5-Tetramethylbenzene	95-93-2	0.2	0.0795	ppbV	70-130			25	25			
1,2-Dibromoethane	106-93-4	0.2	0.0779	ppbV	70-130			25	25			
1,2-Dichlorobenzene	95-50-1	0.2	0.0614	ppbV	70-130			25	25			
1,2-Dichloroethane	107-06-2	0.2	0.0552	ppbV	70-130			25	25			
1,2-Dichloropropane	78-87-5	0.2	0.0697	ppbV	70-130			25	25			
1,3,5-Trimethylbenzene	108-67-8	0.2	0.0584	ppbV	70-130			25	25			
1,3-Butadiene	106-99-0	0.2	0.0799	ppbV	70-130			25	25			
1,3-Dichlorobenzene	541-73-1	0.2	0.0637	ppbV	70-130			25	25			
1,4-Dichlorobenzene	106-46-7	0.2	0.0418	ppbV	70-130			25	25			
1,4-Dioxane	123-91-1	0.2	0.078	ppbV	70-130			25	25			
2,2,4-Trimethylpentane	540-84-1	0.2	0.0659	ppbV	70-130			25	25			
2-Butanone	78-93-3	0.5	0.0522	ppbV	70-130			25	25			
2-Hexanone	591-78-6	0.2	0.0604	ppbV	70-130			25	25			
2-Methylthiophene	554-14-3	0.2	0.0789	ppbV	70-130			25	25			
3-Methylthiophene	616-44-4	0.2	0.0669	ppbV	70-130			25	25			
3-Chloropropene	107-05-1	0.2	0.0812	ppbV	70-130			25	25			
2-Ethylthiophene	872-55-9	0.2	0.0571	ppbV	70-130			25	25			
4-Ethyltoluene	622-96-8	0.2	0.0776	ppbV	70-130			25	25			
Acetone	67-64-1	1	0.165	ppbV	70-130			25	25			
Benzene	71-43-2	0.2	0.0537	ppbV	70-130			25	25			
Benzyl chloride	100-44-7	0.2	0.0645	ppbV	70-130			25	25			
Benzothiophene	95-15-8	0.5	0.0468	ppbV	70-130			25	25			
Bromodichloromethane	75-27-4	0.2	0.0656	ppbV	70-130			25	25			
Bromoform	75-25-2	0.2	0.0523	ppbV	70-130			25	25			
Bromomethane	74-83-9	0.2	0.0696	ppbV	70-130			25	25			
Carbon disulfide	75-15-0	0.2	0.0345	ppbV	70-130			25	25			
Carbon tetrachloride	56-23-5	0.2	0.0471	ppbV	70-130			25	25			
Chlorobenzene	108-90-7	0.2	0.0789	ppbV	70-130			25	25			
Chloroethane	75-00-3	0.2	0.0767	ppbV	70-130			25	25			
Chloroform	67-66-3	0.2	0.0452	ppbV	70-130			25	25			
Chloromethane	74-87-3	0.2	0.0958	ppbV	70-130			25	25			
cis-1,2-Dichloroethene	156-59-2	0.2	0.0587	ppbV	70-130			25	25			
cis-1,3-Dichloropropene	10061-01-5	0.2	0.0745	ppbV	70-130			25	25			
Cyclohexane	110-82-7	0.2	0.0656	ppbV	70-130			25	25			

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)

Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Volatile Organics in Air: TO-15 (AIR)

Holding Time: 30 days
Container/Sample Preservation: 1 - Canister - 2.7 Liter

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
Dibromochloromethane	124-48-1	0.2	0.0747	ppbV	70-130			25	25			
Dichlorodifluoromethane	75-71-8	0.2	0.0466	ppbV	70-130			25	25			
Ethyl Alcohol	GCDAI06	5	0.542	ppbV	70-130			25	25			
Ethyl Acetate	141-78-6	0.5	0.131	ppbV	70-130			25	25			
Ethylbenzene	100-41-4	0.2	0.0555	ppbV	70-130			25	25			
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0.2	0.0511	ppbV	70-130			25	25			
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.2	0.0419	ppbV	70-130			25	25			
Hexachlorobutadiene	87-68-3	0.2	0.0732	ppbV	70-130			25	25			
iso-Propyl Alcohol	67-63-0	0.5	0.084	ppbV	70-130			25	25			
Methylene chloride	75-09-2	0.5	0.0622	ppbV	70-130			25	25			
4-Methyl-2-pentanone	108-10-1	0.5	0.0607	ppbV	70-130			25	25			
Methyl tert butyl ether	1634-04-4	0.2	0.0452	ppbV	70-130			25	25			
Methyl Methacrylate	80-62-6	0.5	0.147	ppbV	70-130			25	25			
p/m-Xylene	179601-23-1	0.4	0.139	ppbV	70-130			25	25			
o-Xylene	95-47-6	0.2	0.0631	ppbV	70-130			25	25			
Xylene (Total)	1330-20-7	0.2	0.0631	ppbV	70-130			25	25			
Heptane	142-82-5	0.2	0.0553	ppbV	70-130			25	25			
n-Heptane	142-82-5	0.2	0.0553	ppbV	70-130			25	25			
n-Hexane	110-54-3	0.2	0.0518	ppbV	70-130			25	25			
Propylene	115-07-1	0.5	0.0929	ppbV	70-130			25	25			
Styrene	100-42-5	0.2	0.0799	ppbV	70-130			25	25			
Tetrachloroethene	127-18-4	0.2	0.0758	ppbV	70-130			25	25			
Thiophene	110-02-1	0.2	0.0528	ppbV	70-130			25	25			
Tetrahydrofuran	109-99-9	0.5	0.0608	ppbV	70-130			25	25			
Toluene	108-88-3	0.2	0.0628	ppbV	70-130			25	25			
trans-1,2-Dichloroethene	156-60-5	0.2	0.074	ppbV	70-130			25	25			
1,2-Dichloroethene (total)	540-59-0	0.2	0.0587	ppbV	70-130			25	25			
trans-1,3-Dichloropropene	10061-02-6	0.2	0.0693	ppbV	70-130			25	25			
1,3-Dichloropropene, Total	542-75-6	0.2	0.0693	ppbV	70-130			25	25			
Trichloroethene	79-01-6	0.2	0.071	ppbV	70-130			25	25			
Trichlorofluoromethane	75-69-4	0.2	0.0416	ppbV	70-130			25	25			
Vinyl acetate	108-05-4	1	0.0567	ppbV	70-130			25	25			
Vinyl bromide	593-60-2	0.2	0.0699	ppbV	70-130			25	25			
Vinyl chloride	75-01-4	0.2	0.0394	ppbV	70-130			25	25			
Naphthalene	91-20-3	0.2	0.0425	ppbV	70-130			25	25			
Total HC As Hexane	NONE	10	0.0518	ppbV	70-130			25	25			
Total VOCs As Toluene	NONE	10	0.0628	ppbV	70-130			25	25			
Propane	74-98-6	0.5	0.114	ppbV	70-130			25	25			
Acrylonitrile	107-13-1	0.5	0.079	ppbV	70-130			25	25			
Acrolein	107-02-8	0.5	0.114	ppbV	70-130			25	25			
1,1,1,2-Tetrachloroethane	630-20-6	0.2	0.0547	ppbV	70-130			25	25			
Isopropylbenzene	98-82-8	0.2	0.043	ppbV	70-130			25	25			

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)

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Date Created: 08/16/17
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Volatile Organics in Air: TO-15 (AIR)

Holding Time: 30 days
Container/Sample Preservation: 1 - Canister - 2.7 Liter

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
1,2,3-Trichloropropane	96-18-4	0.2	0.0767	ppbV	70-130			25	25			
Acetonitrile	75-05-8	0.2	0.0761	ppbV	70-130			25	25			
Bromobenzene	108-86-1	0.2	0.079	ppbV	70-130			25	25			
Chlorodifluoromethane	75-45-6	0.2	0.0626	ppbV	70-130			25	25			
Dichlorofluoromethane	75-43-4	0.2	0.0572	ppbV	70-130			25	25			
Dibromomethane	74-95-3	0.2	0.0476	ppbV	70-130			25	25			
Pentane	109-66-0	0.2	0.0475	ppbV	70-130			25	25			
Octane	111-65-9	0.2	0.0421	ppbV	70-130			25	25			
Tertiary-Amyl Methyl Ether	994-05-8	0.2	0.0795	ppbV	70-130			25	25			
o-Chlorotoluene	95-49-8	0.2	0.0487	ppbV	70-130			25	25			
p-Chlorotoluene	106-43-4	0.2	0.0764	ppbV	70-130			25	25			
2,2-Dichloropropane	594-20-7	0.2	0.0581	ppbV	70-130			25	25			
1,1-Dichloropropene	563-58-6	0.2	0.0715	ppbV	70-130			25	25			
Isopropyl Ether	108-20-3	0.2	0.0656	ppbV	70-130			25	25			
Ethyl-Tert-Butyl-Ether	637-92-3	0.2	0.0515	ppbV	70-130			25	25			
1,2,3-Trichlorobenzene	87-61-6	0.2	0.0431	ppbV	70-130			25	25			
Ethyl ether	60-29-7	0.2	0.0591	ppbV	70-130			25	25			
n-Butylbenzene	104-51-8	0.2	0.0639	ppbV	70-130			25	25			
sec-Butylbenzene	135-98-8	0.2	0.0731	ppbV	70-130			25	25			
tert-Butylbenzene	98-06-6	0.2	0.0402	ppbV	70-130			25	25			
1,2-Dibromo-3-chloropropane	96-12-8	0.2	0.0744	ppbV	70-130			25	25			
p-Isopropyltoluene	99-87-6	0.2	0.0608	ppbV	70-130			25	25			
n-Propylbenzene	103-65-1	0.2	0.0559	ppbV	70-130			25	25			
1,3-Dichloropropane	142-28-9	0.2	0.0776	ppbV	70-130			25	25			
Methanol	67-56-1	5	0.736	ppbV	70-130			25	25			
Acetaldehyde	75-07-0	2.5	0.547	ppbV	70-130			25	25			
Butane	106-97-8	0.2	0.0442	ppbV	70-130			25	25			
Nonane (C9)	111-84-2	0.2	0.0644	ppbV	70-130			25	25			
Decane (C10)	124-18-5	0.2	0.0484	ppbV	70-130			25	25			
Undecane	1120-21-4	0.2	0.0528	ppbV	70-130			25	25			
Indane	496-11-7	0.2	0.0795	ppbV	70-130			25	25			
Indene	95-13-6	0.2	0.0608	ppbV	70-130			25	25			
1-Methylnaphthalene	90-12-0	1	0.286	ppbV	70-130			25	25			
Dodecane (C12)	112-40-3	0.2	0.0564	ppbV	70-130			25	25			
Butyl Acetate	123-86-4	0.5	0.114	ppbV	70-130			25	25			
tert-Butyl Alcohol	75-65-0	0.5	0.0599	ppbV	70-130			25	25			
2-Methylnaphthalene	91-57-6	1	0.0273	ppbV	70-130			25	25			
1,2-Dichloroethane-d4	*17060-07-0*									*70-130*		
Toluene-d8	*2037-26-5*									*70-130*		
Bromofluorobenzene	*460-00-4*									*70-130*		

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)

Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Volatiles Sample Data

Form 1
Volatile Organics

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Lab ID	**: L1747754-01**	**Date Collected**	**: 12/27/17 16:40**
Client ID	**: IA-A_122717**	**Date Received**	**: 12/27/17**
Sample Location	**: ELMIRA, NY**	**Date Analyzed**	**: 01/02/18 21:38**
Sample Matrix	**: AIR**	**Dilution Factor**	**: 1**
Analytical Method	**: 48,TO-15**	**Analyst**	**: RY**
Lab File ID	**: R154999**	**Instrument ID**	**: AIRLAB15**
Sample Amount	**: 250 ml**	**GC Column**	**: RTX-1**

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-71-8	Dichlorodifluoromethane	1.26	0.200	--	6.23	0.989	--	
74-87-3	Chloromethane	0.454	0.200	--	0.938	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	13.8	5.00	--	26.0	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	2.31	1.00	--	5.49	2.38	--	
75-69-4	Trichlorofluoromethane	0.219	0.200	--	1.23	1.12	--	
67-63-0	Isopropanol	1.03	0.500	--	2.53	1.23	--	
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	Lab Number	: L1747754
Project Name	: EHS 2017 IA	Project Number	: 28014
Lab ID	: L1747754-01	Date Collected	: 12/27/17 16:40
Client ID	: IA-A_122717	Date Received	: 12/27/17
Sample Location	: ELMIRA, NY	Date Analyzed	: 01/02/18 21:38
Sample Matrix	: AIR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: RY
Lab File ID	: R154999	Instrument ID	: AIRLAB15
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.215	0.200	--	0.810	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

Form 1
Volatile Organics

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Lab ID	**: L1747754-02**	**Date Collected**	**: 12/27/17 17:15**
Client ID	**: IA-B_122717**	**Date Received**	**: 12/27/17**
Sample Location	**: ELMIRA, NY**	**Date Analyzed**	**: 01/02/18 22:21**
Sample Matrix	**: AIR**	**Dilution Factor**	**: 1**
Analytical Method	**: 48,TO-15**	**Analyst**	**: RY**
Lab File ID	**: R155000**	**Instrument ID**	**: AIRLAB15**
Sample Amount	**: 250 ml**	**GC Column**	**: RTX-1**

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-71-8	Dichlorodifluoromethane	1.26	0.200	--	6.23	0.989	--	
74-87-3	Chloromethane	0.459	0.200	--	0.948	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	13.7	5.00	--	25.8	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	1.94	1.00	--	4.61	2.38	--	
75-69-4	Trichlorofluoromethane	0.280	0.200	--	1.57	1.12	--	
67-63-0	Isopropanol	1.13	0.500	--	2.78	1.23	--	
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

Form 1
Volatile Organics

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Lab ID	**: L1747754-02**	**Date Collected**	**: 12/27/17 17:15**
Client ID	**: IA-B_122717**	**Date Received**	**: 12/27/17**
Sample Location	**: ELMIRA, NY**	**Date Analyzed**	**: 01/02/18 22:21**
Sample Matrix	**: AIR**	**Dilution Factor**	**: 1**
Analytical Method	**: 48,TO-15**	**Analyst**	**: RY**
Lab File ID	**: R155000**	**Instrument ID**	**: AIRLAB15**
Sample Amount	**: 250 ml**	**GC Column**	**: RTX-1**

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	0.214	0.200	--	0.806	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

Form 1
Volatile Organics

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Lab ID : WG1078148-4
Client ID : WG1078148-4BLANK
Sample Location :
Sample Matrix : AIR
Analytical Method : 48,TO-15
Lab File ID : R154992
Sample Amount : 250 ml

Lab Number : L1747754
Project Number : 28014
Date Collected : NA
Date Received : NA
Date Analyzed : 01/02/18 15:23
Dilution Factor : 1
Analyst : RY
Instrument ID : AIRLAB15
GC Column : RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
115-07-1	Propylene	ND	0.500	--	ND	0.861	--	U
75-71-8	Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--	U
74-87-3	Chloromethane	ND	0.200	--	ND	0.413	--	U
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	ND	5.00	--	ND	9.42	--	U
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	ND	1.00	--	ND	2.38	--	U
75-69-4	Trichlorofluoromethane	ND	0.200	--	ND	1.12	--	U
67-63-0	Isopropanol	ND	0.500	--	ND	1.23	--	U
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
108-05-4	Vinyl acetate	ND	1.00	--	ND	3.52	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078148-4	**Date Collected**	: NA
Client ID	: WG1078148-4BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 01/02/18 15:23
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15	**Analyst**	: RY
Lab File ID	: R154992	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	ND	0.200	--	ND	1.07	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	ND	0.200	--	ND	0.754	--	U
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	ND	0.200	--	ND	1.36	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078148-4	**Date Collected**	: NA
Client ID	: WG1078148-4BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 01/02/18 15:23
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15	**Analyst**	: RY
Lab File ID	: R154992	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

Tentatively Identified Compounds
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078148-4	**Date Collected**	: NA
Client ID	: WG1078148-4BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 01/02/18 15:23
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15	**Analyst**	: RY
Lab File ID	: r154992	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

Number TICS found: 0

Concentration Units:

CAS Number	Compound Name	RT	EST. CONC.	Qualifier
	NO TENTATIVELY IDENTIFIED COMPOUNDS			J

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078148-5	**Date Collected**	: 12/26/17 15:15
Client ID	: IA-1DUP	**Date Received**	: 12/26/17
Sample Location	:	**Date Analyzed**	: 01/02/18 18:50
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15	**Analyst**	: RY
Lab File ID	: R154995	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-71-8	Dichlorodifluoromethane	0.470	0.200	--	2.32	0.989	--	
74-87-3	Chloromethane	0.475	0.200	--	0.981	0.413	--	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethan	ND	0.200	--	ND	1.40	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethyl Alcohol	ND	5.00	--	ND	9.42	--	U
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	41.0	1.00	--	97.4	2.38	--	
75-69-4	Trichlorofluoromethane	0.245	0.200	--	1.38	1.12	--	
67-63-0	iso-Propyl Alcohol	33.3	0.500	--	81.9	1.23	--	
75-65-0	tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	0.224	0.200	--	0.789	0.705	--	
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078148-5	**Date Collected**	: 12/26/17 15:15
Client ID	: IA-1DUP	**Date Received**	: 12/26/17
Sample Location	:	**Date Analyzed**	: 01/02/18 18:50
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15	**Analyst**	: RY
Lab File ID	: R154995	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
540-84-1	2,2,4-Trimethylpentane	0.325	0.200	--	1.52	0.934	--	
142-82-5	Heptane	3.45	0.200	--	14.1	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	2.56	0.200	--	9.65	0.754	--	
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	3.20	0.200	--	13.9	0.869	--	
179601-23-1	p/m-Xylene	13.7	0.400	--	59.5	1.74	--	
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	0.292	0.200	--	1.24	0.852	--	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	4.29	0.200	--	18.6	0.869	--	
622-96-8	4-Ethyltoluene	1.64	0.200	--	8.06	0.983	--	
108-67-8	1,3,5-Trimethylbenzene	1.94	0.200	--	9.54	0.983	--	
95-63-6	1,2,4-Trimethylbenzene	7.09	0.200	--	34.9	0.983	--	
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

```
                          Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154999.D
Acq On    :  2 Jan 2018   9:38 PM
Operator  : AIRLAB15:RY
Sample    : L1747754-01,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:47:57 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
Sub List     : TO15-NY-7-SIM - .

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane             8.92   49   203541    10.000 ppbV     0.00
   Standard Area  =       220148               Recovery   =   92.46%
  43) 1,4-difluorobenzene           11.16  114   532564    10.000 ppbV     0.00
   Standard Area  =       557225               Recovery   =   95.57%
  67) chlorobenzene-D5              15.89   54    92241    10.000 ppbV     0.00
   Standard Area  =        97822               Recovery   =   94.29%

 System Monitoring Compounds

 Target Compounds                                                  Qvalue
   5) dichlorodifluoromethane        3.85   85     27733      1.264 ppbV     100
   6) chloromethane                  4.01   50      5675      0.454 ppbV      97
   7) Freon-114                      4.11              0       N.D.
  10) 1,3-butadiene                  0.00              0       N.D.
  13) bromomethane                   0.00              0       N.D.
  14) chloroethane                   0.00              0       N.D.
  15) ethanol                        4.97   31    124458     13.837 ppbV      94
  17) vinyl bromide                  0.00              0       N.D.
  19) acetone                        5.49   43     32921M6    2.307 ppbV
  21) trichlorofluoromethane         5.66  101      3699      0.219 ppbV      93
  22) isopropyl alcohol              5.76   45     21262      1.029 ppbV #    97
  27) tertiary butyl alcohol         6.44              0       N.D.
  28) methylene chloride             6.50   49      1424      0.095 ppbV      94
  29) 3-chloropropene                0.00              0       N.D.
  30) carbon disulfide               6.80              0       N.D.
  31) Freon 113                      6.80  101      1745      0.085 ppbV      87
  32) trans-1,2-dichloroethene       0.00              0       N.D.
  33) 1,1-dichloroethane             0.00              0       N.D.
  34) MTBE                           0.00              0       N.D.
  36) 2-butanone                     8.26   43      4516      0.118 ppbV #    91
  38) Ethyl Acetate                  0.00              0       N.D.
  39) chloroform                     9.07              0       N.D.
  40) Tetrahydrofuran                0.00              0       N.D. d
  42) 1,2-dichloroethane             9.91   62      1158      0.079 ppbV #    80
  44) hexane                         8.98   57      2996      0.102 ppbV #    19
  50) benzene                       10.73   78      6519      0.121 ppbV #    91
  53) cyclohexane                   11.05   56      1776      0.056 ppbV      99

TALL171222.M Wed Jan 03 11:48:10 2018                                Page: 1
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154999.D
Acq On    :  2 Jan 2018   9:38 PM
Operator  : AIRLAB15:RY
Sample    : L1747754-01,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:47:57 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
Sub List     : TO15-NY-7-SIM - .

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  56) 1,2-dichloropropane            0.00              0       N.D.
  57) bromodichloromethane           0.00              0       N.D.
  58) 1,4-dioxane                    0.00              0       N.D.
  60) 2,2,4-trimethylpentane        12.01              0       N.D.
  62) heptane                       12.33   43      5223      0.116 ppbV      97
  63) cis-1,3-dichloropropene        0.00              0       N.D.
  64) 4-methyl-2-pentanone          13.06              0       N.D.
  65) trans-1,3-dichloropropene      0.00              0       N.D.
  66) 1,1,2-trichloroethane          0.00              0       N.D.
  68) toluene                       14.13   91     12687      0.215 ppbV      97
  72) 2-hexanone                     0.00              0       N.D. d
  74) dibromochloromethane           0.00              0       N.D.
  75) 1,2-dibromoethane              0.00              0       N.D.
  80) chlorobenzene                  0.00              0       N.D.
  81) ethylbenzene                  16.27              0       N.D.
  83) m+p-xylene                    16.43   91      3755      0.062 ppbV      98
  84) bromoform                      0.00              0       N.D.
  85) styrene                       16.75              0       N.D.
  86) 1,1,2,2-tetrachloroethane      0.00              0       N.D.
  87) o-xylene                      16.85              0       N.D.
  96) 4-ethyl toluene               17.92              0       N.D.
  97) 1,3,5-trimethylbenzene        17.98              0       N.D.
  99) 1,2,4-trimethylbenzene        18.32              0       N.D.
 101) Benzyl Chloride                0.00              0       N.D. d
 102) 1,3-dichlorobenzene            0.00              0       N.D.
 103) 1,4-dichlorobenzene            0.00              0       N.D.
 107) 1,2-dichlorobenzene            0.00              0       N.D.
 115) 1,2,4-trichlorobenzene        20.38              0       N.D.
 119) hexachlorobutadiene            0.00              0       N.D.
 ---------------------------------------------------------------------------
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154999.D
Acq On    :  2 Jan 2018   9:38 PM
Operator  : AIRLAB15:RY
Sample    : L1747754-01,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:47:57 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

Sub List     : TO15-NY-7-SIM - .\Airlab15\2018\180102T\r154988.D
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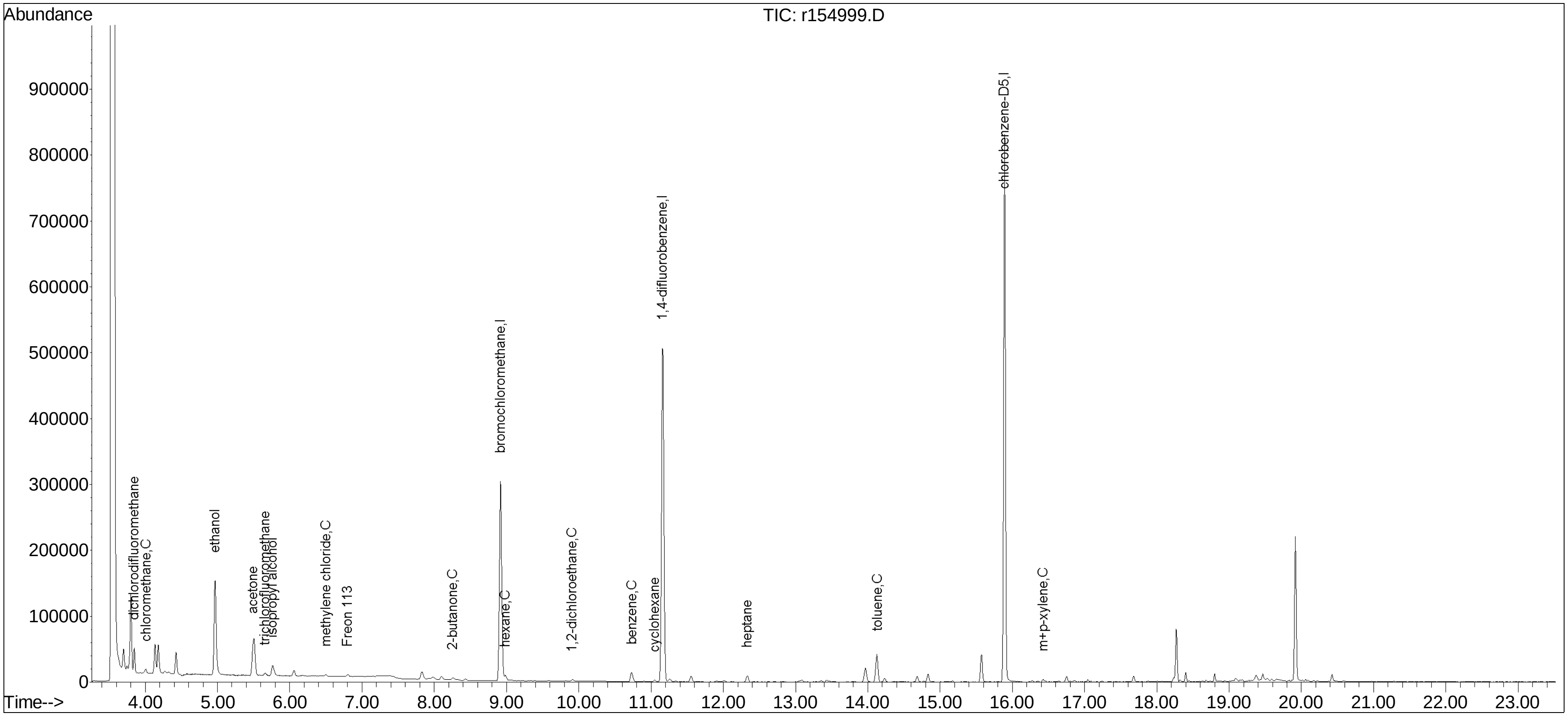
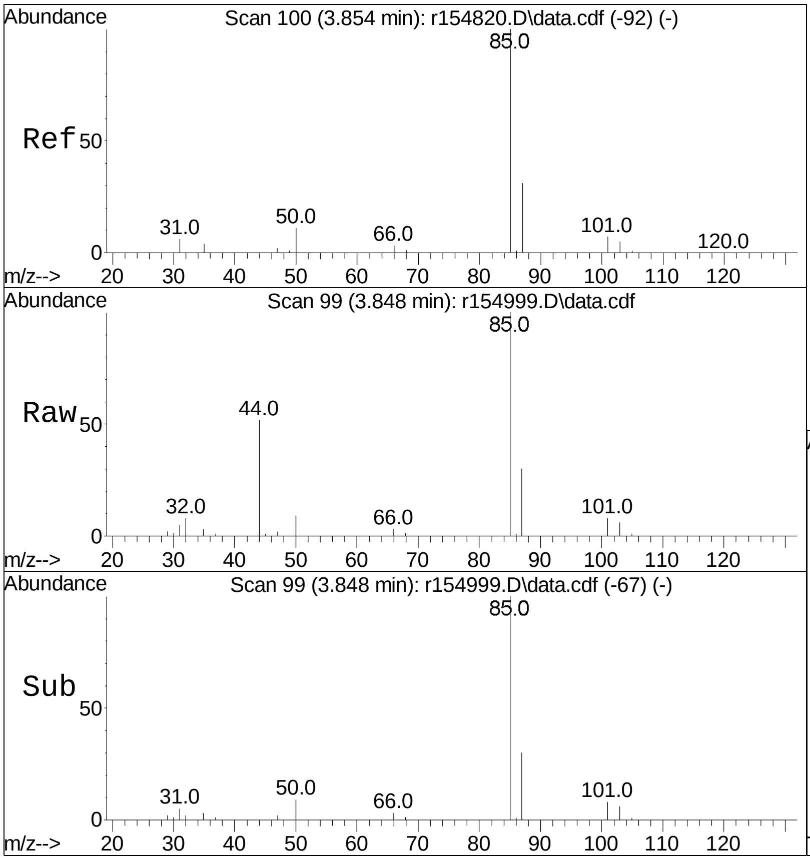
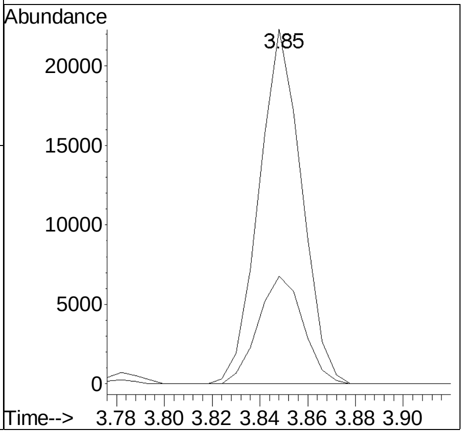
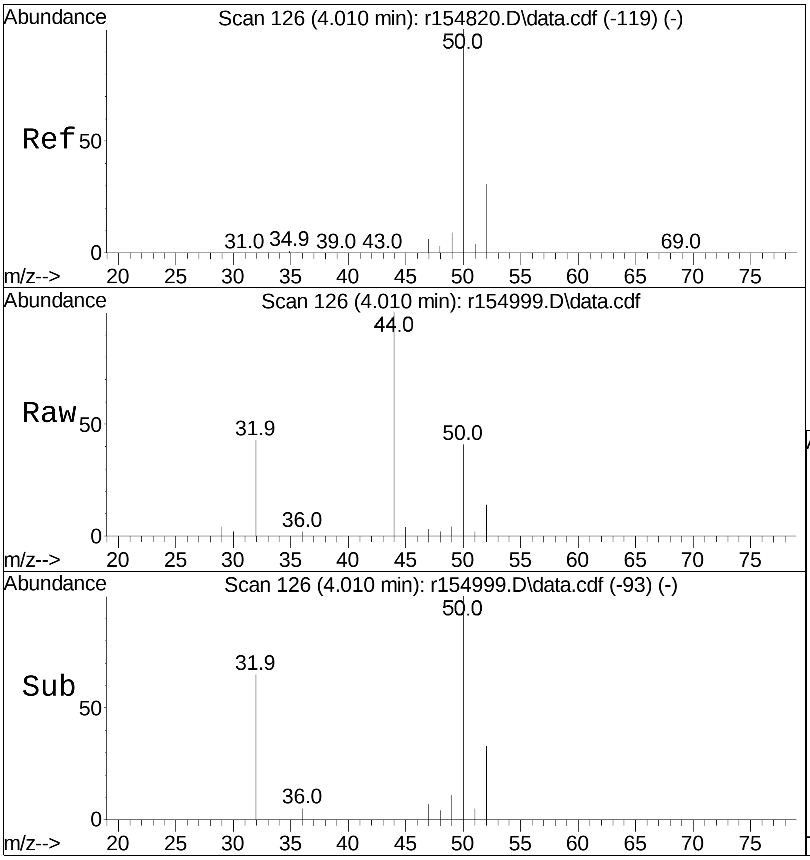




```
#5
dichlorodifluoromethane
Concen:    1.26 ppbV
RT:    3.85 min  Scan# 99
Delta R.T.  -0.006 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

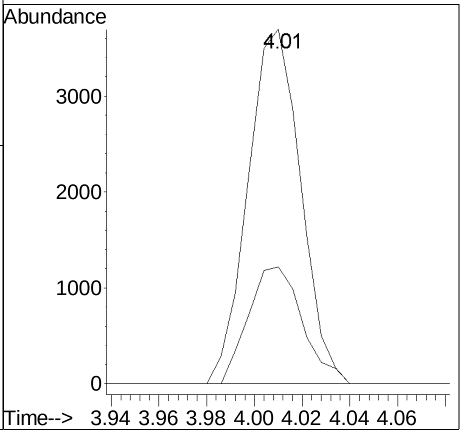
Tgt Ion: 85 Resp:   27733
Ion  Ratio  Lower  Upper
 85  100
 87   30.3   24.5   36.7
```

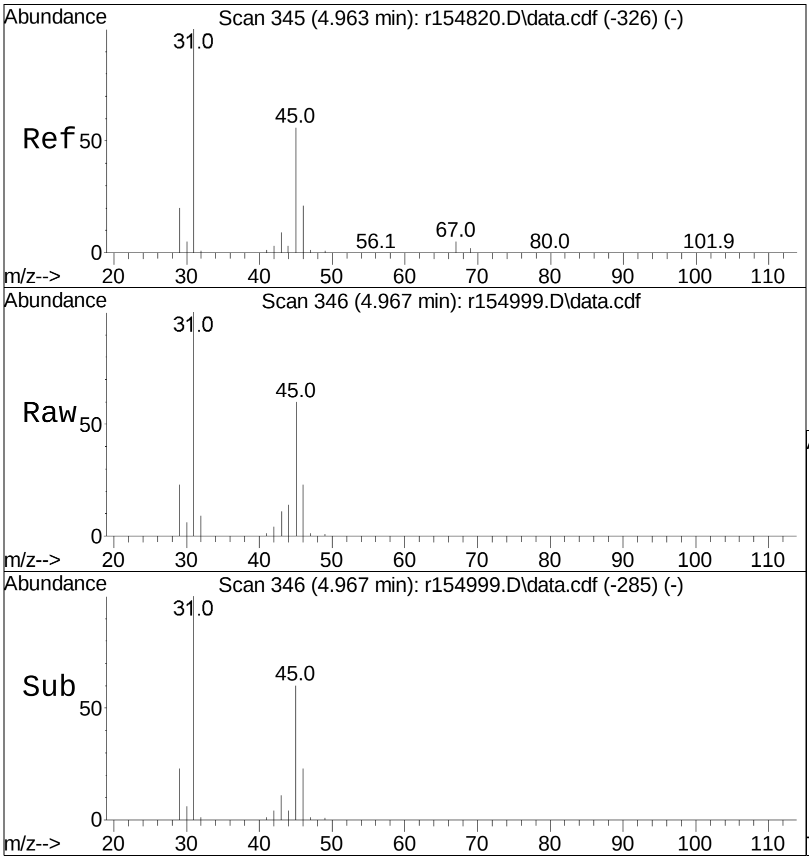




```
#6
chloromethane
Concen:    0.45 ppbV
RT:    4.01 min  Scan# 126
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

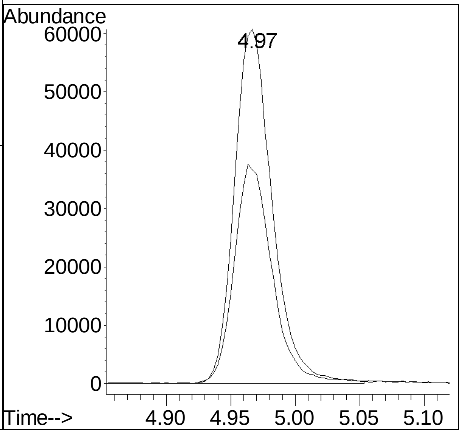
Tgt Ion: 50 Resp:    5675
Ion  Ratio  Lower  Upper
 50  100
 52   33.0   25.1   37.7
```

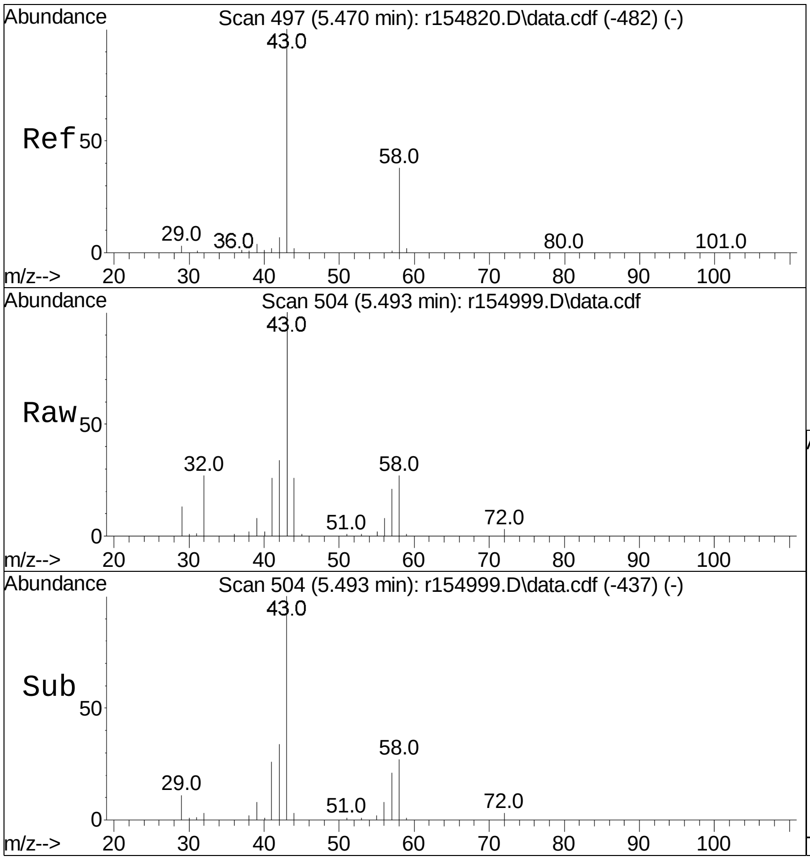




```
#15
ethanol
Concen:   13.84 ppbV
RT:    4.97 min  Scan# 346
Delta R.T.  0.003 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

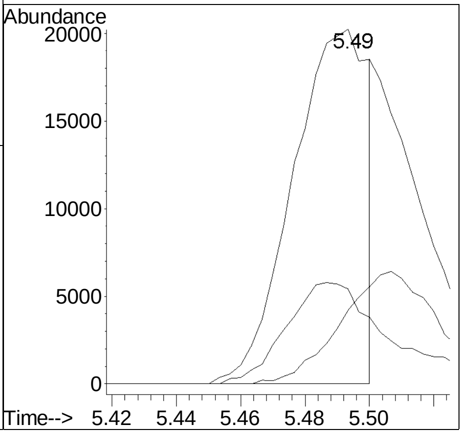
Tgt Ion: 31 Resp:  124458
Ion  Ratio  Lower  Upper
 31  100
 45   60.3   44.9   67.3
```

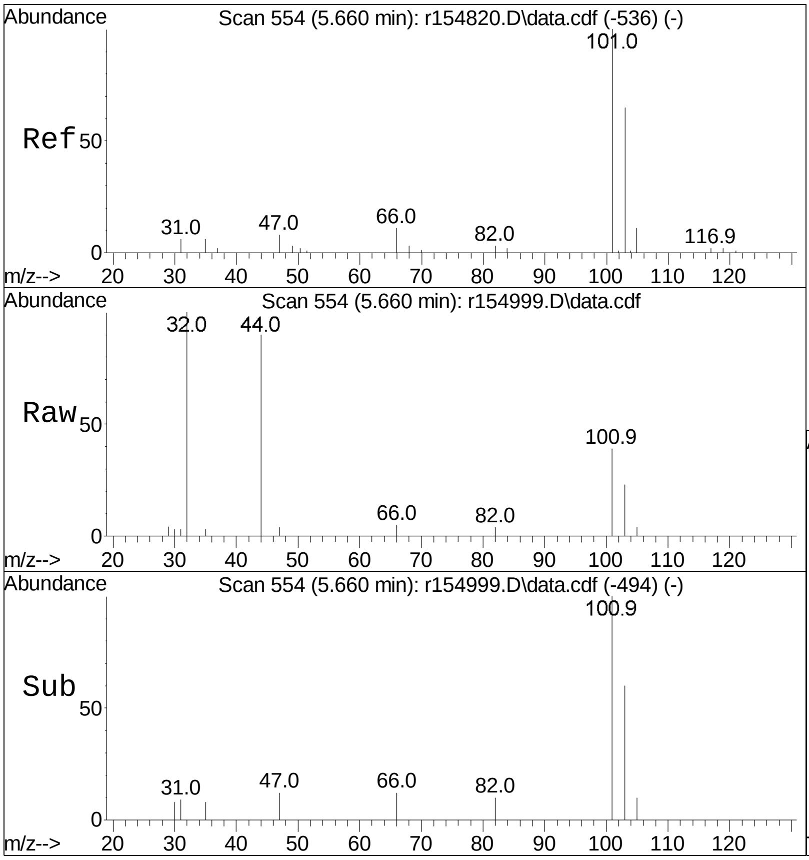




```
#19
acetone
Concen:    2.31 ppbV m
RT:    5.49 min  Scan# 504
Delta R.T.  0.023 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

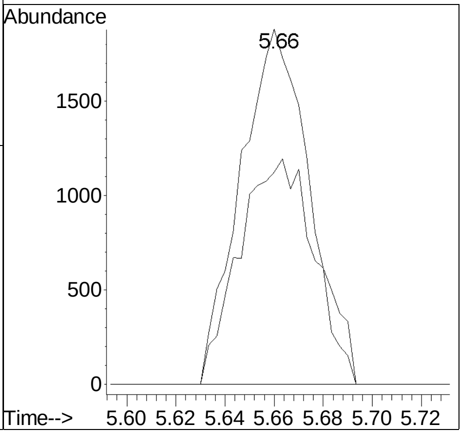
Tgt Ion: 43 Resp:   32921
Ion  Ratio  Lower  Upper
 43  100
 58   26.8   30.1   45.1#
 57   20.8    0.8    1.2#
```

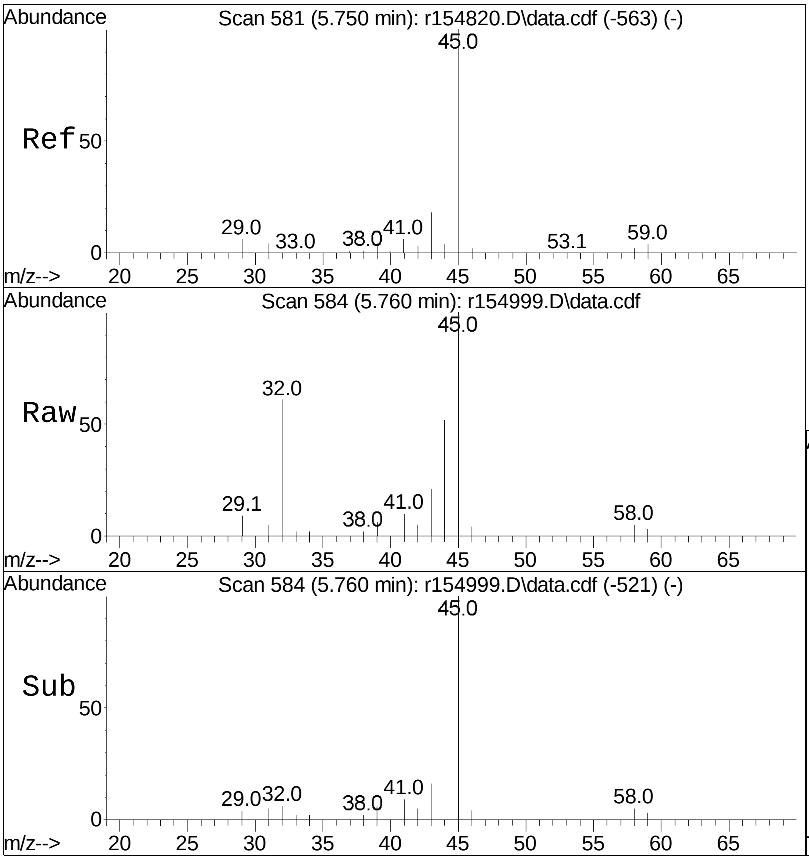




```
#21
trichlorofluoromethane
Concen:    0.22 ppbV
RT:    5.66 min  Scan# 554
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

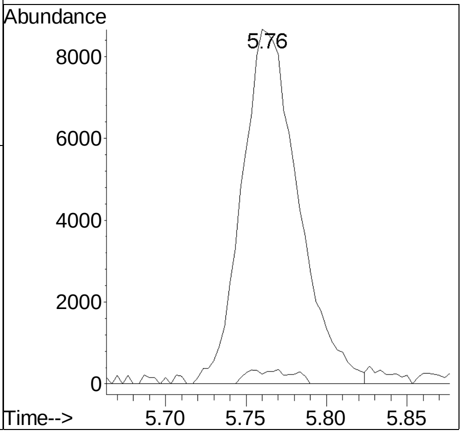
Tgt Ion:101 Resp:    3699
Ion  Ratio  Lower  Upper
101  100
103   59.7   52.2   78.2
```

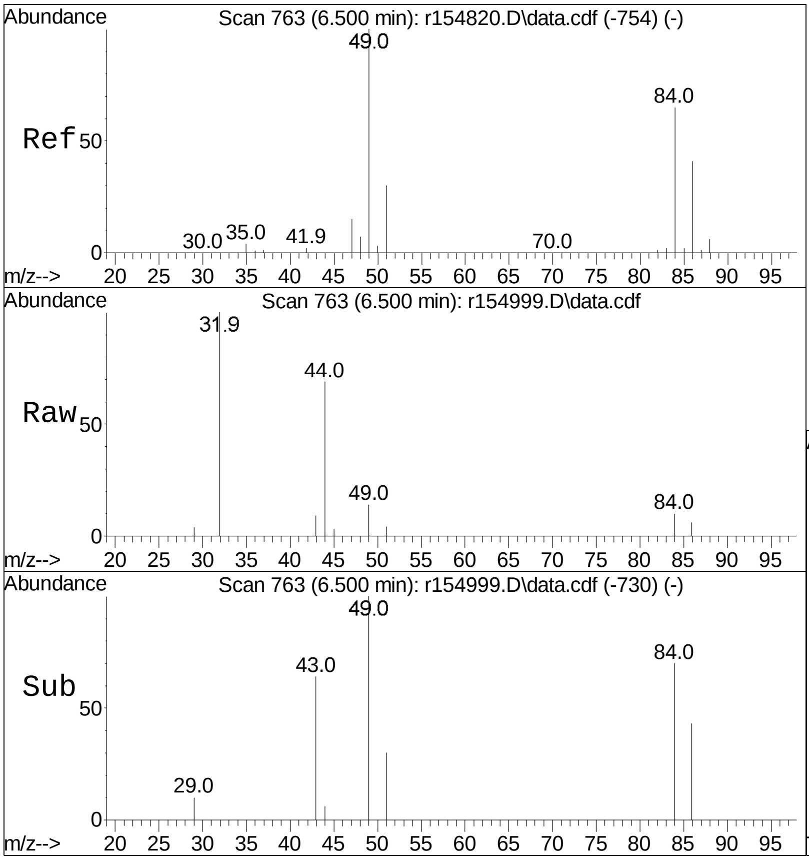




```
#22
isopropyl alcohol
Concen:    1.03 ppbV
RT:    5.76 min  Scan# 584
Delta R.T.  0.010 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

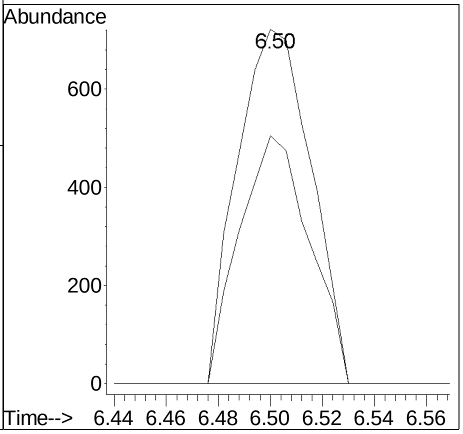
Tgt Ion: 45 Resp:   21262
Ion  Ratio  Lower  Upper
 45  100
 59    2.8    3.0    4.6#
```

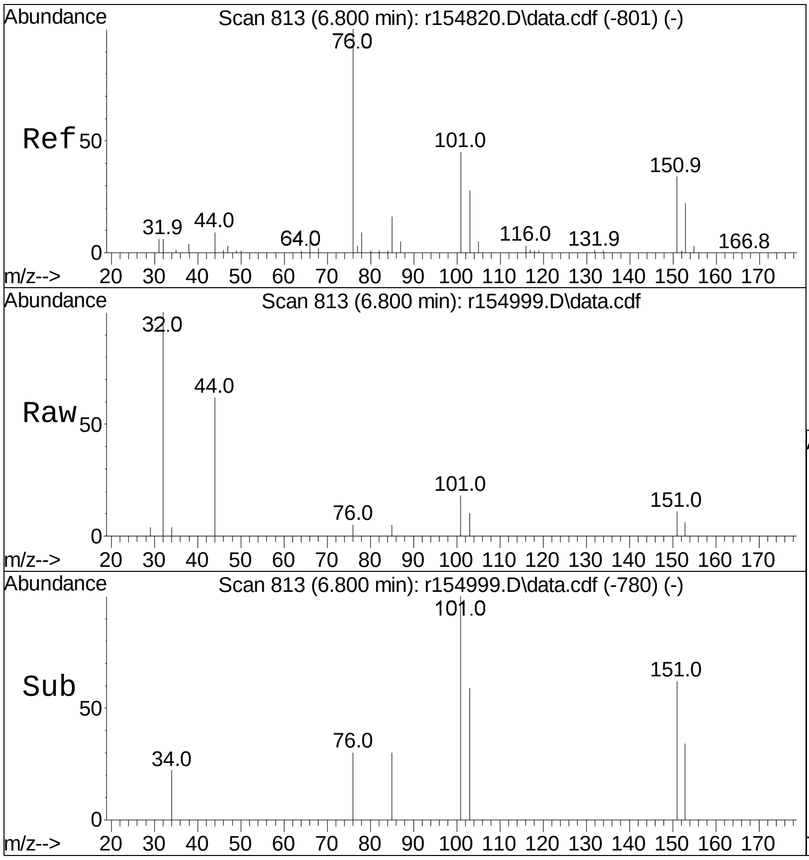




```
#28
methylene chloride
Concen:    0.10 ppbV
RT:    6.50 min  Scan# 763
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

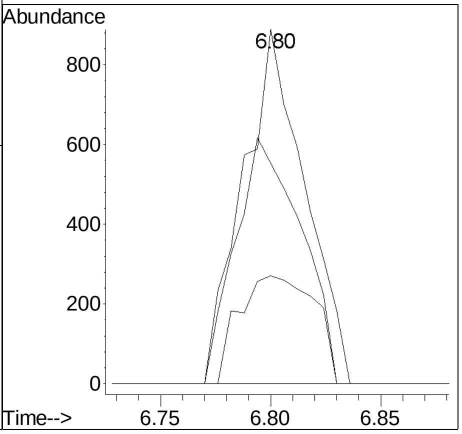
Tgt Ion: 49 Resp:    1424
Ion  Ratio  Lower  Upper
 49  100
 84   69.9   51.9   77.9
```

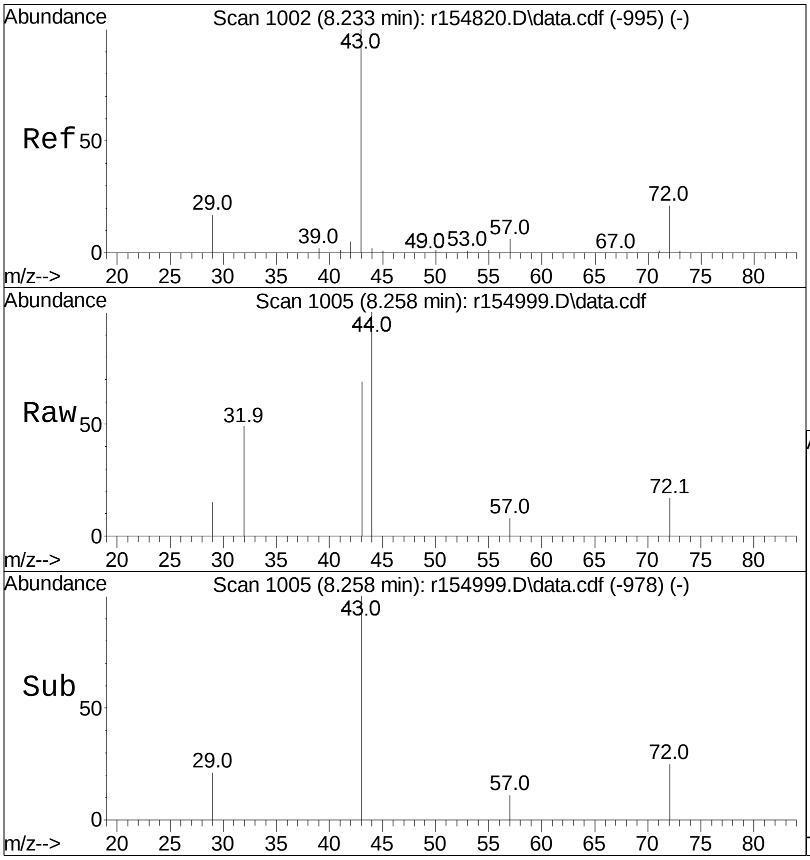




```
#31
Freon 113
Concen:    0.08 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

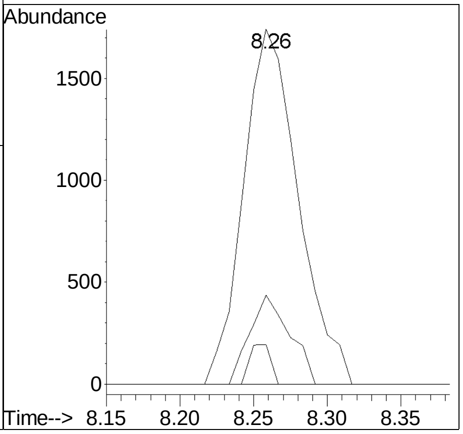
Tgt Ion:101 Resp:    1745
Ion  Ratio  Lower  Upper
101  100
 85   30.5   28.8   43.2
151   62.2   60.3   90.5
```

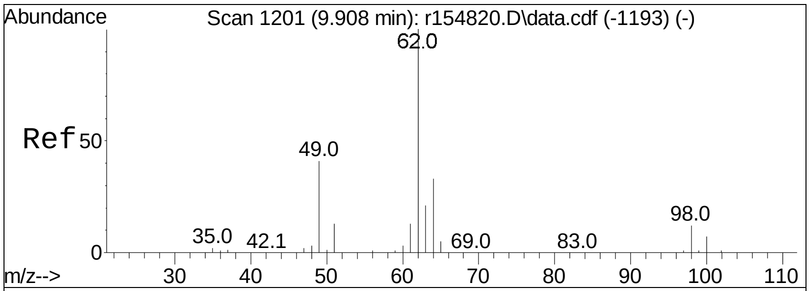


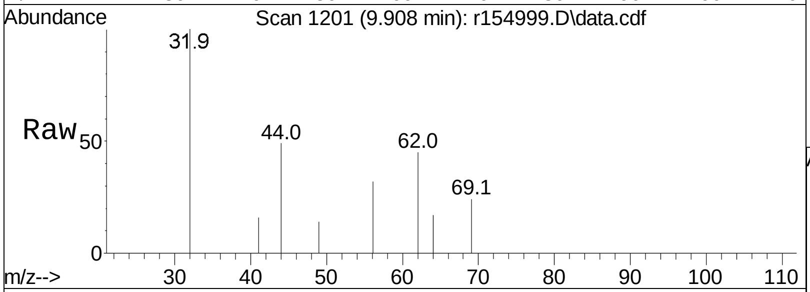


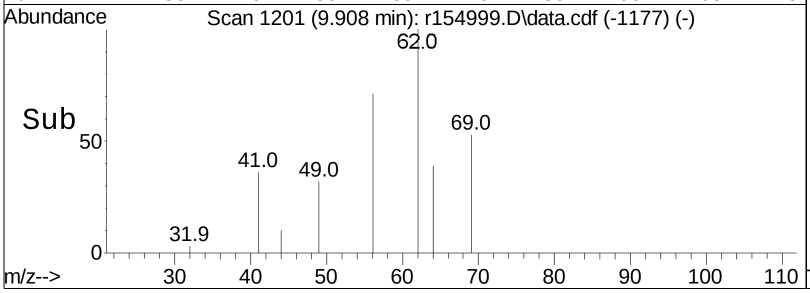
```
#36
2-butanone
Concen:    0.12 ppbV
RT:    8.26 min  Scan# 1005
Delta R.T.  0.025 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

Tgt Ion: 43 Resp:    4516
Ion  Ratio  Lower  Upper
 43  100
 72   25.0   17.2   25.8
 57   11.1    4.6    7.0#
```



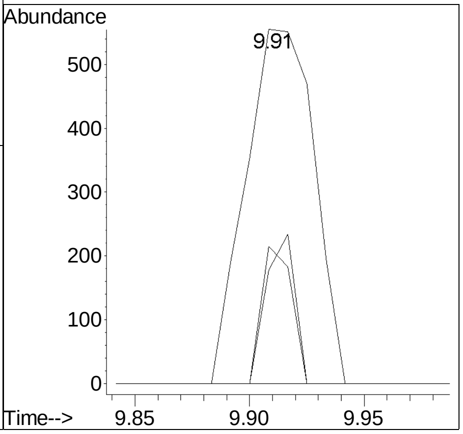


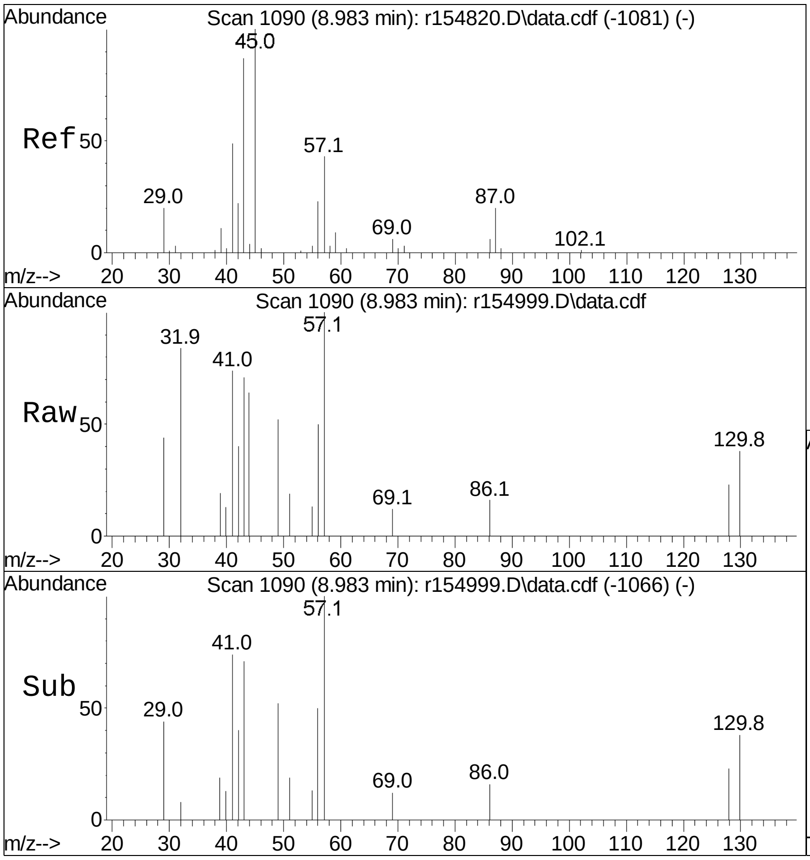




```
#42
1,2-dichloroethane
Concen:    0.08 ppbV
RT:    9.91 min  Scan# 1201
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

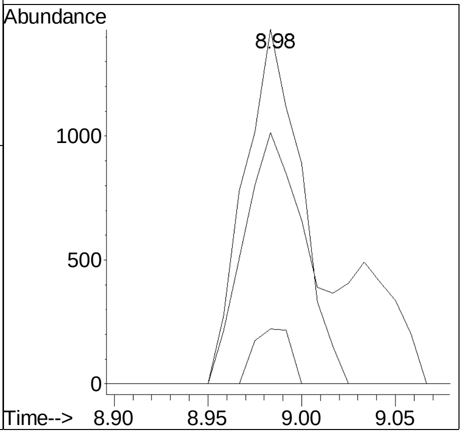
Tgt Ion: 62 Resp:    1158
Ion  Ratio  Lower  Upper
 62  100
 64   38.7   26.2   39.2
 49   32.1   33.1   49.7#
 63    0.0   16.6   25.0#
```

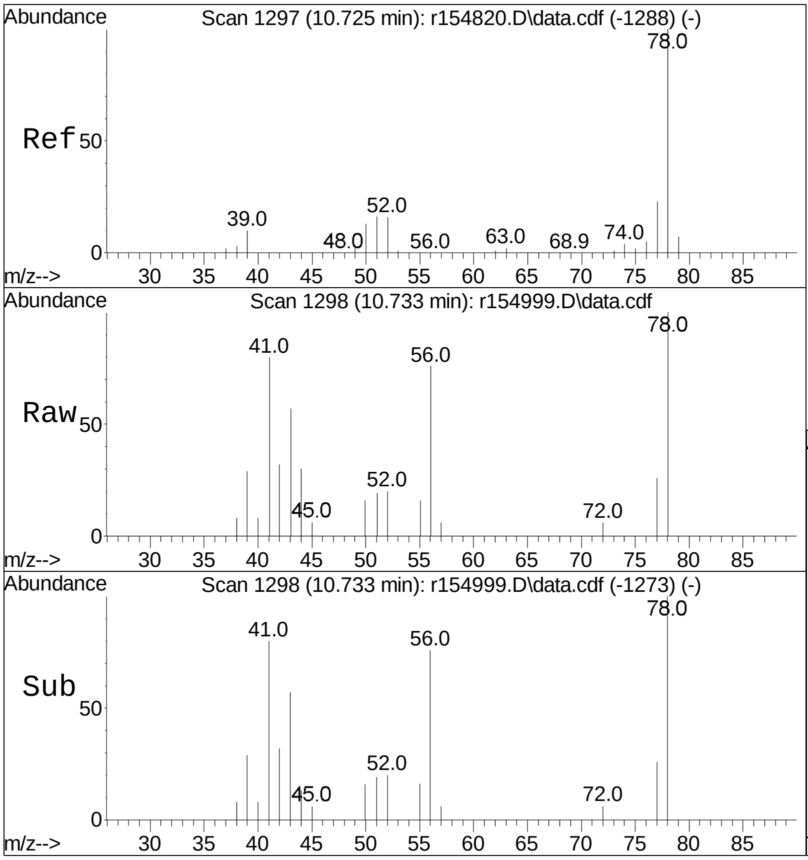




```
#44
hexane
Concen:    0.10 ppbV
RT:    8.98 min  Scan# 1090
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

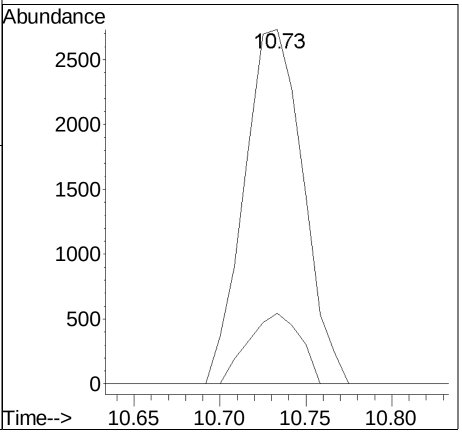
Tgt Ion: 57 Resp:    2996
Ion  Ratio  Lower  Upper
 57  100
 43   70.9  162.2  243.2#
 86   15.5   11.8   17.6
```





```
#50
benzene
Concen:    0.12 ppbV
RT:   10.73 min  Scan# 1298
Delta R.T.  0.008 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

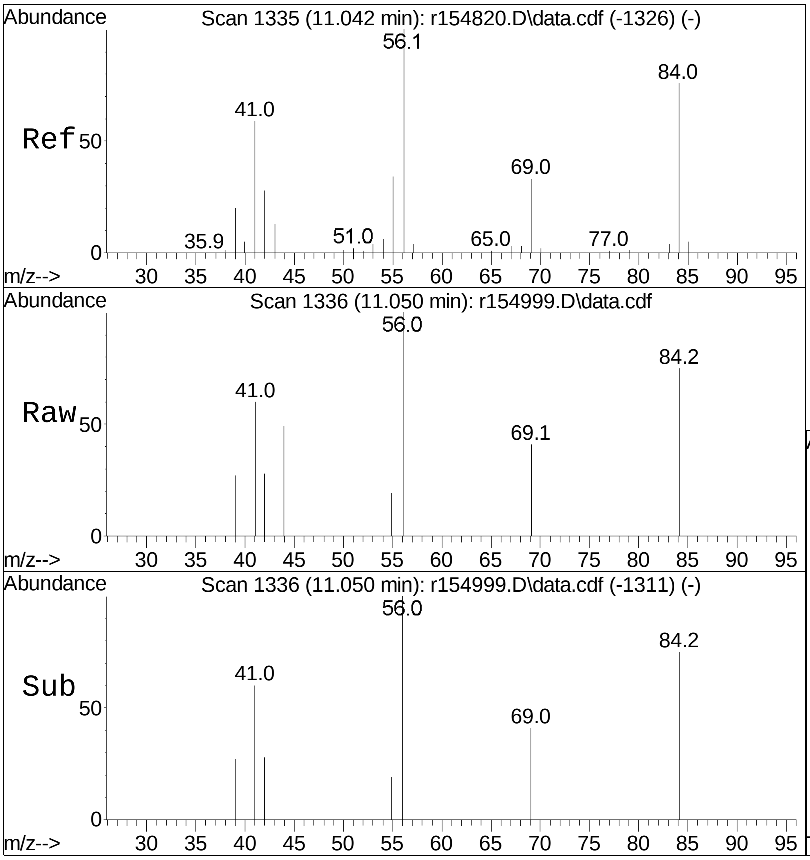
Tgt Ion: 78 Resp:    6519
Ion  Ratio  Lower  Upper
 78  100
 52   19.9   13.0   19.4#
```

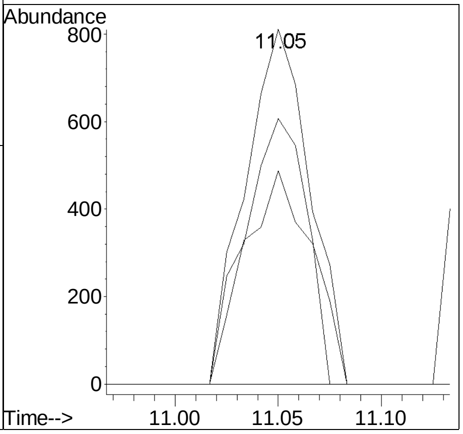


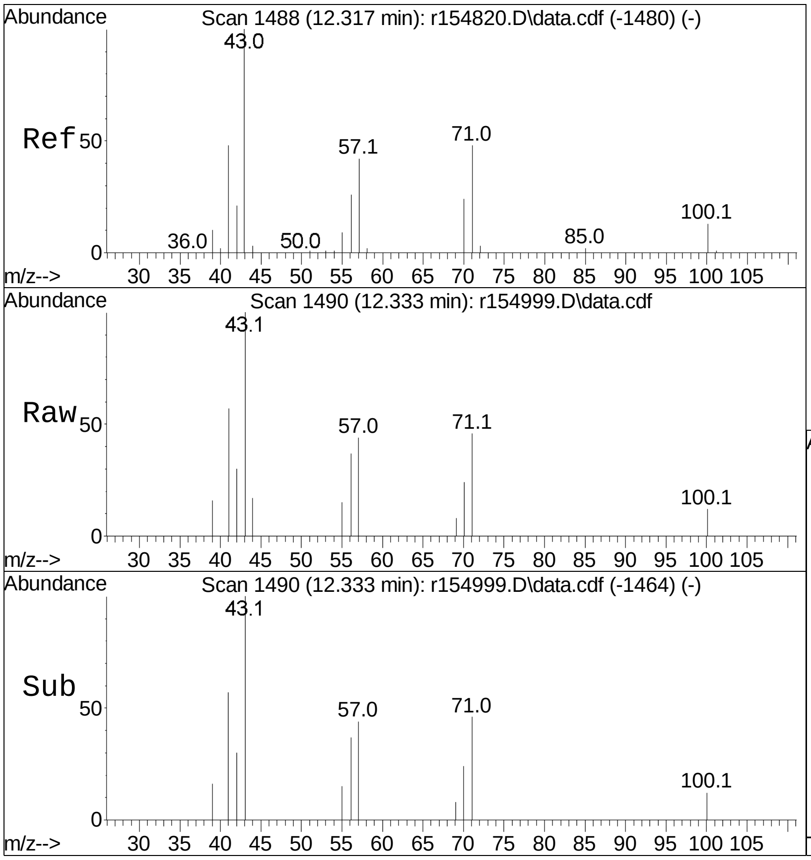
#53
cyclohexane
Concen: 0.06 ppbV
RT: 11.05 min Scan# 1336
Delta R.T. 0.008 min
Lab File: r154999.D
Acq: 2 Jan 2018 9:38 PM

Tgt Ion: 56 Resp: 1776

Ion	Ratio	Lower	Upper
56	100		
84	74.8	60.6	90.8
41	60.2	47.3	70.9

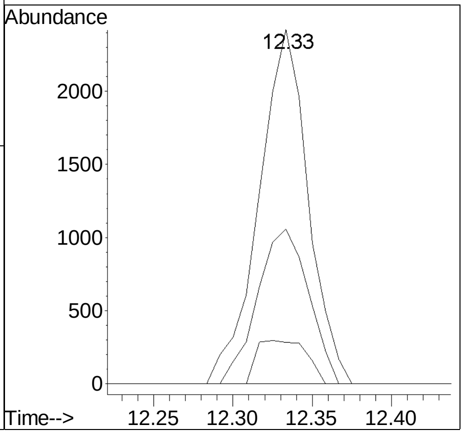


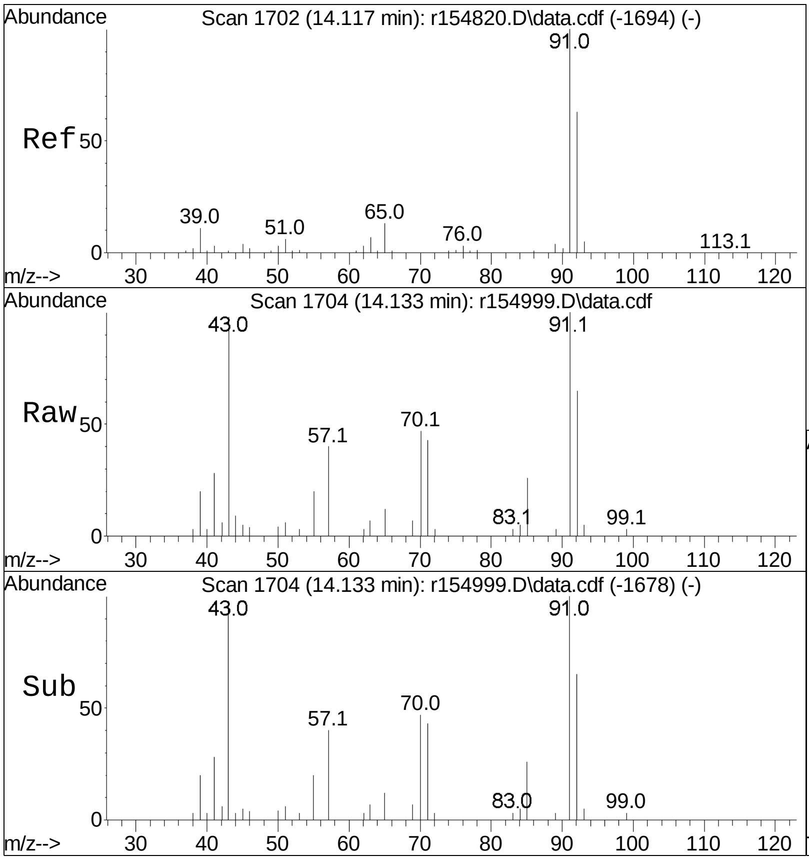




```
#62
heptane
Concen:    0.12 ppbV
RT:   12.33 min  Scan# 1490
Delta R.T.  0.017 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

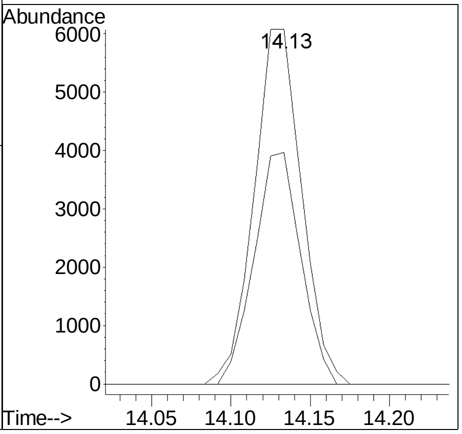
Tgt Ion: 43 Resp:    5223
Ion  Ratio  Lower  Upper
 43  100
 57   43.7   33.3   49.9
100   11.7   10.6   15.8
```

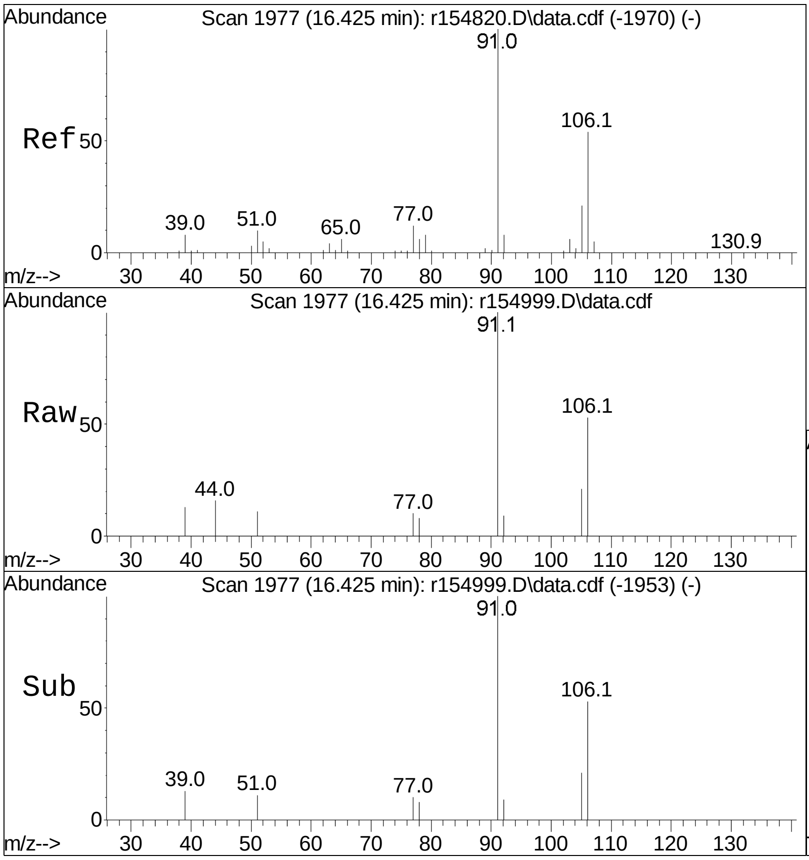




```
#68
toluene
Concen:    0.22 ppbV
RT:   14.13 min  Scan# 1704
Delta R.T.  0.017 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

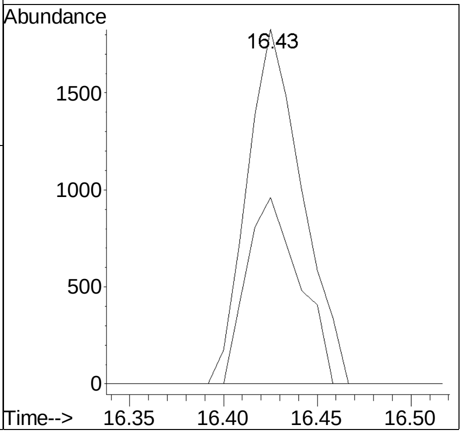
Tgt Ion: 91 Resp:   12687
Ion  Ratio  Lower  Upper
 91  100
 92   65.3   50.6   76.0
```





```
#83
m+p-xylene
Concen:    0.06 ppbV
RT:   16.43 min  Scan# 1977
Delta R.T.  0.000 min
Lab File:   r154999.D
Acq:  2 Jan 2018   9:38 PM

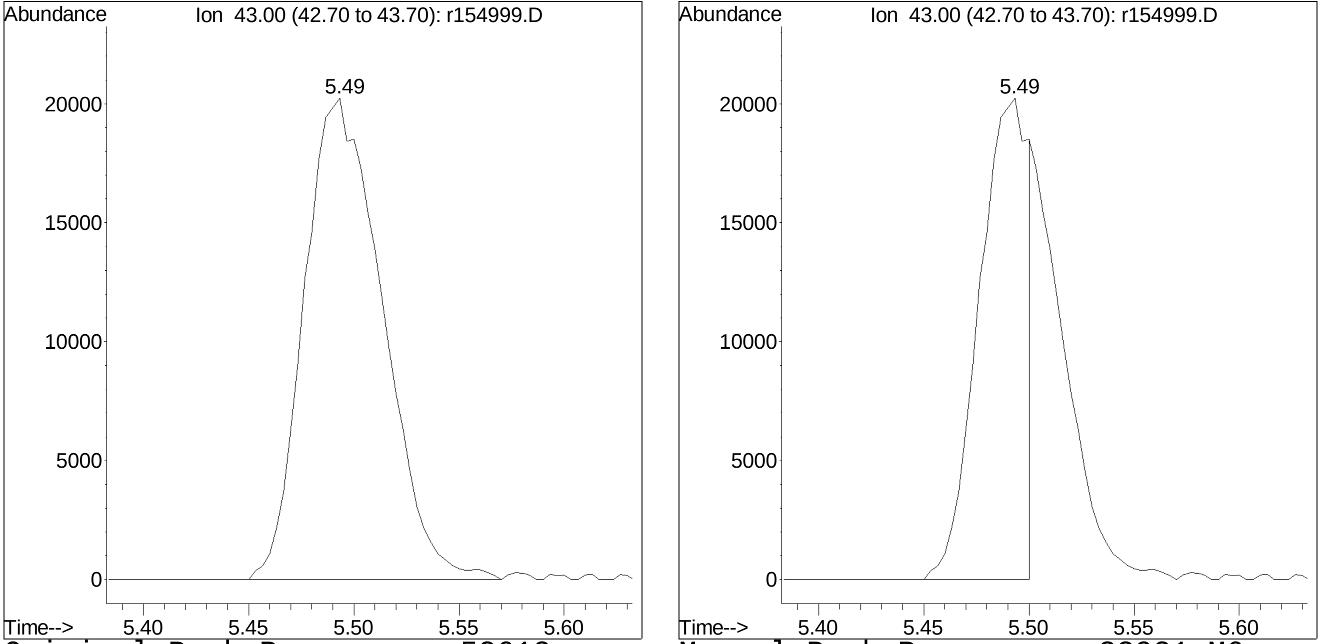
Tgt Ion: 91 Resp:    3755
Ion  Ratio  Lower  Upper
 91  100
106   52.6   43.4   65.2
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154999.D                 Operator    : AIRLAB15:RY
Date Inj'd  : 1/2/2018  9:38 PM         Instrument  :
Sample      : L1747754-01,3,250,250     Quant Date  : 1/3/2018  7:03 am
```

Compound #19: acetone



Original Peak Response = 52612   Manual Peak Response = 32921 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r155000.D
  Acq On    :  2 Jan 2018  10:21 PM
  Operator  : AIRLAB15:RY
  Sample    : L1747754-02,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 03 11:48:59 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : TO15-NY-7-SIM - .

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.92   49   205925    10.000 ppbV     0.00
     Standard Area  =       220148                 Recovery   =   93.54%
    43) 1,4-difluorobenzene         11.16  114   536036    10.000 ppbV     0.00
     Standard Area  =       557225                 Recovery   =   96.20%
    67) chlorobenzene-D5            15.89   54    90810    10.000 ppbV     0.00
     Standard Area  =        97822                 Recovery   =   92.83%

   System Monitoring Compounds

   Target Compounds                                                   Qvalue
     5) dichlorodifluoromethane      3.85   85     27893      1.256 ppbV      94
     6) chloromethane                4.01   50      5800      0.459 ppbV      99
     7) Freon-114                    4.11              0       N.D.
    10) 1,3-butadiene                0.00              0       N.D.
    13) bromomethane                 0.00              0       N.D.
    14) chloroethane                 0.00              0       N.D.
    15) ethanol                      4.97   31    124429     13.674 ppbV      94
    17) vinyl bromide                0.00              0       N.D.
    19) acetone                      5.49   43     28065M6    1.944 ppbV
    21) trichlorofluoromethane       5.66  101      4789      0.280 ppbV      97
    22) isopropyl alcohol            5.76   45     23702      1.134 ppbV #    95
    27) tertiary butyl alcohol       6.43   59       995      0.050 ppbV #    66
    28) methylene chloride           6.50   49      1843      0.122 ppbV #    81
    29) 3-chloropropene              0.00              0       N.D.
    30) carbon disulfide             6.80              0       N.D.
    31) Freon 113                    6.80  101      3486      0.168 ppbV      95
    32) trans-1,2-dichloroethene     0.00              0       N.D.
    33) 1,1-dichloroethane           0.00              0       N.D.
    34) MTBE                         0.00              0       N.D.
    36) 2-butanone                   8.26   43      5525      0.142 ppbV #    96
    38) Ethyl Acetate                0.00              0       N.D.
    39) chloroform                   9.07              0       N.D.
    40) Tetrahydrofuran              0.00              0       N.D. d
    42) 1,2-dichloroethane           9.92   62      1202      0.081 ppbV #    83
    44) hexane                       8.98   57      3098      0.105 ppbV #    15
    50) benzene                     10.73   78      7089      0.130 ppbV      96
    53) cyclohexane                 11.04   56      1856      0.059 ppbV      87

TALL171222.M Wed Jan 03 11:49:10 2018                               Page: 1
```

```
                       Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r155000.D
Acq On    :  2 Jan 2018  10:21 PM
Operator  : AIRLAB15:RY
Sample    : L1747754-02,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:48:59 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
Sub List     : TO15-NY-7-SIM - .

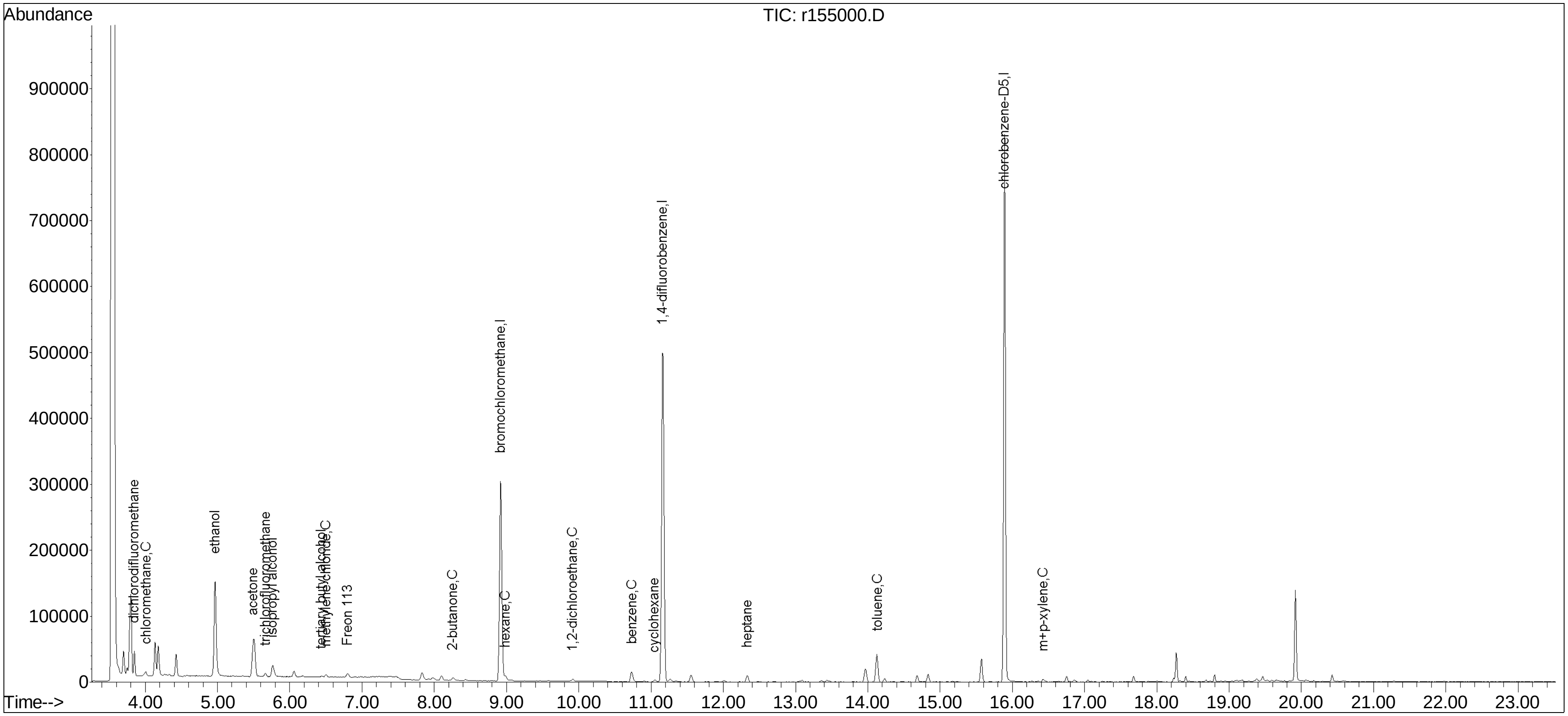
        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  56) 1,2-dichloropropane          0.00              0       N.D.
  57) bromodichloromethane         0.00              0       N.D.
  58) 1,4-dioxane                  0.00              0       N.D.
  60) 2,2,4-trimethylpentane      12.01              0       N.D.
  62) heptane                     12.33   43      5378      0.118 ppbV #    91
  63) cis-1,3-dichloropropene      0.00              0       N.D.
  64) 4-methyl-2-pentanone        13.06              0       N.D.
  65) trans-1,3-dichloropropene    0.00              0       N.D.
  66) 1,1,2-trichloroethane       13.96              0       N.D.
  68) toluene                     14.13   91     12449      0.214 ppbV     100
  72) 2-hexanone                  14.46              0       N.D.
  74) dibromochloromethane         0.00              0       N.D.
  75) 1,2-dibromoethane            0.00              0       N.D.
  80) chlorobenzene                0.00              0       N.D.
  81) ethylbenzene                16.27              0       N.D.
  83) m+p-xylene                  16.43   91      3580      0.060 ppbV      96
  84) bromoform                    0.00              0       N.D.
  85) styrene                     16.75              0       N.D.
  86) 1,1,2,2-tetrachloroethane    0.00              0       N.D.
  87) o-xylene                    16.84              0       N.D.
  96) 4-ethyl toluene              0.00              0       N.D. d
  97) 1,3,5-trimethylbenzene      17.98              0       N.D.
  99) 1,2,4-trimethylbenzene      18.32              0       N.D.
 101) Benzyl Chloride              0.00              0       N.D.
 102) 1,3-dichlorobenzene          0.00              0       N.D.
 103) 1,4-dichlorobenzene          0.00              0       N.D.
 107) 1,2-dichlorobenzene          0.00              0       N.D.
 115) 1,2,4-trichlorobenzene       0.00              0       N.D.
 119) hexachlorobutadiene          0.00              0       N.D.
 ---------------------------------------------------------------------------
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

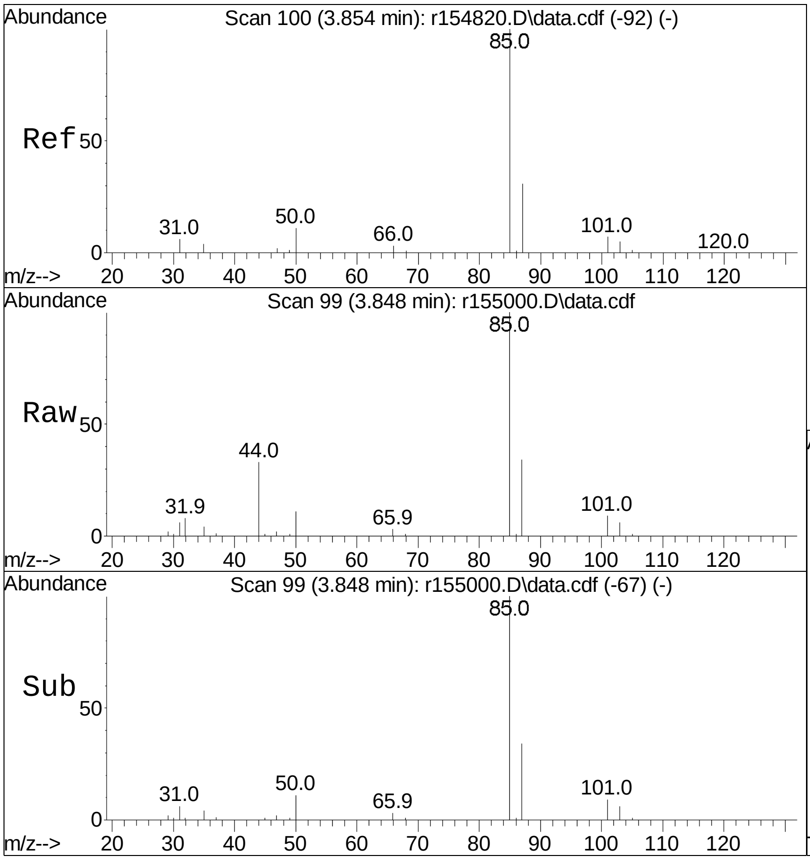
```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r155000.D
Acq On    :  2 Jan 2018  10:21 PM
Operator  : AIRLAB15:RY
Sample    : L1747754-02,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:48:59 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

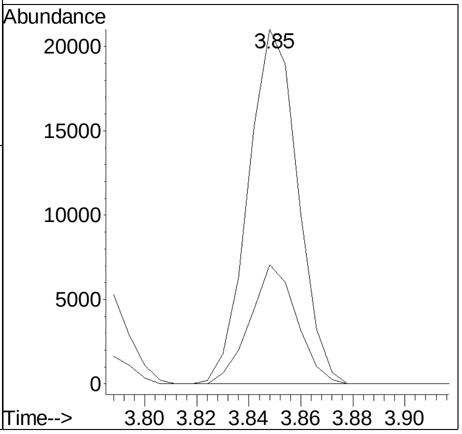
Sub List     : TO15-NY-7-SIM - .\Airlab15\2018\180102T\r154988.D
```

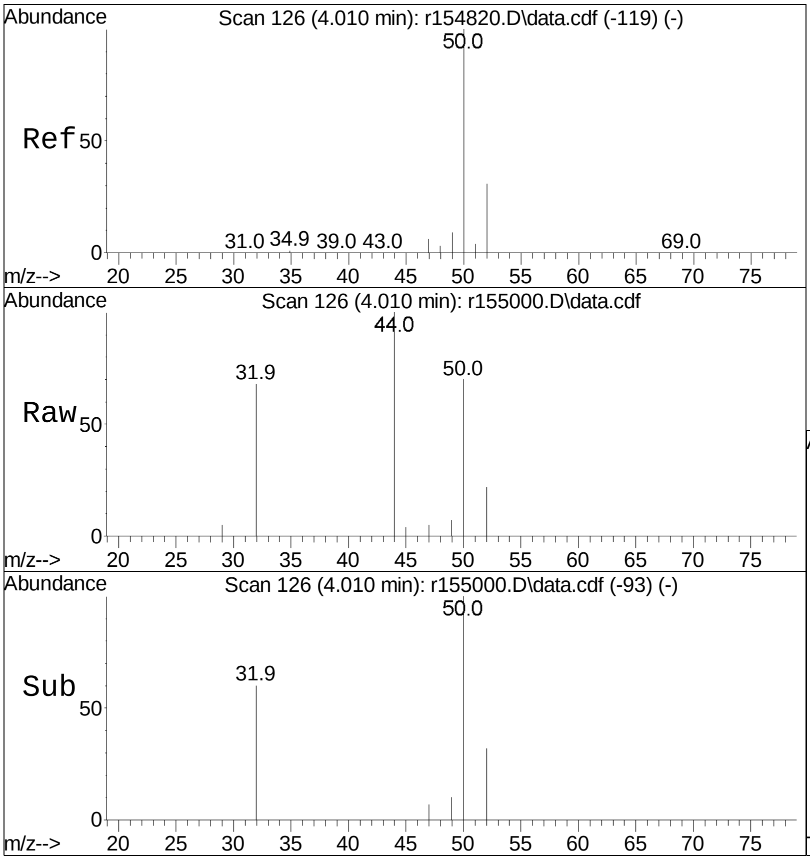




```
#5
dichlorodifluoromethane
Concen:    1.26 ppbV
RT:    3.85 min  Scan# 99
Delta R.T.  -0.006 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

Tgt Ion: 85 Resp:   27893
Ion  Ratio  Lower  Upper
 85  100
 87   33.6   24.5   36.7
```



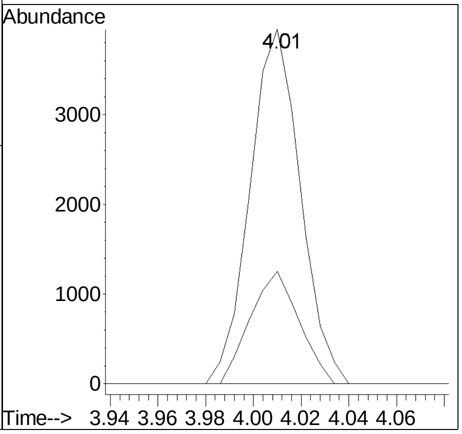

Scan 126 (4.010 min): r154820.D\data.cdf (-119) (-)

Scan 126 (4.010 min): r155000.D\data.cdf

Scan 126 (4.010 min): r155000.D\data.cdf (-93) (-)

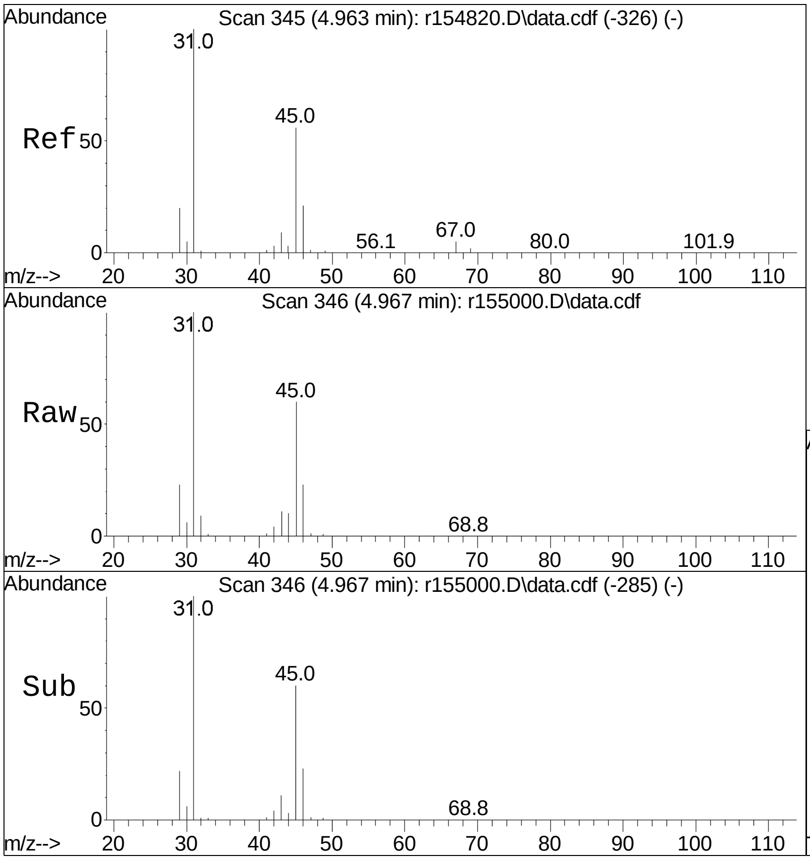
```
#6
chloromethane
Concen:    0.46 ppbV
RT:    4.01 min  Scan# 126
Delta R.T.  0.000 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

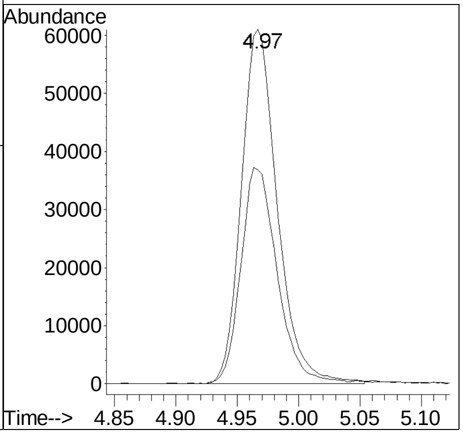
Tgt Ion: 50 Resp:    5800
Ion  Ratio  Lower  Upper
 50  100
 52   31.7   25.1   37.7
```

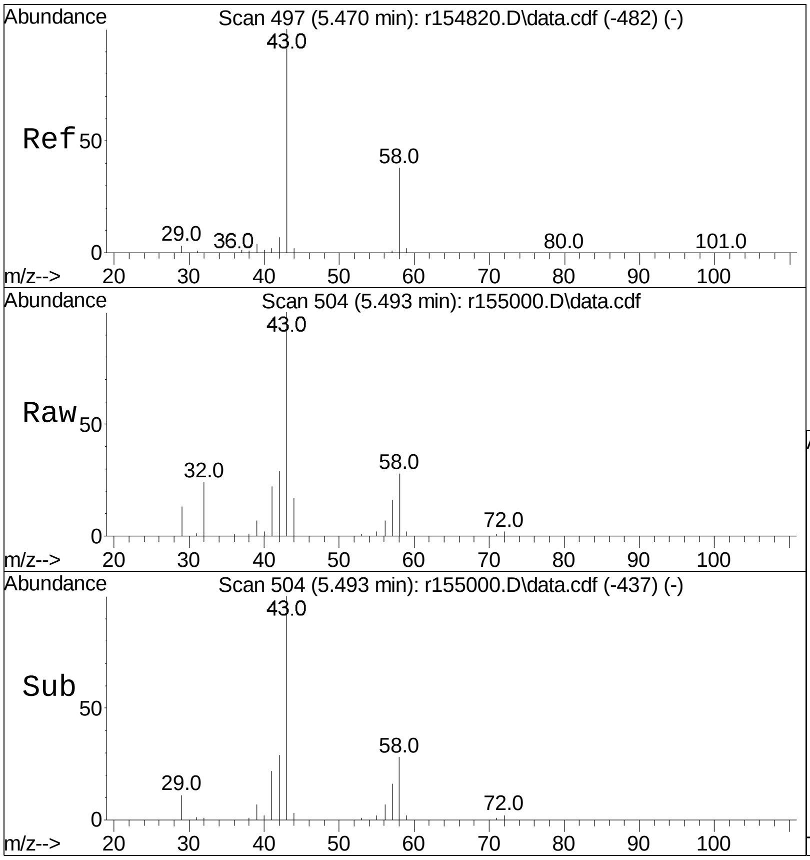


```
#15
ethanol
Concen:   13.67 ppbV
RT:    4.97 min  Scan# 346
Delta R.T.  0.003 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

Tgt Ion: 31 Resp:  124429
Ion  Ratio  Lower  Upper
 31  100
 45   60.4   44.9   67.3
```

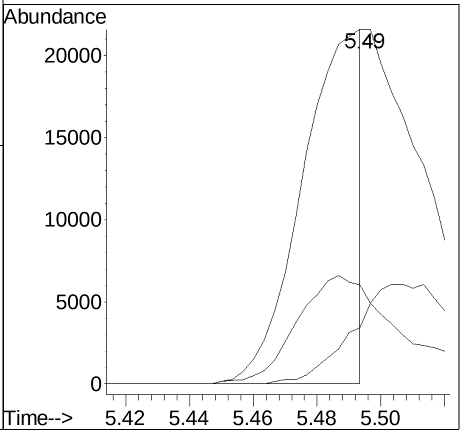


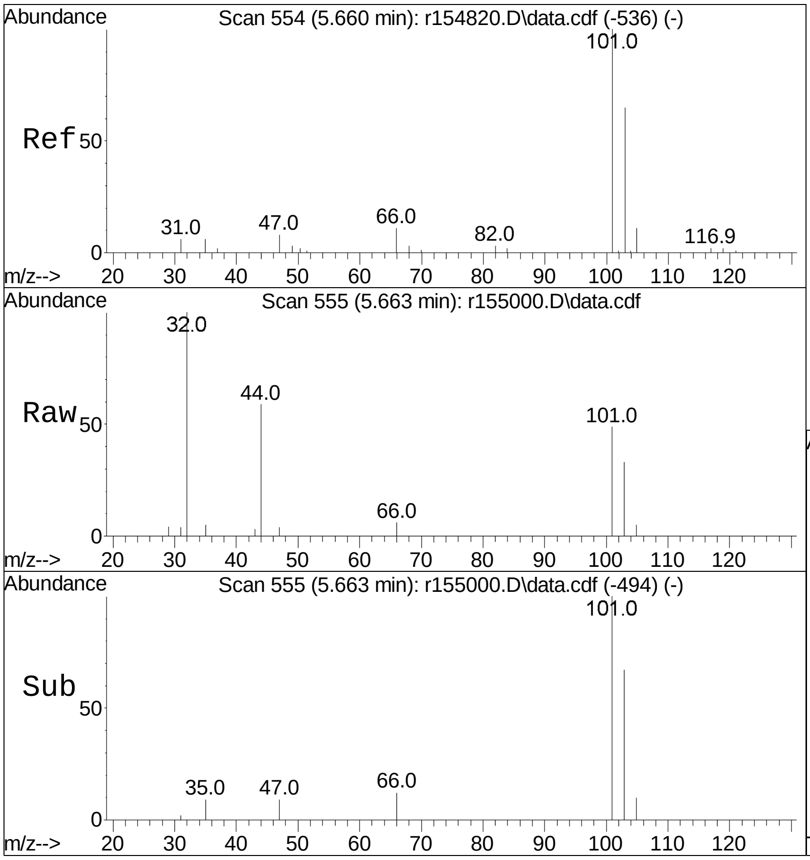




```
#19
acetone
Concen:    1.94 ppbV m
RT:    5.49 min  Scan# 504
Delta R.T.  0.023 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

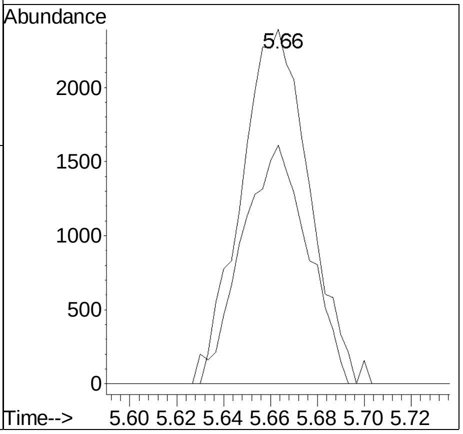
Tgt Ion: 43 Resp:   28065
Ion  Ratio  Lower  Upper
 43  100
 58   27.9   30.1   45.1#
 57   15.8    0.8    1.2#
```

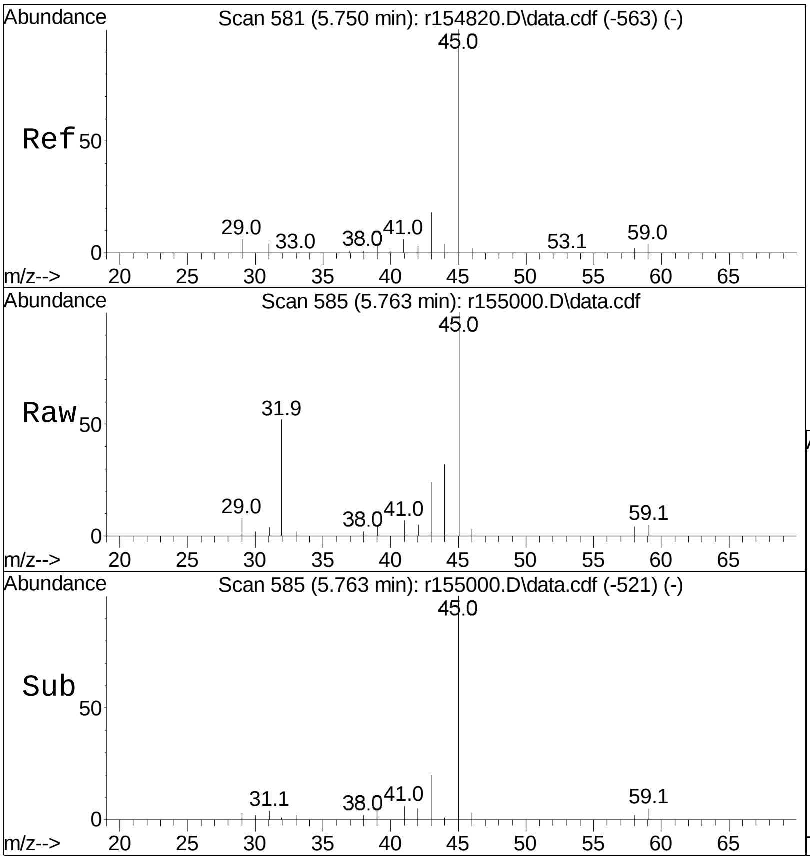




```
#21
trichlorofluoromethane
Concen:    0.28 ppbV
RT:    5.66 min  Scan# 555
Delta R.T.  0.003 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

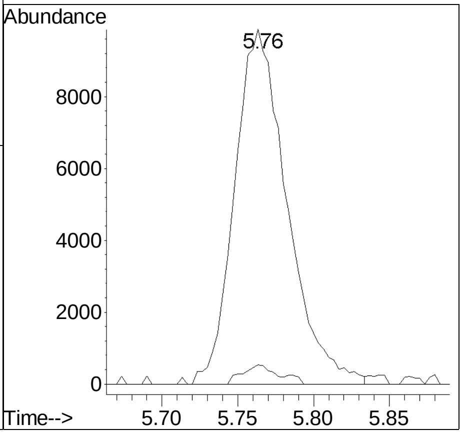
Tgt Ion:101 Resp:    4789
Ion  Ratio  Lower  Upper
101  100
103   67.3   52.2   78.2
```

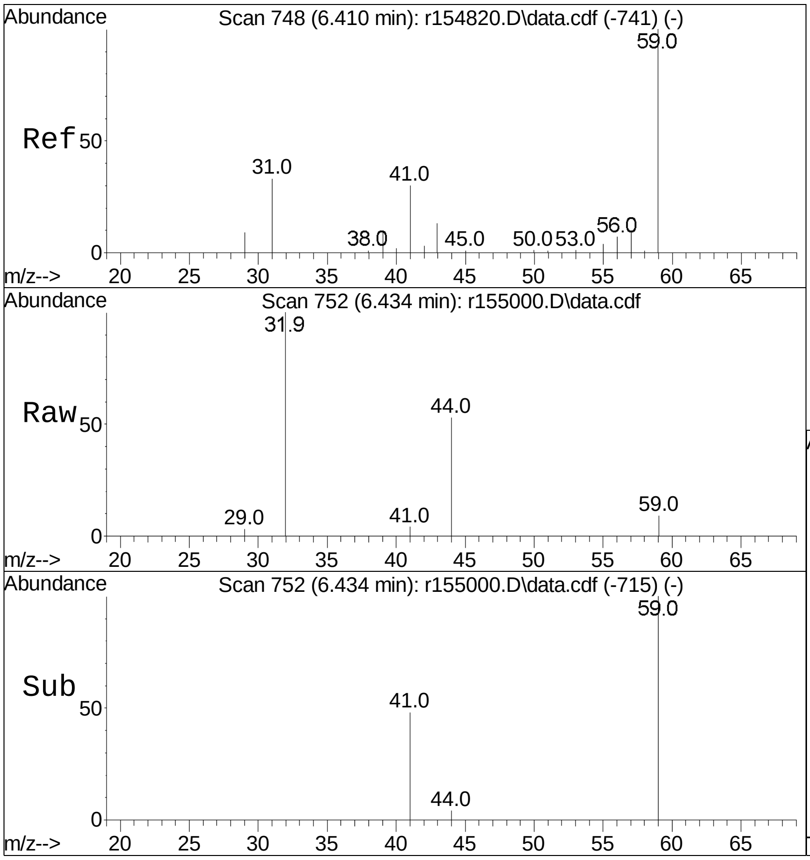




```
#22
isopropyl alcohol
Concen:    1.13 ppbV
RT:    5.76 min  Scan# 585
Delta R.T.  0.013 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

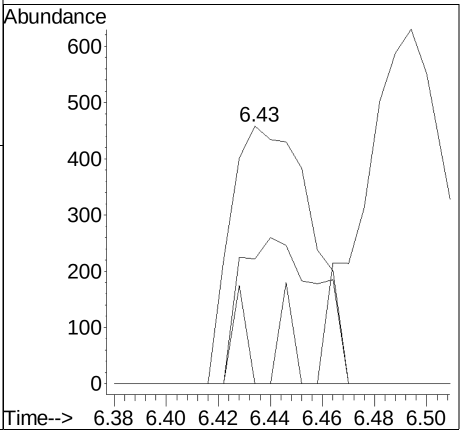
Tgt Ion: 45 Resp:   23702
Ion  Ratio  Lower  Upper
 45  100
 59    5.4    3.0    4.6#
```

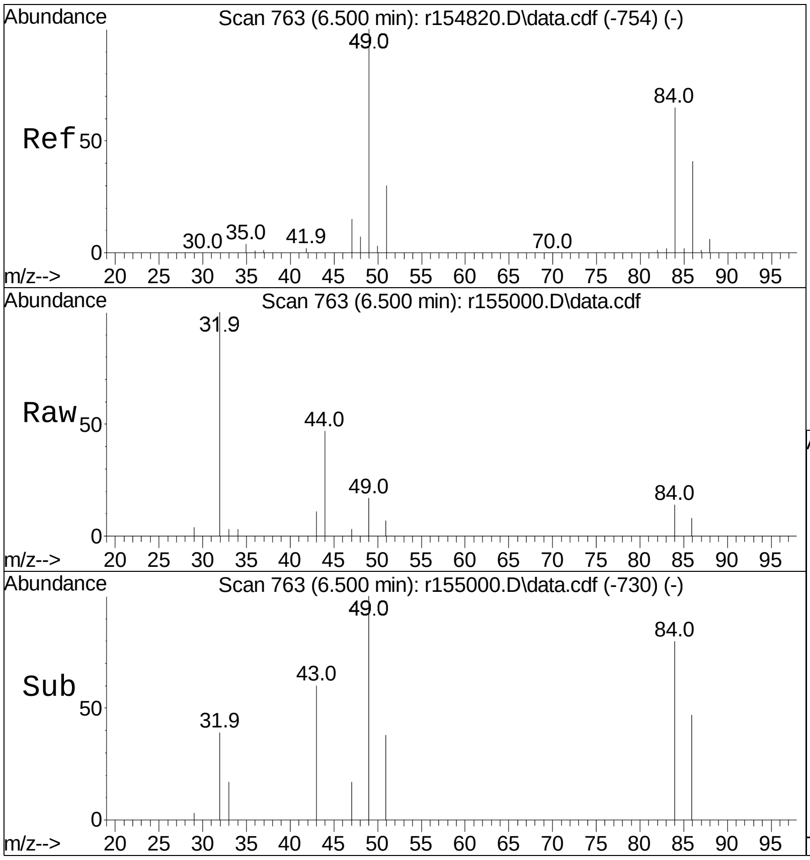




```
#27
tertiary butyl alcohol
Concen:    0.05 ppbV
RT:    6.43 min  Scan# 752
Delta R.T.  0.024 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

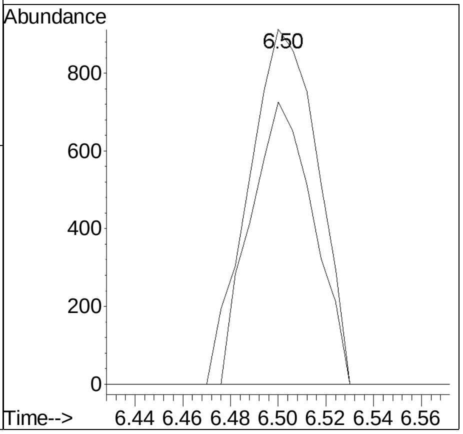
Tgt Ion: 59 Resp:     995
Ion  Ratio  Lower  Upper
 59  100
 41   48.5   23.9   35.9#
 43    0.0   10.3   15.5#
```

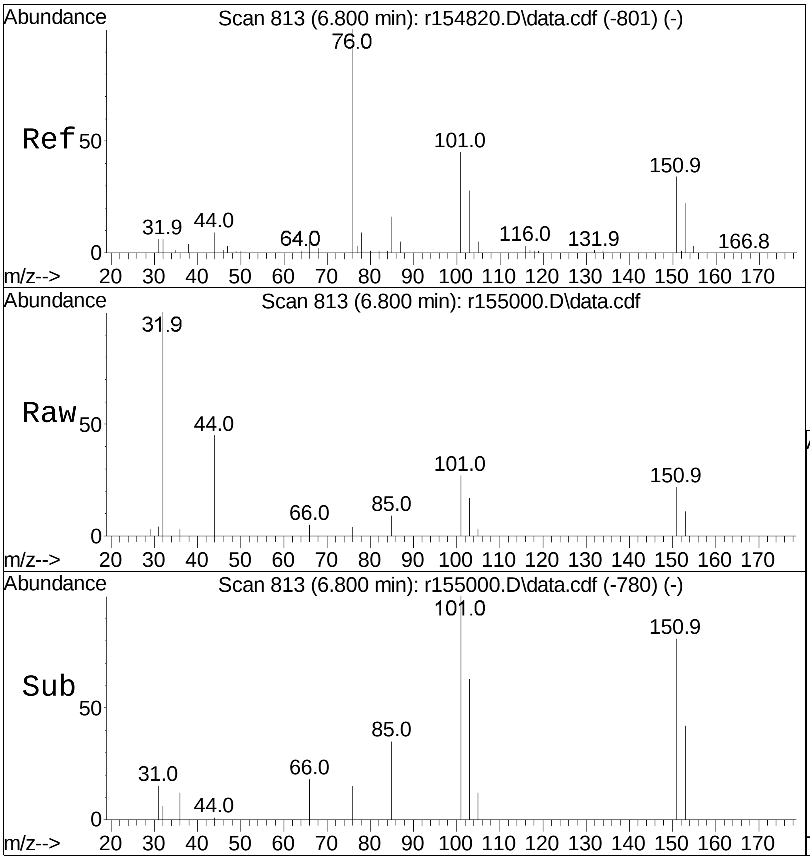




#28
methylene chloride
Concen: 0.12 ppbV
RT: 6.50 min Scan# 763
Delta R.T. 0.000 min
Lab File: r155000.D
Acq: 2 Jan 2018 10:21 PM

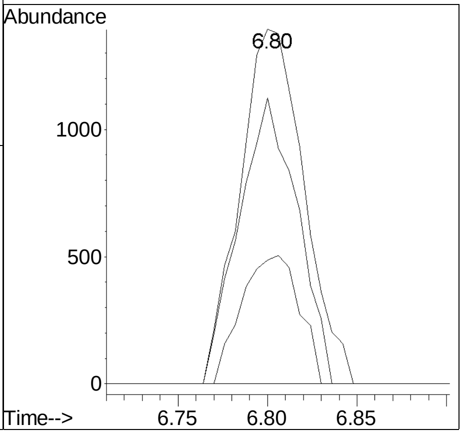
```
Tgt Ion: 49 Resp:    1843
Ion  Ratio  Lower  Upper
 49  100
 84   79.5   51.9   77.9#
```

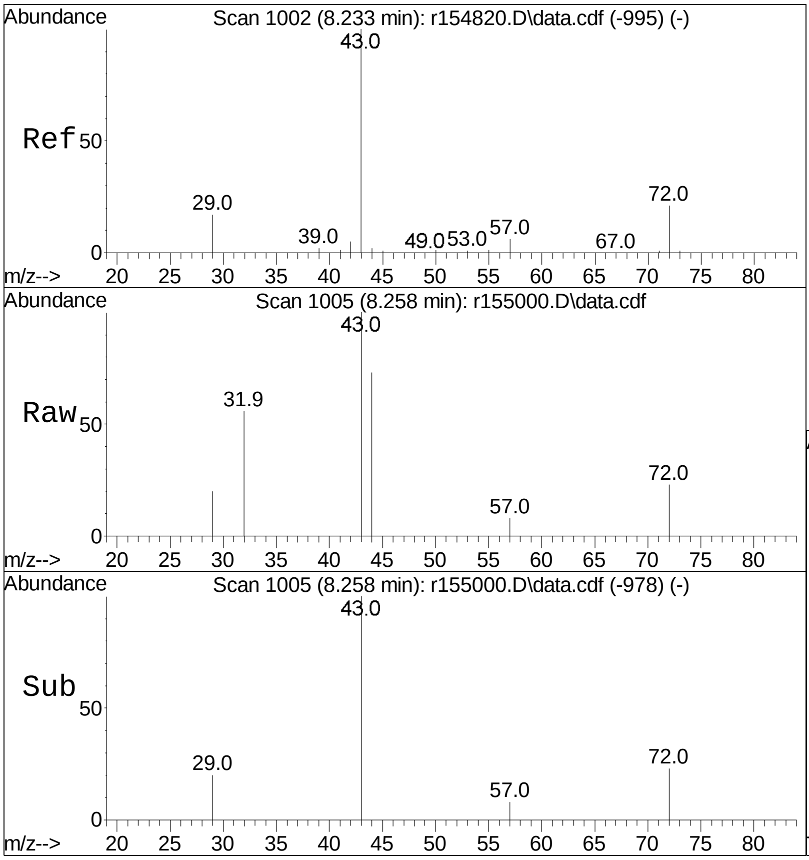




```
#31
Freon 113
Concen:    0.17 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.000 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

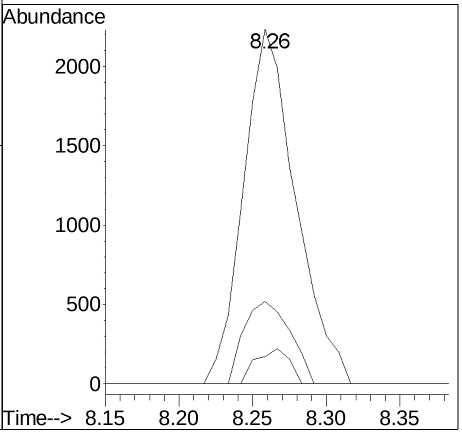
Tgt Ion:101 Resp:    3486
Ion  Ratio  Lower  Upper
101  100
 85   34.9   28.8   43.2
151   80.6   60.3   90.5
```

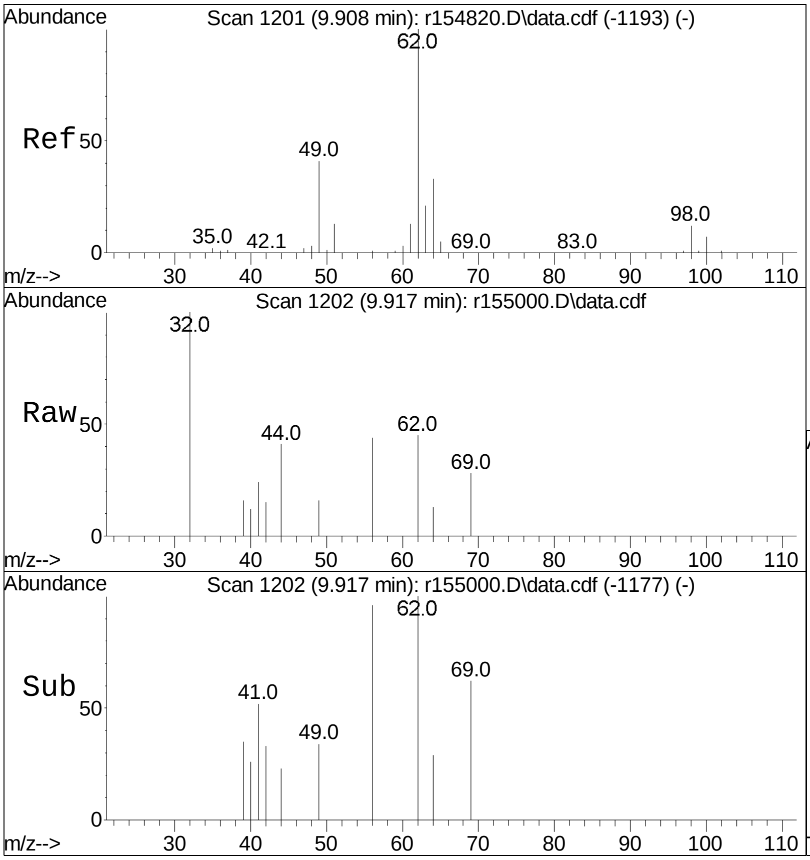




```
#36
2-butanone
Concen:    0.14 ppbV
RT:    8.26 min  Scan# 1005
Delta R.T.  0.025 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

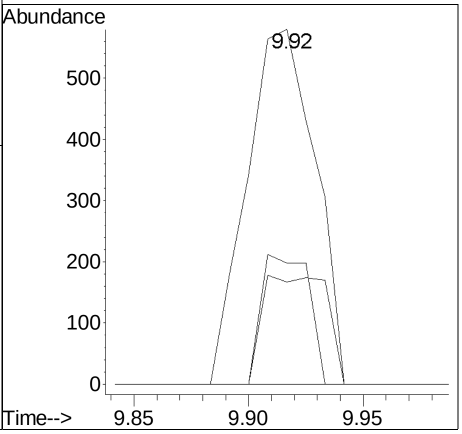
Tgt Ion: 43 Resp:    5525
Ion  Ratio  Lower  Upper
 43  100
 72   23.2   17.2   25.8
 57    7.7    4.6    7.0#
```

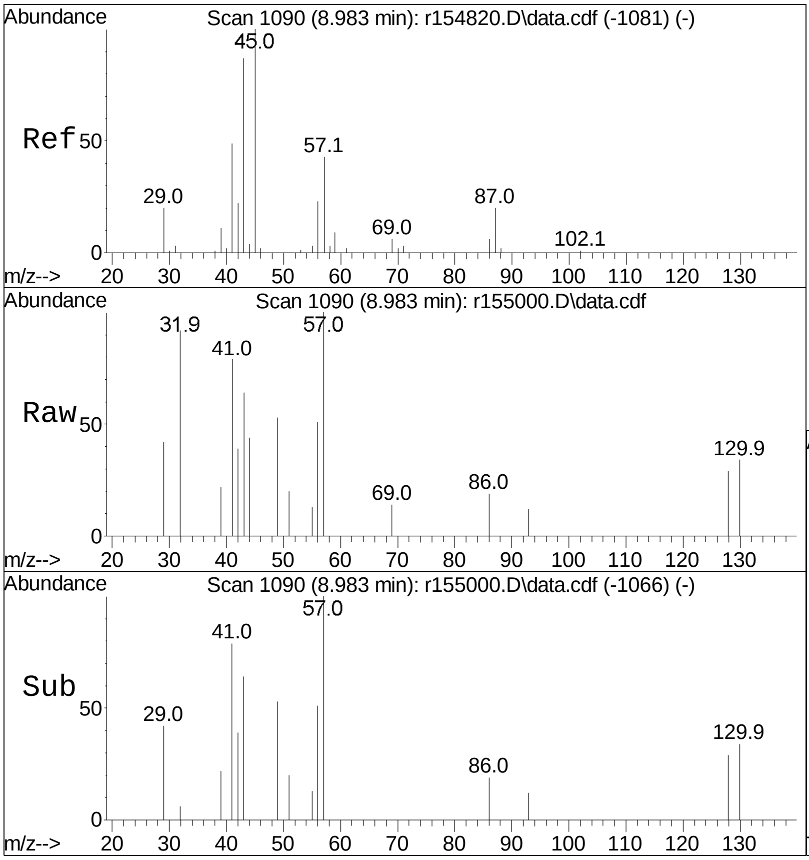




```
#42
1,2-dichloroethane
Concen:    0.08 ppbV
RT:    9.92 min  Scan# 1202
Delta R.T.  0.008 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

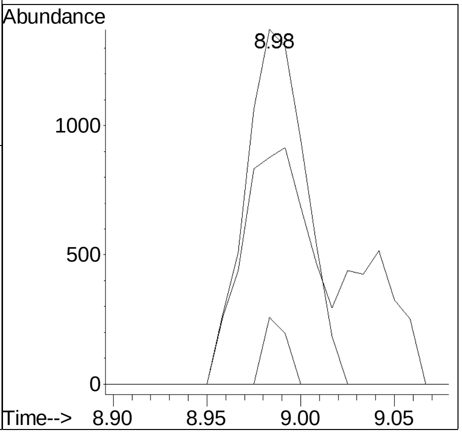
Tgt Ion: 62 Resp:    1202
Ion  Ratio  Lower  Upper
 62  100
 64   28.8   26.2   39.2
 49   34.1   33.1   49.7
 63    0.0   16.6   25.0#
```

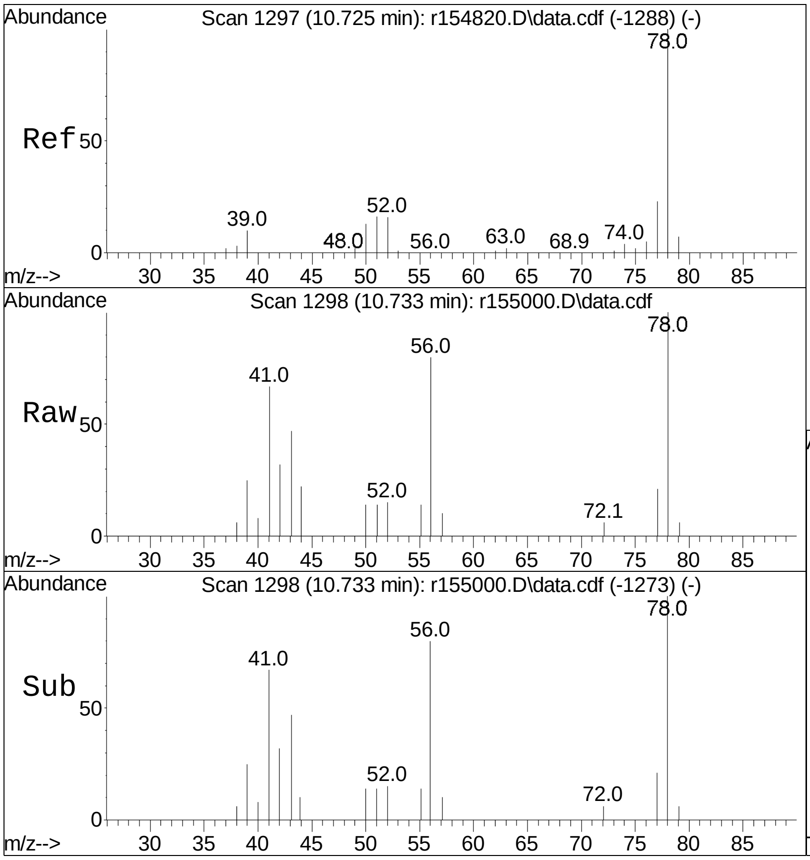




```
#44
hexane
Concen:    0.11 ppbV
RT:    8.98 min  Scan# 1090
Delta R.T.  0.000 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

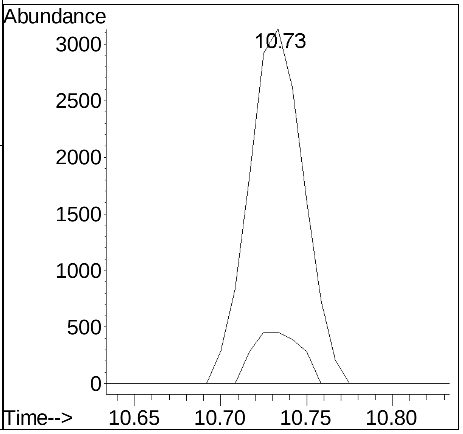
Tgt Ion: 57 Resp:    3098
Ion  Ratio  Lower  Upper
 57  100
 43   63.9  162.2  243.2#
 86   18.8   11.8   17.6#
```

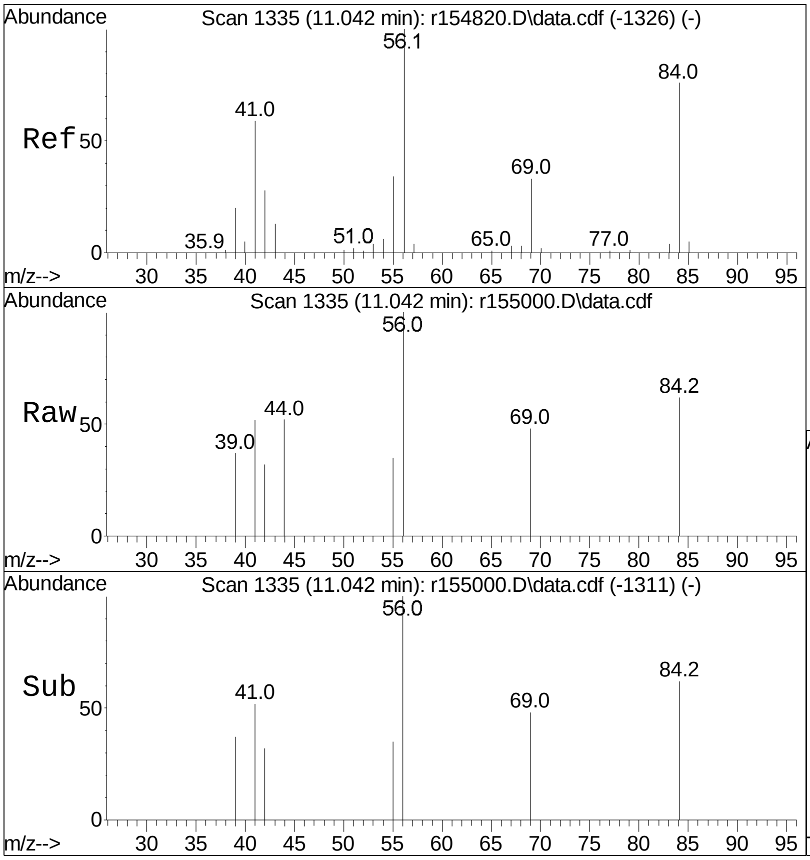




```
#50
benzene
Concen:    0.13 ppbV
RT:   10.73 min  Scan# 1298
Delta R.T.  0.008 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

Tgt Ion: 78 Resp:    7089
Ion  Ratio  Lower  Upper
 78  100
 52   14.5   13.0   19.4
```

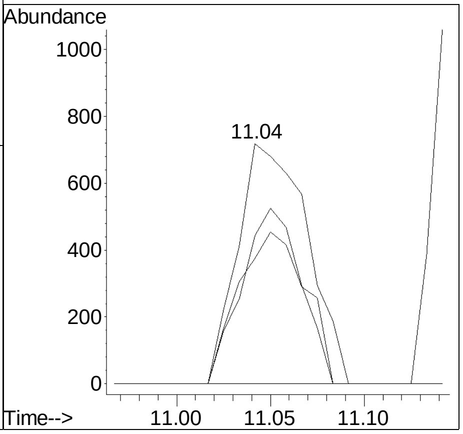


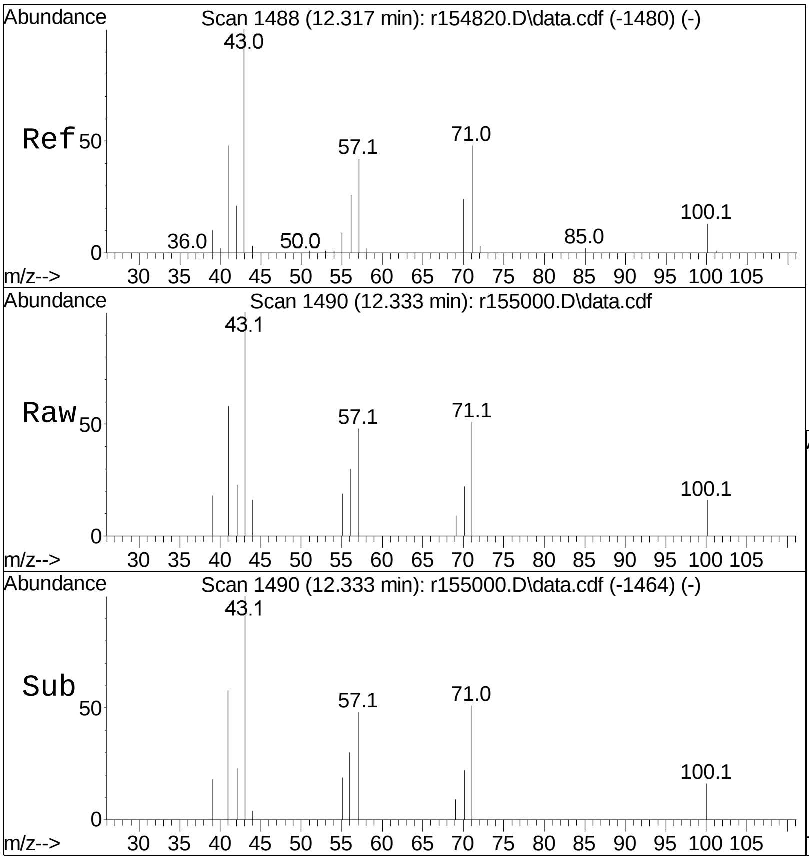


#53
cyclohexane
Concen: 0.06 ppbV
RT: 11.04 min Scan# 1335
Delta R.T. 0.000 min
Lab File: r155000.D
Acq: 2 Jan 2018 10:21 PM

Tgt Ion: 56 Resp: 1856

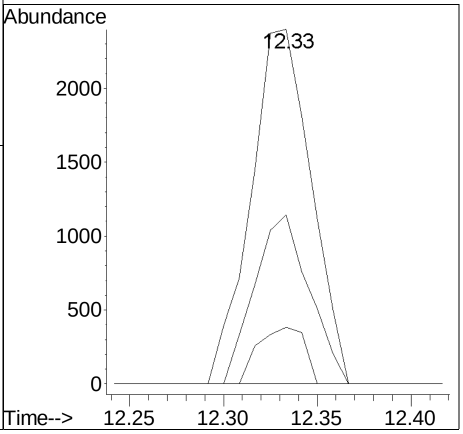
Ion	Ratio	Lower	Upper
56	100		
84	61.7	60.6	90.8
41	52.2	47.3	70.9

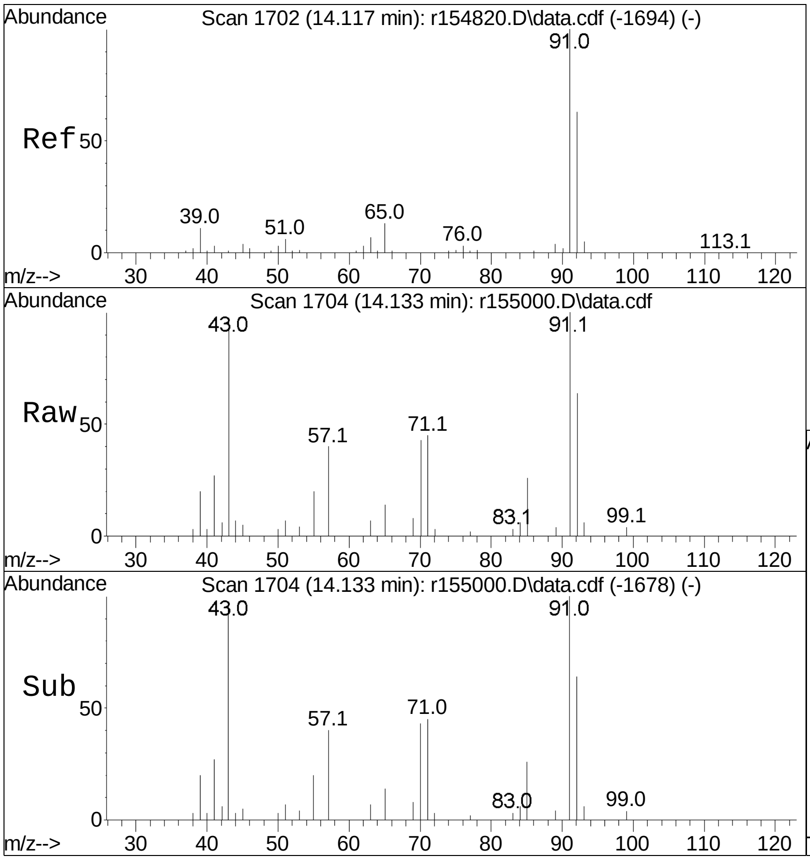




```
#62
heptane
Concen:    0.12 ppbV
RT:   12.33 min  Scan# 1490
Delta R.T.  0.017 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

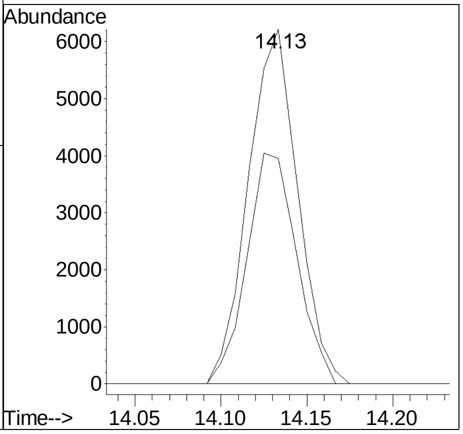
Tgt Ion: 43 Resp:    5378
Ion  Ratio  Lower  Upper
 43  100
 57   47.6   33.3   49.9
100   16.0   10.6   15.8#
```

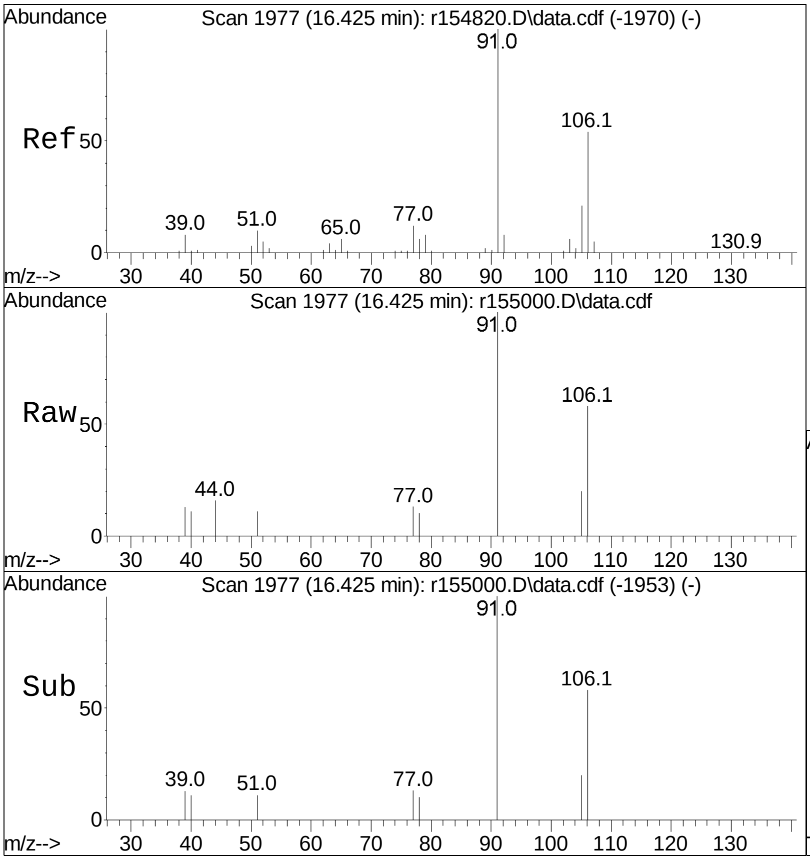




```
#68
toluene
Concen:    0.21 ppbV
RT:   14.13 min  Scan# 1704
Delta R.T.  0.017 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

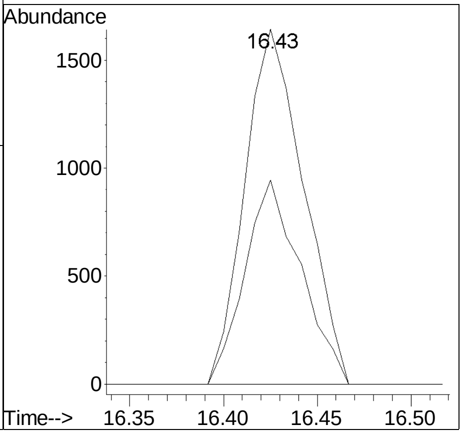
Tgt Ion: 91 Resp:   12449
Ion  Ratio  Lower  Upper
 91  100
 92   63.6   50.6   76.0
```





```
#83
m+p-xylene
Concen:    0.06 ppbV
RT:   16.43 min  Scan# 1977
Delta R.T.  0.000 min
Lab File:   r155000.D
Acq:  2 Jan 2018  10:21 PM

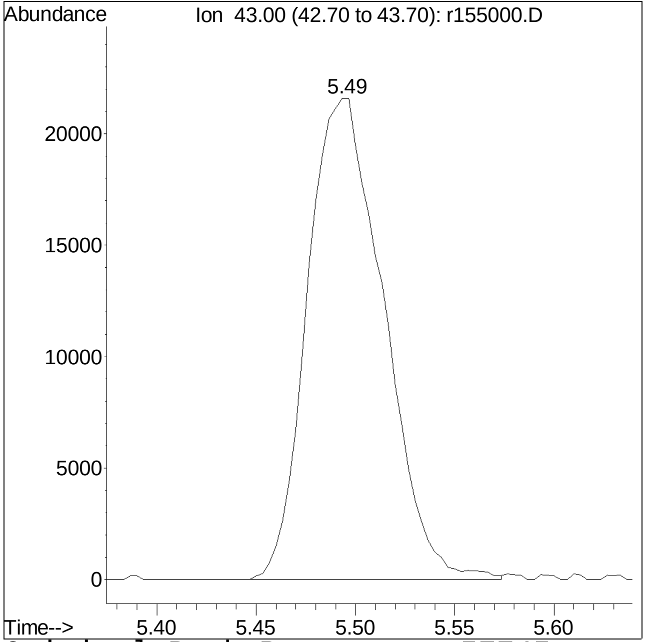
Tgt Ion: 91 Resp:    3580
Ion  Ratio  Lower  Upper
 91  100
106   57.5   43.4   65.2
```

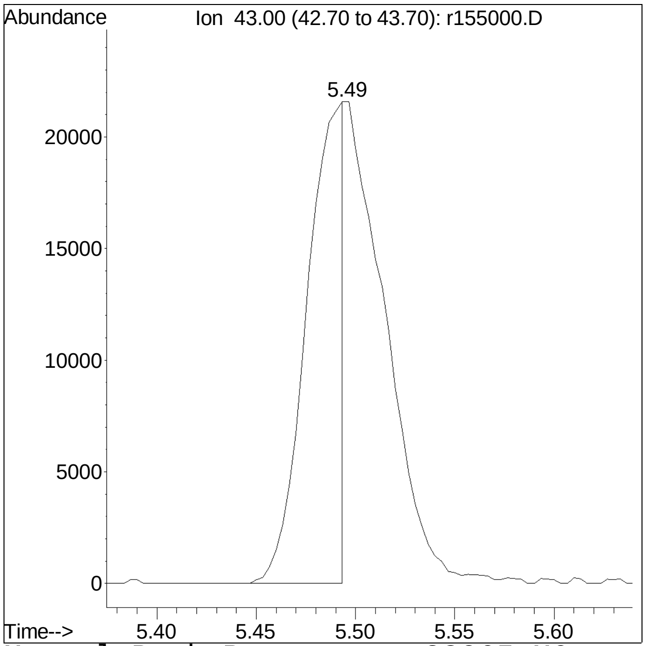


```
                  Manual Integration/Negative Proof Report

Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r155000.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 1/2/2018 10:21 PM         Instrument   :
Sample      : L1747754-02,3,250,250     Quant Date   : 1/3/2018  7:03 am

                          Compound #19: acetone
```





```
Original Peak Response = 57745       Manual Peak Response = 28065 M6
M6 = Misassignment of peak valley by automated integration (poor split of
2 peaks).
```

Volatiles Standards Data

Initial Calibration

Initial Calibration Summary
Form 6

Client	: Sterling Environmental Eng		**Lab Number**	: L1747754
Project Name	: EHS 2017 IA		**Project Number**	: 28014
Instrument ID	: AIRLAB15		**Ical Ref**	: ICAL14299
Calibration dates	: 12/22/17 16:49	12/22/17 21:22		

```
Calibration Files
0.2 =r154816.D  0.5 =r154817.D  1.0 =r154818.D  5.0 =r154819.D  10   =r154820.D  20   =r154821.D
50  =r154822.D  100 =r154823.D
```

		Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
1)	I	bromochloromethane	----------------ISTD---------------------									
2)		chlorodifluoromethane	1.180	1.119	1.106	1.059	1.030	0.944	0.874	0.801	1.0141	12.87
3)		propylene	0.889	0.817	0.808	0.751	0.708	0.628	0.562	0.495	0.7074	19.25
4)		propane	1.091	0.960	0.875	0.837	0.807	0.737	0.674	0.614	0.8244	18.74
5)		dichlorodifluoromethane	1.244	1.201	1.193	1.158	1.099	0.999	0.911	0.819	1.0780	14.19
6)	C	chloromethane	0.718	0.690	0.679	0.654	0.631	0.564	0.514	0.464	0.6141	14.79
7)		Freon-114	1.551	1.501	1.486	1.419	1.380	1.240	1.103	0.920	1.3250	16.63
8)	C	methanol			0.335	0.280	0.266	0.233	0.218	0.198	0.2550	19.46
9)	C	vinyl chloride	0.638	0.640	0.623	0.611	0.591	0.535	0.505	0.480	0.5778	10.86
10)	C	1,3-butadiene	0.625	0.590	0.588	0.565	0.547	0.498	0.466	0.432	0.5389	12.46
11)		butane	1.279	1.199	1.152	1.061	0.974	0.920	0.766	0.658	1.0012	21.46
12)	C	acetaldehyde		0.398	0.395	0.327	0.311	0.310	0.263	0.210	0.3164	21.20
13)	C	bromomethane	0.554	0.559	0.539	0.519	0.505	0.456	0.426	0.403	0.4953	12.07
14)	C	chloroethane	0.342	0.321	0.325	0.305	0.292	0.265	0.246	0.235	0.2913	13.38
15)		ethanol			0.528	0.499	0.476	0.428	0.383	0.338	0.4419	16.39
16)		dichlorofluoromethane	1.158	1.137	1.134	1.071	1.026	0.912	0.816	0.733	0.9984	16.07
17)	C	vinyl bromide	0.617	0.590	0.589	0.569	0.557	0.504	0.452	0.398	0.5345	14.29
18)	C	acrolein		0.297	0.284	0.272	0.270	0.252	0.242	0.233	0.2642	8.67
19)		acetone	1.039	0.871	0.833	0.676	0.643	0.603	0.516	0.427	0.7010	28.71
20)	C	acetonitrile	0.703	0.661	0.591	0.559	0.547	0.483	0.435	0.384	0.5454	19.93
21)		trichlorofluoromethane	0.949	0.937	0.929	0.890	0.862	0.763	0.688	0.627	0.8306	14.80
22)		isopropyl alcohol	1.628	1.263	1.135	0.948	0.909	0.857	0.750	0.633	1.0153	31.33#
23)	C	acrylonitrile	0.618	0.551	0.547	0.529	0.523	0.481	0.456	0.429	0.5167	11.65
24)		pentane	1.314	1.361	1.351	1.246	1.199	1.066	0.932	0.791	1.1575	18.09
25)		ethyl ether	1.061	1.019	0.982	0.945	0.927	0.834	0.757	0.684	0.9012	14.60
26)	C	1,1-dichloroethene	0.836	0.846	0.818	0.797	0.766	0.694	0.640	0.589	0.7483	12.89
27)		tertiary butyl alcohol		1.076	1.072	1.009	0.997	0.907	0.850	0.799	0.9588	11.31
28)	C	methylene chloride		0.840	0.850	0.800	0.776	0.697	0.628	0.559	0.7358	15.07
29)	C	3-chloropropene	1.136	1.022	0.984	0.914	0.895	0.800	0.717	0.633	0.8875	18.65
30)	C	carbon disulfide	2.014	1.887	1.884	2.075	1.899	1.734	1.538	1.266	1.7870	15.00
31)		Freon 113	1.239	1.094	1.103	1.190	1.028	0.922	0.810	0.697	1.0104	18.58
32)		trans-1,2-dichloroethene	1.193	1.153	1.150	1.129	1.123	1.003	0.926	0.827	1.0631	12.23
33)	C	1,1-dichloroethane	1.456	1.412	1.412	1.359	1.348	1.209	1.107	0.990	1.2866	12.99
34)	C	MTBE	1.911	1.894	1.895	1.875	1.878	1.718	1.606	1.484	1.7826	9.09
35)	C	vinyl acetate	2.155	2.043	2.052	2.061	2.090	1.898	1.788	1.590	1.9596	9.66
36)	C	2-butanone	2.169	2.071	2.053	1.984	1.976	1.764	1.632	1.447	1.8872	13.16
37)		cis-1,2-dichloroethene	0.985	1.001	1.003	0.979	0.971	0.875	0.801	0.719	0.9168	11.71
38)		Ethyl Acetate	0.311	0.306	0.290	0.278	0.280	0.251	0.235	0.209	0.2699	13.19

Initial Calibration Summary
Form 6

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Calibration dates : 12/22/17 16:49 12/22/17 21:22
Lab Number : L1747754
Project Number : 28014
Ical Ref : ICAL14299

Calibration Files
0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

	Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
39) C	chloroform	1.267	1.228	1.203	1.171	1.138	1.032	0.960	0.871	1.1087	12.65
40)	Tetrahydrofuran	1.281	1.235	1.275	1.261	1.259	1.134	1.039	0.924	1.1760	11.24
41)	2,2-dichloropropane	0.972	0.943	0.952	0.946	0.934	0.858	0.806	0.745	0.8944	9.20
42) C	1,2-dichloroethane	0.807	0.809	0.787	0.760	0.750	0.661	0.610	0.550	0.7167	13.63
43) I	1,4-difluorobenzene	----------------ISTD---------------------									
44) C	hexane	0.621	0.606	0.589	0.580	0.577	0.515	0.475	0.435	0.5498	12.18
45)	diisopropyl ether	0.284	0.285	0.280	0.278	0.277	0.249	0.241	0.227	0.2650	8.51
46)	tert-butyl ethyl ether	0.948	0.961	0.960	0.962	0.954	0.857	0.816	0.766	0.9031	8.69
47) s	1,2-dichloroethane-D4	0.216	0.214	0.213	0.214	0.215	0.205	0.198	0.193	0.2086	4.18
48) C	1,1,1-trichloroethane	0.453	0.417	0.427	0.431	0.426	0.384	0.363	0.345	0.4058	9.24
49)	1,1-dichloropropene	0.475	0.469	0.459	0.466	0.464	0.425	0.411	0.390	0.4451	7.15
50) C	benzene	1.158	1.074	1.065	1.052	1.040	0.945	0.916	0.871	1.0150	9.41
51)	thiophene	0.534	0.502	0.508	0.476	0.470	0.472	0.463	0.441	0.4834	6.07
52) C	carbon tetrachloride	0.368	0.357	0.355	0.361	0.370	0.336	0.324	0.317	0.3486	5.79
53)	cyclohexane	0.649	0.619	0.618	0.621	0.616	0.558	0.538	0.512	0.5914	8.27
54)	tert-amyl methyl ether	0.881	0.853	0.854	0.878	0.890	0.814	0.798	0.762	0.8412	5.42
55)	dibromomethane	0.334	0.331	0.322	0.317	0.313	0.279	0.266	0.246	0.3010	11.02
56) C	1,2-dichloropropane	0.428	0.408	0.402	0.401	0.398	0.354	0.332	0.304	0.3783	11.36
57)	bromodichloromethane	0.531	0.523	0.517	0.541	0.550	0.498	0.483	0.462	0.5130	5.87
58) C	1,4-dioxane	0.248	0.259	0.249	0.259	0.252	0.232	0.225	0.213	0.2419	6.98
59) C	trichloroethene	0.424	0.411	0.401	0.398	0.401	0.355	0.348	0.329	0.3834	8.95
60) C	2,2,4-trimethylpentane	2.011	1.981	1.964	1.953	1.927	1.724	1.610	1.475	1.8308	10.99
61)	methyl methacrylate	0.458	0.465	0.466	0.422	0.424	0.429	0.405	0.375	0.4306	7.37
62)	heptane	0.961	0.910	0.910	0.913	0.897	0.800	0.738	0.654	0.8478	12.54
63) C	cis-1,3-dichloropropene	0.501	0.483	0.490	0.519	0.525	0.483	0.473	0.459	0.4916	4.57
64) C	4-methyl-2-pentanone	1.065	1.011	1.046	1.049	1.046	0.928	0.856	0.777	0.9722	11.03
65)	trans-1,3-dichloropropene	0.459	0.448	0.448	0.481	0.488	0.451	0.446	0.429	0.4563	4.27
66) C	1,1,2-trichloroethane	0.419	0.387	0.392	0.393	0.391	0.353	0.337	0.318	0.3736	9.10
67) I	chlorobenzene-D5	----------------ISTD---------------------									
68) C	toluene	7.165	6.891	6.735	6.720	6.622	6.087	5.725	5.198	6.3930	10.39
69) s	toluene-D8	5.016	5.136	4.946	5.163	5.159	5.054	5.095	4.988	5.0697	1.61
70)	2-methylthiophene	5.785	5.683	5.709	5.056	5.084	5.296	5.075	4.627	5.2892	7.69
71)	1,3-dichloropropane	3.431	3.312	3.209	3.194	3.155	2.950	2.837	2.681	3.0960	8.15
72)	2-hexanone	5.388	5.447	5.500	5.252	5.348	4.858	4.455	3.912	5.0202	11.37
73)	3-methylthiophene	4.252	4.170	4.179	3.857	3.789	4.019	3.775	3.500	3.9426	6.53
74)	dibromochloromethane	2.561	2.510	2.651	2.758	2.858	2.677	2.564	2.382	2.6201	5.68
75) C	1,2-dibromoethane	3.249	3.206	3.119	3.117	3.111	2.894	2.810	2.589	3.0119	7.53
76)	butyl acetate	0.670	0.718	0.756	0.782	0.807	0.771	0.764	0.727	0.7495	5.74

Initial Calibration Summary
Form 6

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Calibration dates : 12/22/17 16:49 12/22/17 21:22

Lab Number : L1747754
Project Number : 28014
Ical Ref : ICAL14299

Calibration Files
0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

	Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
77)	octane	2.450	2.497	2.430	2.436	2.428	2.262	2.192	2.065	2.3450	6.56
78) C	tetrachloroethene	2.569	2.695	2.509	2.523	2.503	2.320	2.223	2.060	2.4250	8.55
79)	1,1,1,2-tetrachloroethane	2.127	2.117	2.079	2.147	2.152	2.021	1.892	1.711	2.0307	7.65
80) C	chlorobenzene	5.549	5.304	5.207	5.179	5.170	4.790	4.577	3.980	4.9696	10.07
81) C	ethylbenzene	8.805	8.700	8.567	8.502	8.484	7.804	7.229	6.553	8.0804	10.06
82)	2-ethylthiophene	5.087	5.103	5.041	4.676	4.681	4.797	4.541	4.110	4.7545	7.06
83) C	m+p-xylene	7.120	7.147	7.113	7.037	6.899	6.286	5.725	4.965	6.5365	12.42
84) C	bromoform	2.068	2.100	2.175	2.441	2.489	2.448	2.381	2.137	2.2799	7.73
85) C	styrene	5.487	5.576	5.653	5.718	5.674	5.327	5.107	4.581	5.3904	7.15
86) C	1,1,2,2-tetrachloroethane	5.046	4.958	4.927	4.921	4.869	4.479	4.141	3.402	4.5928	12.39
87) C	o-xylene	7.192	7.247	7.072	7.104	6.947	6.388	5.718	4.726	6.5490	13.75
88)	1,2,3-trichloropropane	3.887	3.995	3.979	3.956	3.965	3.677	3.524	3.260	3.7805	7.13
89)	nonane	7.291	7.374	7.319	7.285	7.098	6.471	5.694	4.721	6.6564	14.65
90) s	bromofluorobenzene	2.698	2.762	2.785	2.618	2.696	3.023	2.850	2.871	2.7879	4.54
91) C	isopropylbenzene	9.425	9.251	9.147	9.311	9.082	8.513	7.837	6.842	8.6760	10.47
92)	bromobenzene	5.246	5.224	5.133	5.082	5.041	4.740	4.450	4.077	4.8741	8.61
93)	2-chlorotoluene	2.582	2.586	2.542	2.601	2.581	2.407	2.312	2.159	2.4711	6.60
94)	n-propylbenzene	2.959	3.011	2.972	2.974	3.010	2.836	2.713	2.467	2.8679	6.68
95)	4-chlorotoluene	2.660	2.600	2.528	2.581	2.566	2.386	2.355	2.131	2.4760	7.04
96)	4-ethyl toluene	1.021	1.046	1.028	1.057	1.044	0.958	0.874	0.751	0.9724	11.13
97)	1,3,5-trimethylbenzene	8.526	8.306	8.363	8.342	8.417	7.659	7.079	6.186	7.8597	10.63
98)	tert-butylbenzene	8.334	8.222	8.424	8.565	8.458	7.702	6.734	5.399	7.7296	14.46
99)	1,2,4-trimethylbenzene	8.070	8.253	8.299	8.399	8.294	7.470	6.583	5.196	7.5705	15.05
100)	decane	7.112	7.237	7.155	7.308	7.161	6.514	5.964	5.054	6.6882	12.03
101) C	Benzyl Chloride	4.434	4.909	5.208	5.992	6.439	6.263	5.947	5.315	5.5633	12.67
102)	1,3-dichlorobenzene	5.447	5.392	5.495	5.367	5.357	5.025	4.691	4.045	5.1022	9.90
103) C	1,4-dichlorobenzene	5.589	5.506	5.470	5.342	5.453	5.083	4.694	4.139	5.1593	9.79
104)	sec-butylbenzene	1.224	1.204	1.179	1.195	1.192	1.106	1.003	0.838	1.1178	11.97
105)	1,2,3-trimethylbenzene	6.359	6.324	6.262	6.212	6.158	6.052	5.424	4.373	5.8957	11.59
106)	p-isopropyltoluene	1.028	1.024	1.013	1.021	1.037	0.933	0.810	0.633	0.9373	15.48
107)	1,2-dichlorobenzene	5.011	5.055	5.024	4.991	4.892	4.717	4.489	4.038	4.7771	7.44
108)	n-butylbenzene	9.487	9.616	9.786	9.736	9.569	8.674	8.138	6.975	8.9975	11.15
109)	indan	6.544	6.804	6.702	6.613	6.646	6.642	6.207	5.434	6.4489	6.91
110)	indene	2.773	2.855	2.945	3.058	3.058	3.116	3.102	2.937	2.9807	4.15
111) C	1,2-dibromo-3-chloropropane	1.726	1.852	1.868	2.127	2.192	2.062	2.050	1.911	1.9735	8.04
112)	undecane	7.439	8.164	8.202	8.322	8.212	7.317	6.681	5.570	7.4883	12.92
113)	1,2,4,5-tetramethylbenzene	1.020	1.067	1.070	1.118	1.121	1.054	0.966	0.791	1.0258	10.46
114)	dodecane	5.739	7.773	8.572	8.519	8.824	6.953	6.552	5.479	7.3014	17.99

Initial Calibration Summary
Form 6

Client : **Sterling Environmental Eng**
Project Name : **EHS 2017 IA**
Instrument ID : **AIRLAB15**
Calibration dates : **12/22/17 16:49 12/22/17 21:22**
Lab Number : **L1747754**
Project Number : **28014**
Ical Ref : **ICAL14299**

Calibration Files
0.2 =r154816.D 0.5 =r154817.D 1.0 =r154818.D 5.0 =r154819.D 10 =r154820.D 20 =r154821.D
50 =r154822.D 100 =r154823.D

	Compound	0.2	0.5	1.0	5.0	10	20	50	100	Avg	%RSD
115) C	1,2,4-trichlorobenzene	3.371	3.684	3.900	3.800	4.152	3.715	3.649	3.378	3.7060	6.98
116)	naphthalene	0.964	1.053	1.131	1.084	1.174	1.044	1.017	0.889	1.0443	8.68
117)	1,2,3-trichlorobenzene	3.213	3.521	3.586	3.642	3.876	3.477	3.518	3.260	3.5115	5.99
118)	benzothiophene	0.703	0.813	0.857	0.792	0.845	1.136	1.127	0.970	0.9054	17.45
119) C	hexachlorobutadiene	3.109	3.070	3.113	3.223	3.329	2.875	2.822	2.456	2.9999	9.18
120)	2-methylnaphthalene			1.390	2.019	2.468	3.296	3.613	3.550	2.7225	33.43#
121)	1-methylnaphthalene			2.387	2.731	3.150	3.792	4.101	3.909	3.3448	20.81

```
                                        Response Factor Report

  Method Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Method File : TALL171222.M
  Title     : TO-14A/TO-15 SIM/Full Scan Analysis
  Last Update  : Sat Dec 23 09:47:41 2017
  Response Via : Initial Calibration

  Calibration Files
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  50  =r154822.D  100 =r154823.D

        Compound                         0.2   0.5   1.0   5.0   10    20    50    100   Avg      %RSD
  ---------------------------------------------------------------------------------------------------

  1) I   bromochloromethane          ----------------ISTD--------------------
  2)     chlorodifluoromethane        1.180 1.119 1.106 1.059 1.030 0.944 0.874 0.801 1.0141   12.87
  3)     propylene                    0.889 0.817 0.808 0.751 0.708 0.628 0.562 0.495 0.7074   19.25
  4)     propane                      1.091 0.960 0.875 0.837 0.807 0.737 0.674 0.614 0.8244   18.74
  5)     dichlorodifluoromethane      1.244 1.201 1.193 1.158 1.099 0.999 0.911 0.819 1.0780   14.19
  6) C   chloromethane                0.718 0.690 0.679 0.654 0.631 0.564 0.514 0.464 0.6141   14.79
  7)     Freon-114                    1.551 1.501 1.486 1.419 1.380 1.240 1.103 0.920 1.3250   16.63
  8) C   methanol                                 0.335 0.280 0.266 0.233 0.218 0.198 0.2550   19.46
  9) C   vinyl chloride               0.638 0.640 0.623 0.611 0.591 0.535 0.505 0.480 0.5778   10.86
 10) C   1,3-butadiene                0.625 0.590 0.588 0.565 0.547 0.498 0.466 0.432 0.5389   12.46
 11)     butane                       1.279 1.199 1.152 1.061 0.974 0.920 0.766 0.658 1.0012   21.46
 12) C   acetaldehyde                       0.398 0.395 0.327 0.311 0.310 0.263 0.210 0.3164   21.20
 13) C   bromomethane                 0.554 0.559 0.539 0.519 0.505 0.456 0.426 0.403 0.4953   12.07
 14) C   chloroethane                 0.342 0.321 0.325 0.305 0.292 0.265 0.246 0.235 0.2913   13.38
 15)     ethanol                                  0.528 0.499 0.476 0.428 0.383 0.338 0.4419   16.39
 16)     dichlorofluoromethane        1.158 1.137 1.134 1.071 1.026 0.912 0.816 0.733 0.9984   16.07
 17) C   vinyl bromide                0.617 0.590 0.589 0.569 0.557 0.504 0.452 0.398 0.5345   14.29
 18) C   acrolein                           0.297 0.284 0.272 0.270 0.252 0.242 0.233 0.2642    8.67
 19)     acetone                      1.039 0.871 0.833 0.676 0.643 0.603 0.516 0.427 0.7010   28.71
 20) C   acetonitrile                 0.703 0.661 0.591 0.559 0.547 0.483 0.435 0.384 0.5454   19.93
 21)     trichlorofluoromethane       0.949 0.937 0.929 0.890 0.862 0.763 0.688 0.627 0.8306   14.80
 22)     isopropyl alcohol            1.628 1.263 1.135 0.948 0.909 0.857 0.750 0.633 1.0153   31.33#
 23) C   acrylonitrile                0.618 0.551 0.547 0.529 0.523 0.481 0.456 0.429 0.5167   11.65
 24)     pentane                      1.314 1.361 1.351 1.246 1.199 1.066 0.932 0.791 1.1575   18.09
 25)     ethyl ether                  1.061 1.019 0.982 0.945 0.927 0.834 0.757 0.684 0.9012   14.60
 26) C   1,1-dichloroethene           0.836 0.846 0.818 0.797 0.766 0.694 0.640 0.589 0.7483   12.89
 27)     tertiary butyl alcohol             1.076 1.072 1.009 0.997 0.907 0.850 0.799 0.9588   11.31
 28) C   methylene chloride                 0.840 0.850 0.800 0.776 0.697 0.628 0.559 0.7358   15.07
 29) C   3-chloropropene              1.136 1.022 0.984 0.914 0.895 0.800 0.717 0.633 0.8875   18.65
 30) C   carbon disulfide             2.014 1.887 1.884 2.075 1.899 1.734 1.538 1.266 1.7870   15.00
 31)     Freon 113                    1.239 1.094 1.103 1.190 1.028 0.922 0.810 0.697 1.0104   18.58

TALL171222.M Sat Dec 23 10:53:37 2017                                                      Page: 1
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                              Response Factor Report

   Method Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
   Method File : TALL171222.M
   Title     : TO-14A/TO-15 SIM/Full Scan Analysis
   Last Update  : Sat Dec 23 09:47:41 2017
   Response Via : Initial Calibration

   Calibration Files
   0.2 =r154816.D  0.5 =r154817.D  1.0 =r154818.D  5.0 =r154819.D  10  =r154820.D  20  =r154821.D
   50  =r154822.D  100 =r154823.D

         Compound                      0.2   0.5   1.0   5.0   10    20    50    100   Avg      %RSD
   -----------------------------------------------------------------------------------------------------
  32)      trans-1,2-dichloroethene     1.193 1.153 1.150 1.129 1.123 1.003 0.926 0.827 1.0631   12.23
  33) C    1,1-dichloroethane           1.456 1.412 1.412 1.359 1.348 1.209 1.107 0.990 1.2866   12.99
  34) C    MTBE                         1.911 1.894 1.895 1.875 1.878 1.718 1.606 1.484 1.7826    9.09
  35) C    vinyl acetate                2.155 2.043 2.052 2.061 2.090 1.898 1.788 1.590 1.9596    9.66
  36) C    2-butanone                   2.169 2.071 2.053 1.984 1.976 1.764 1.632 1.447 1.8872   13.16
  37)      cis-1,2-dichloroethene       0.985 1.001 1.003 0.979 0.971 0.875 0.801 0.719 0.9168   11.71
  38)      Ethyl Acetate                0.311 0.306 0.290 0.278 0.280 0.251 0.235 0.209 0.2699   13.19
  39) C    chloroform                   1.267 1.228 1.203 1.171 1.138 1.032 0.960 0.871 1.1087   12.65
  40)      Tetrahydrofuran              1.281 1.235 1.275 1.261 1.259 1.134 1.039 0.924 1.1760   11.24
  41)      2,2-dichloropropane          0.972 0.943 0.952 0.946 0.934 0.858 0.806 0.745 0.8944    9.20
  42) C    1,2-dichloroethane           0.807 0.809 0.787 0.760 0.750 0.661 0.610 0.550 0.7167   13.63

  43) I    1,4-difluorobenzene        ----------------ISTD---------------------
  44) C    hexane                       0.621 0.606 0.589 0.580 0.577 0.515 0.475 0.435 0.5498   12.18
  45)      diisopropyl ether            0.284 0.285 0.280 0.278 0.277 0.249 0.241 0.227 0.2650    8.51
  46)      tert-butyl ethyl ether       0.948 0.961 0.960 0.962 0.954 0.857 0.816 0.766 0.9031    8.69
  47) s    1,2-dichloroethane-D4        0.216 0.214 0.213 0.214 0.215 0.205 0.198 0.193 0.2086    4.18
  48) C    1,1,1-trichloroethane        0.453 0.417 0.427 0.431 0.426 0.384 0.363 0.345 0.4058    9.24
  49)      1,1-dichloropropene          0.475 0.469 0.459 0.466 0.464 0.425 0.411 0.390 0.4451    7.15
  50) C    benzene                      1.158 1.074 1.065 1.052 1.040 0.945 0.916 0.871 1.0150    9.41
  51)      thiophene                    0.534 0.502 0.508 0.476 0.470 0.472 0.463 0.441 0.4834    6.07
  52) C    carbon tetrachloride         0.368 0.357 0.355 0.361 0.370 0.336 0.324 0.317 0.3486    5.79
  53)      cyclohexane                  0.649 0.619 0.618 0.621 0.616 0.558 0.538 0.512 0.5914    8.27
  54)      tert-amyl methyl ether       0.881 0.853 0.854 0.878 0.890 0.814 0.798 0.762 0.8412    5.42
  55)      dibromomethane               0.334 0.331 0.322 0.317 0.313 0.279 0.266 0.246 0.3010   11.02
  56) C    1,2-dichloropropane          0.428 0.408 0.402 0.401 0.398 0.354 0.332 0.304 0.3783   11.36
  57)      bromodichloromethane         0.531 0.523 0.517 0.541 0.550 0.498 0.483 0.462 0.5130    5.87
  58) C    1,4-dioxane                  0.248 0.259 0.249 0.259 0.252 0.232 0.225 0.213 0.2419    6.98
  59) C    trichloroethene              0.424 0.411 0.401 0.398 0.401 0.355 0.348 0.329 0.3834    8.95
  60) C    2,2,4-trimethylpentane       2.011 1.981 1.964 1.953 1.927 1.724 1.610 1.475 1.8308   10.99
  61)      methyl methacrylate          0.458 0.465 0.466 0.422 0.424 0.429 0.405 0.375 0.4306    7.37
  62)      heptane                      0.961 0.910 0.910 0.913 0.897 0.800 0.738 0.654 0.8478   12.54
```

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                                        Response Factor Report

  Method Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Method File : TALL171222.M
  Title      : TO-14A/TO-15 SIM/Full Scan Analysis
  Last Update  : Sat Dec 23 09:47:41 2017
  Response Via : Initial Calibration

  Calibration Files
  0.2 =r154816.D  0.5 =r154817.D  1.0 =r154818.D  5.0 =r154819.D  10  =r154820.D  20  =r154821.D
  50  =r154822.D  100 =r154823.D

        Compound                       0.2   0.5   1.0   5.0   10    20    50    100   Avg      %RSD
  ----------------------------------------------------------------------------------------------------
 63) C   cis-1,3-dichloropropene      0.501 0.483 0.490 0.519 0.525 0.483 0.473 0.459 0.4916     4.57
 64) C   4-methyl-2-pentanone         1.065 1.011 1.046 1.049 1.046 0.928 0.856 0.777 0.9722    11.03
 65)     trans-1,3-dichloropropene    0.459 0.448 0.448 0.481 0.488 0.451 0.446 0.429 0.4563     4.27
 66) C   1,1,2-trichloroethane        0.419 0.387 0.392 0.393 0.391 0.353 0.337 0.318 0.3736     9.10

 67) I   chlorobenzene-D5           ----------------ISTD----------------------
 68) C   toluene                      7.165 6.891 6.735 6.720 6.622 6.087 5.725 5.198 6.3930    10.39
 69) s   toluene-D8                   5.016 5.136 4.946 5.163 5.159 5.054 5.095 4.988 5.0697     1.61
 70)     2-methylthiophene            5.785 5.683 5.709 5.056 5.084 5.296 5.075 4.627 5.2892     7.69
 71)     1,3-dichloropropane          3.431 3.312 3.209 3.194 3.155 2.950 2.837 2.681 3.0960     8.15
 72)     2-hexanone                   5.388 5.447 5.500 5.252 5.348 4.858 4.455 3.912 5.0202    11.37
 73)     3-methylthiophene            4.252 4.170 4.179 3.857 3.789 4.019 3.775 3.500 3.9426     6.53
 74)     dibromochloromethane         2.561 2.510 2.651 2.758 2.858 2.677 2.564 2.382 2.6201     5.68
 75) C   1,2-dibromoethane            3.249 3.206 3.119 3.117 3.111 2.894 2.810 2.589 3.0119     7.53
 76)     butyl acetate                0.670 0.718 0.756 0.782 0.807 0.771 0.764 0.727 0.7495     5.74
 77)     octane                       2.450 2.497 2.430 2.436 2.428 2.262 2.192 2.065 2.3450     6.56
 78) C   tetrachloroethene            2.569 2.695 2.509 2.523 2.503 2.320 2.223 2.060 2.4250     8.55
 79)     1,1,1,2-tetrachloroethane    2.127 2.117 2.079 2.147 2.152 2.021 1.892 1.711 2.0307     7.65
 80) C   chlorobenzene                5.549 5.304 5.207 5.179 5.170 4.790 4.577 3.980 4.9696    10.07
 81) C   ethylbenzene                 8.805 8.700 8.567 8.502 8.484 7.804 7.229 6.553 8.0804    10.06
 82)     2-ethylthiophene             5.087 5.103 5.041 4.676 4.681 4.797 4.541 4.110 4.7545     7.06
 83) C   m+p-xylene                   7.120 7.147 7.113 7.037 6.899 6.286 5.725 4.965 6.5365    12.42
 84) C   bromoform                    2.068 2.100 2.175 2.441 2.489 2.448 2.381 2.137 2.2799     7.73
 85) C   styrene                      5.487 5.576 5.653 5.718 5.674 5.327 5.107 4.581 5.3904     7.15
 86) C   1,1,2,2-tetrachloroethane    5.046 4.958 4.927 4.921 4.869 4.479 4.141 3.402 4.5928    12.39
 87) C   o-xylene                     7.192 7.247 7.072 7.104 6.947 6.388 5.718 4.726 6.5490    13.75
 88)     1,2,3-trichloropropane       3.887 3.995 3.979 3.956 3.965 3.677 3.524 3.260 3.7805     7.13
 89)     nonane                       7.291 7.374 7.319 7.285 7.098 6.471 5.694 4.721 6.6564    14.65
 90) s   bromofluorobenzene           2.698 2.762 2.785 2.618 2.696 3.023 2.850 2.871 2.7879     4.54
 91) C   isopropylbenzene             9.425 9.251 9.147 9.311 9.082 8.513 7.837 6.842 8.6760    10.47
 92)     bromobenzene                 5.246 5.224 5.133 5.082 5.041 4.740 4.450 4.077 4.8741     8.61
 93)     2-chlorotoluene              2.582 2.586 2.542 2.601 2.581 2.407 2.312 2.159 2.4711     6.60
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                              Response Factor Report

  Method Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Method File : TALL171222.M
  Title     : TO-14A/TO-15 SIM/Full Scan Analysis
  Last Update  : Sat Dec 23 09:47:41 2017
  Response Via : Initial Calibration

  Calibration Files
  0.2 =r154816.D  0.5 =r154817.D  1.0 =r154818.D  5.0 =r154819.D  10  =r154820.D  20  =r154821.D
  50  =r154822.D  100 =r154823.D

        Compound                      0.2   0.5   1.0   5.0   10    20    50    100   Avg      %RSD
  -----------------------------------------------------------------------------------------------------
 94)     n-propylbenzene             2.959 3.011 2.972 2.974 3.010 2.836 2.713 2.467 2.8679    6.68
 95)     4-chlorotoluene             2.660 2.600 2.528 2.581 2.566 2.386 2.355 2.131 2.4760    7.04
 96)     4-ethyl toluene             1.021 1.046 1.028 1.057 1.044 0.958 0.874 0.751 0.9724   11.13
 97)     1,3,5-trimethylbenzene      8.526 8.306 8.363 8.342 8.417 7.659 7.079 6.186 7.8597   10.63
 98)     tert-butylbenzene           8.334 8.222 8.424 8.565 8.458 7.702 6.734 5.399 7.7296   14.46
 99)     1,2,4-trimethylbenzene      8.070 8.253 8.299 8.399 8.294 7.470 6.583 5.196 7.5705   15.05
100)     decane                      7.112 7.237 7.155 7.308 7.161 6.514 5.964 5.054 6.6882   12.03
101) C   Benzyl Chloride             4.434 4.909 5.208 5.992 6.439 6.263 5.947 5.315 5.5633   12.67
102)     1,3-dichlorobenzene         5.447 5.392 5.495 5.367 5.357 5.025 4.691 4.045 5.1022    9.90
103) C   1,4-dichlorobenzene         5.589 5.506 5.470 5.342 5.453 5.083 4.694 4.139 5.1593    9.79
104)     sec-butylbenzene            1.224 1.204 1.179 1.195 1.192 1.106 1.003 0.838 1.1178   11.97
105)     1,2,3-trimethylbenzene      6.359 6.324 6.262 6.212 6.158 6.052 5.424 4.373 5.8957   11.59
106)     p-isopropyltoluene          1.028 1.024 1.013 1.021 1.037 0.933 0.810 0.633 0.9373   15.48
107)     1,2-dichlorobenzene         5.011 5.055 5.024 4.991 4.892 4.717 4.489 4.038 4.7771    7.44
108)     n-butylbenzene              9.487 9.616 9.786 9.736 9.569 8.674 8.138 6.975 8.9975   11.15
109)     indan                       6.544 6.804 6.702 6.613 6.646 6.642 6.207 5.434 6.4489    6.91
110)     indene                      2.773 2.855 2.945 3.058 3.058 3.116 3.102 2.937 2.9807    4.15
111) C   1,2-dibromo-3-chloropropane 1.726 1.852 1.868 2.127 2.192 2.062 2.050 1.911 1.9735    8.04
112)     undecane                    7.439 8.164 8.202 8.322 8.212 7.317 6.681 5.570 7.4883   12.92
113)     1,2,4,5-tetramethylbenzene  1.020 1.067 1.070 1.118 1.121 1.054 0.966 0.791 1.0258   10.46
114)     dodecane                    5.739 7.773 8.572 8.519 8.824 6.953 6.552 5.479 7.3014   17.99
115) C   1,2,4-trichlorobenzene      3.371 3.684 3.900 3.800 4.152 3.715 3.649 3.378 3.7060    6.98
116)     naphthalene                 0.964 1.053 1.131 1.084 1.174 1.044 1.017 0.889 1.0443    8.68
117)     1,2,3-trichlorobenzene      3.213 3.521 3.586 3.642 3.876 3.477 3.518 3.260 3.5115    5.99
118)     benzothiophene              0.703 0.813 0.857 0.792 0.845 1.136 1.127 0.970 0.9054   17.45
119) C   hexachlorobutadiene         3.109 3.070 3.113 3.223 3.329 2.875 2.822 2.456 2.9999    9.18
120)     2-methylnaphthalene                     1.390 2.019 2.468 3.296 3.613 3.550 2.7225   33.43#
121)     1-methylnaphthalene                     2.387 2.731 3.150 3.792 4.101 3.909 3.3448   20.81
  -----------------------------------------------------------------------------------------------------
 (#) = Out of Range



 TALL171222.M Sat Dec 23 10:53:37 2017                                                       Page: 4
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BFB

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Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154812.D
Acq On    : 22 Dec 2017   2:17 PM
Operator  : AIRLAB15:RY
Sample    : WG1075924-1
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Integration File: rteint.p

Method    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Title     : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update  : Sat Dec 23 09:47:41 2017
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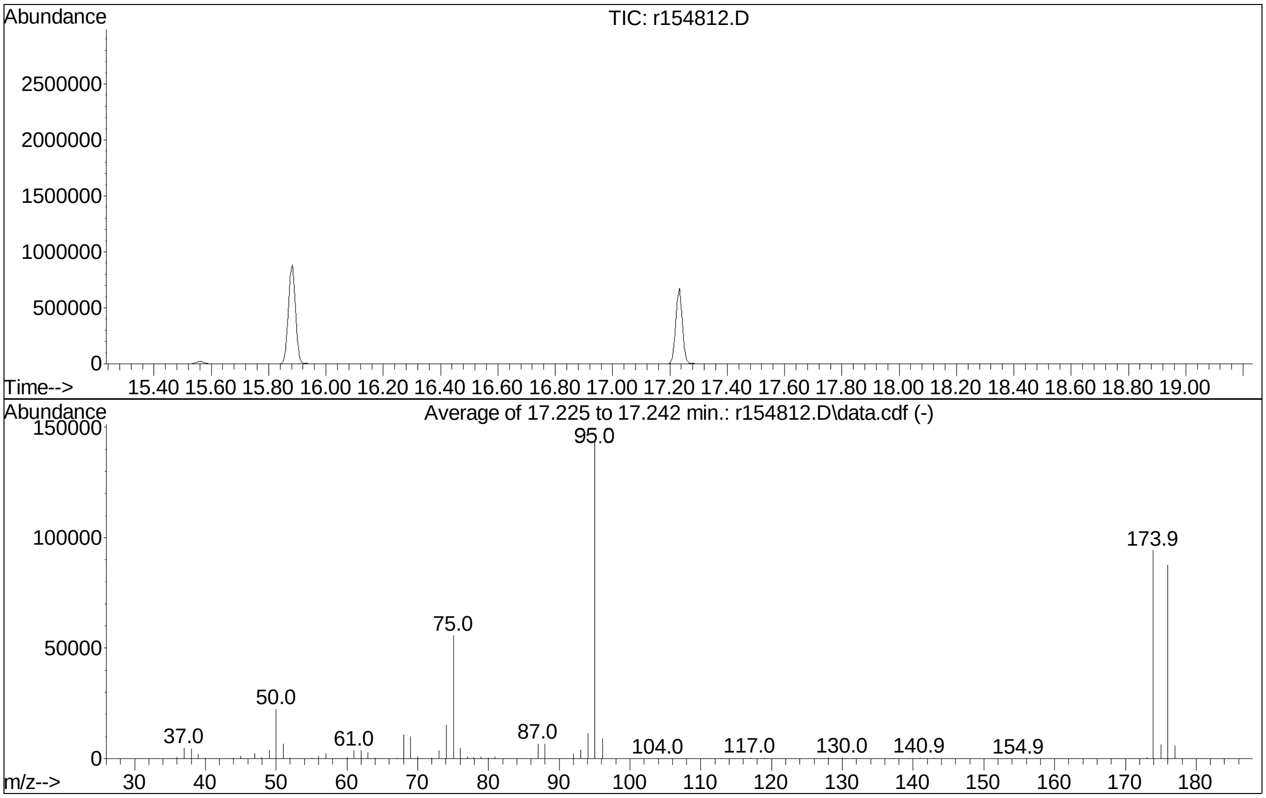

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AutoFind: Scans 2073, 2074, 2075; Background Corrected with Scan 2067

| Target | Rel. to | Lower  | Upper  |  Rel.  |    Raw   |  Result   |
|  Mass  |  Mass   | Limit% | Limit% |  Abn%  |    Abn   | Pass/Fail |
----------------------------------------------------------------------
|   50   |    95   |      8 |     40 |  15.5  |    22403 |   PASS    |
|   75   |    95   |     30 |     66 |  38.6  |    55725 |   PASS    |
|   95   |    95   |    100 |    100 | 100.0  |   144259 |   PASS    |
|   96   |    95   |      5 |      9 |   6.4  |     9169 |   PASS    |
|  173   |   174   |   0.00 |      2 |   0.5  |      443 |   PASS    |
|  174   |    95   |     50 |    120 |  65.3  |    94251 |   PASS    |
|  175   |   174   |      4 |      9 |   6.9  |     6469 |   PASS    |
|  176   |   174   |     93 |    101 |  93.1  |    87730 |   PASS    |
|  177   |   176   |      5 |      9 |   6.5  |     5665 |   PASS    |
----------------------------------------------------------------------
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154816.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.2
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:47:30 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   248186    10.000 ppbV     0.00
     Standard Area  =       254284                Recovery   =   97.60%
    43) 1,4-difluorobenzene         11.14  114   573877    10.000 ppbV     0.00
     Standard Area  =       588274                Recovery   =   97.55%
    67) chlorobenzene-D5            15.88   54   104588    10.000 ppbV     0.00
     Standard Area  =       108475                Recovery   =   96.42%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.78   65   124053    10.037 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.37%
    69) toluene-D8                  14.00   98   524647     9.724 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.24%
    90) bromofluorobenzene          17.23   95   282201    10.009 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.09%

   Target Compounds                                                 Qvalue
     2) chlorodifluoromethane        3.75   51      5859      0.229 ppbV      97
     3) propylene                    3.78   41      4415M6    0.251 ppbV
     4) propane                      3.81   29      5417      0.270 ppbV      99
     5) dichlorodifluoromethane      3.85   85      6175      0.226 ppbV      98
     6) chloromethane                4.02   50      3565      0.228 ppbV     100
     7) Freon-114                    4.11   85      7701      0.225 ppbV      98
     8) methanol                     4.18   31     10112      1.530 ppbV #    58
     9) vinyl chloride               4.23   62      3165      0.216 ppbV      97
    10) 1,3-butadiene                4.37   54      3100      0.228 ppbV      90
    11) butane                       4.42   43      6350M4    0.263 ppbV
    12) acetaldehyde                 4.14   29     10765      1.392 ppbV #    75
    13) bromomethane                 4.65   94      2749      0.219 ppbV      99
    14) chloroethane                 4.83   64      1700      0.234 ppbV      91
    15) ethanol                      4.97   31     16949      1.434 ppbV      99
    16) dichlorofluoromethane        4.93   67      5747      0.226 ppbV #    92
    17) vinyl bromide                5.20  106      3061      0.221 ppbV      86
    18) acrolein                     5.35   56      1675      0.250 ppbV #    67
    19) acetone                      5.49   43     25794      1.615 ppbV #   100
    20) acetonitrile                 5.20   41      3488      0.257 ppbV      91
    21) trichlorofluoromethane       5.66  101      4712      0.220 ppbV      89
    22) isopropyl alcohol            5.76   45     20200M4    0.895 ppbV
    23) acrylonitrile                5.99   53      3070      0.236 ppbV      97
    24) pentane                      6.05   43      6524      0.219 ppbV      99
```

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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154816.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.2
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:47:30 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   -----------------------------------------------------------------------------
    25) ethyl ether                   6.09   31      5266      0.229 ppbV      98
    26) 1,1-dichloroethene            6.35   61      4151      0.218 ppbV      94
    27) tertiary butyl alcohol        6.43   59      5446      0.220 ppbV #    81
    28) methylene chloride            6.50   49      4555      0.237 ppbV      98
    29) 3-chloropropene               6.63   41      5641      0.254 ppbV      96
    30) carbon disulfide              6.80   76      9996      0.212 ppbV #     1
    31) Freon 113                     6.80  101      6148      0.241 ppbV      92
    32) trans-1,2-dichloroethene      7.55   61      5921      0.212 ppbV      99
    33) 1,1-dichloroethane            7.77   63      7228      0.216 ppbV      99
    34) MTBE                          7.87   73      9486      0.204 ppbV      97
    35) vinyl acetate                 7.97   43     10697      0.206 ppbV      99
    36) 2-butanone                    8.25   43     10765      0.219 ppbV #    99
    37) cis-1,2-dichloroethene        8.72   61      4889      0.203 ppbV      95
    38) Ethyl Acetate                 9.03   61      1542      0.222 ppbV #    49
    39) chloroform                    9.07   83      6290      0.223 ppbV      94
    40) Tetrahydrofuran               9.56   42      6358M4    0.204 ppbV
    41) 2,2-dichloropropane           9.08   77      4825      0.208 ppbV      97
    42) 1,2-dichloroethane            9.90   62      4005      0.215 ppbV      91
    44) hexane                        8.97   57      7130      0.215 ppbV #    58
    45) diisopropyl ether             8.98   87      3260      0.205 ppbV      93
    46) tert-butyl ethyl ether        9.61   59     10884      0.199 ppbV      97
    48) 1,1,1-trichloroethane        10.19   97      5199      0.213 ppbV      98
    49) 1,1-dichloropropene          10.55   75      5457      0.205 ppbV      96
    50) benzene                      10.72   78     13288      0.223 ppbV      99
    51) thiophene                    10.87   84      6124      0.227 ppbV      98
    52) carbon tetrachloride         10.89  117      4225      0.199 ppbV      97
    53) cyclohexane                  11.03   56      7454      0.211 ppbV      96
    54) tert-amyl methyl ether       11.43   73     10109      0.198 ppbV      98
    55) dibromomethane               11.63   93      3836      0.214 ppbV      96
    56) 1,2-dichloropropane          11.67   63      4911      0.215 ppbV #    94
    57) bromodichloromethane         11.90   83      6098      0.193 ppbV #    97
    58) 1,4-dioxane                  11.98   88      2841      0.197 ppbV #    54
    59) trichloroethene              11.95  130      4861      0.211 ppbV      96
    60) 2,2,4-trimethylpentane       12.00   57     23076      0.209 ppbV      98
    61) methyl methacrylate          12.21   41      5261      0.216 ppbV #    77
    62) heptane                      12.32   43     11026      0.214 ppbV      96
    63) cis-1,3-dichloropropene      12.97   75      5751      0.191 ppbV      89
    64) 4-methyl-2-pentanone         13.03   43     12223      0.204 ppbV      96
    65) trans-1,3-dichloropropene    13.59   75      5272      0.188 ppbV     100
    66) 1,1,2-trichloroethane        13.79   97      4810      0.215 ppbV      99
```

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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154816.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.2
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:47:30 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    68) toluene                     14.12   91     14988      0.216 ppbV      95
    70) 2-methylthiophene           14.18   97     12101      0.228 ppbV      93
    71) 1,3-dichloropropane         14.14   76      7176      0.217 ppbV #    97
    72) 2-hexanone                  14.43   43     11271      0.201 ppbV      98
    73) 3-methylthiophene           14.38   97      8894      0.224 ppbV      96
    74) dibromochloromethane        14.57  129      5358      0.179 ppbV #    95
    75) 1,2-dibromoethane           14.82  107      6797      0.209 ppbV      96
    76) butyl acetate               15.07   73      1401      0.166 ppbV      80
    77) octane                      15.16   85      5125      0.202 ppbV      93
    78) tetrachloroethene           15.28  166      5373      0.205 ppbV      94
    79) 1,1,1,2-tetrachloroethane   15.91  131      4450      0.198 ppbV #    94
    80) chlorobenzene               15.92  112     11608      0.215 ppbV      94
    81) ethylbenzene                16.26   91     18418      0.208 ppbV      99
    82) 2-ethylthiophene            16.30   97     10641      0.217 ppbV      97
    83) m+p-xylene                  16.43   91     29786      0.413 ppbV      99
    84) bromoform                   16.48  173      4326      0.166 ppbV      93
    85) styrene                     16.74  104     11478      0.193 ppbV      96
    86) 1,1,2,2-tetrachloroethane   16.83   83     10554      0.207 ppbV      99
    87) o-xylene                    16.83   91     15044      0.207 ppbV      97
    88) 1,2,3-trichloropropane      16.95   75      8131      0.196 ppbV      96
    89) nonane                      17.03   43     15250      0.205 ppbV      96
    91) isopropylbenzene            17.34  105     19714      0.208 ppbV      99
    92) bromobenzene                17.42   77     10973      0.208 ppbV      98
    93) 2-chlorotoluene             17.75  126      5400      0.200 ppbV     100
    94) n-propylbenzene             17.77  120      6190      0.197 ppbV      95
    95) 4-chlorotoluene             17.81  126      5565      0.207 ppbV      98
    96) 4-ethyl toluene             17.90  105     21359      0.196 ppbV      94
    97) 1,3,5-trimethylbenzene      17.97  105     17834      0.203 ppbV      98
    98) tert-butylbenzene           18.31  119     17432      0.197 ppbV      99
    99) 1,2,4-trimethylbenzene      18.31  105     16881      0.195 ppbV #    86
   100) decane                      18.39   57     14877      0.199 ppbV      99
   101) Benzyl Chloride             18.43   91      9274      0.138 ppbV      98
   102) 1,3-dichlorobenzene         18.44  146     11393      0.203 ppbV      98
   103) 1,4-dichlorobenzene         18.50  146     11690      0.205 ppbV      99
   104) sec-butylbenzene            18.53  105     25597      0.205 ppbV     100
   105) 1,2,3-trimethylbenzene      18.67  105     13302      0.207 ppbV     100
   106) p-isopropyltoluene          18.67  119     21497      0.198 ppbV      96
   107) 1,2-dichlorobenzene         18.79  146     10482      0.205 ppbV      95
   108) n-butylbenzene              19.02   91     19844      0.198 ppbV      98
   109) indan                       18.84  117     13688      0.197 ppbV      96

TALL171222.M Sat Dec 23 10:51:16 2017                               Page: 3
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154816.D
Acq On    : 22 Dec 2017   4:49 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.2
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:47:30 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
 110) indene                        18.93  115      5801      0.181 ppbV #    94
 111) 1,2-dibromo-3-chloropr...     19.18   75      3610      0.157 ppbV #    85
 112) undecane                      19.46   57     15560      0.181 ppbV #    98
 113) 1,2,4,5-tetramethylben...     19.69  119     21330      0.182 ppbV      97
 114) dodecane                      20.42   57     12005      0.130 ppbV      99
 115) 1,2,4-trichlorobenzene        20.37  180      7052      0.162 ppbV      97
 116) naphthalene                   20.48  128     20157      0.164 ppbV      99
 117) 1,2,3-trichlorobenzene        20.74  180      6721      0.166 ppbV      97
 118) benzothiophene                20.55  134     14715      0.167 ppbV      99
 119) hexachlorobutadiene           20.81  225      6504      0.187 ppbV      96
 120) 2-methylnaphthalene           21.68              0       N.D.
 121) 1-methylnaphthalene           21.85  142      2615      0.079 ppbV      95
 ---------------------------------------------------------------------------

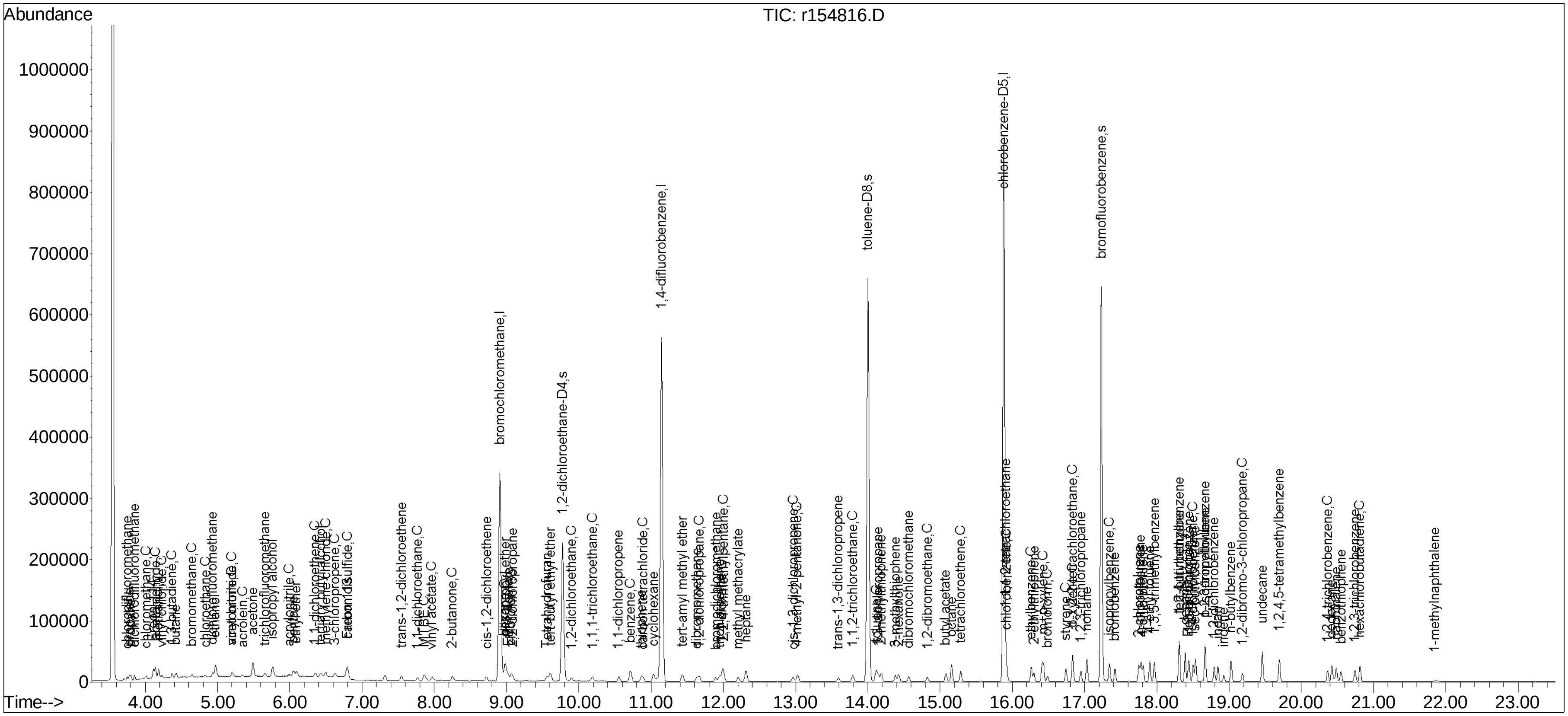
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154816.D
Acq On    : 22 Dec 2017   4:49 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.2
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:47:30 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

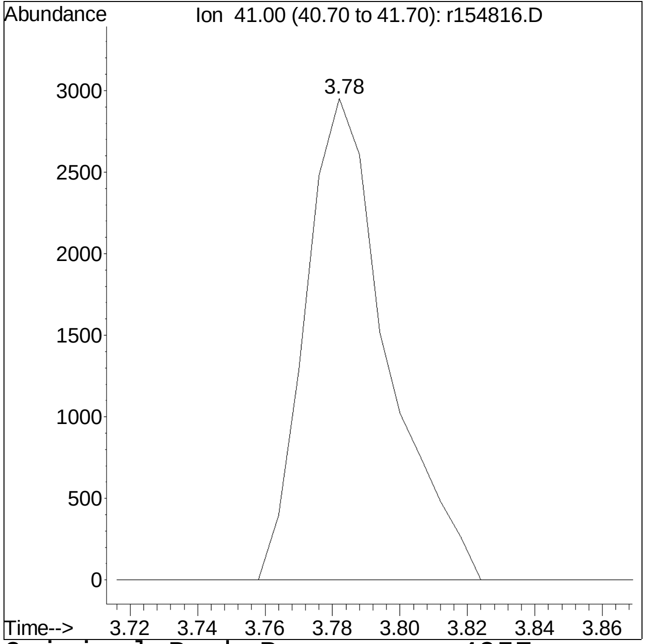
Sub List     : Default - All compounds listed7\171222T_ICAL\r154820.D
```



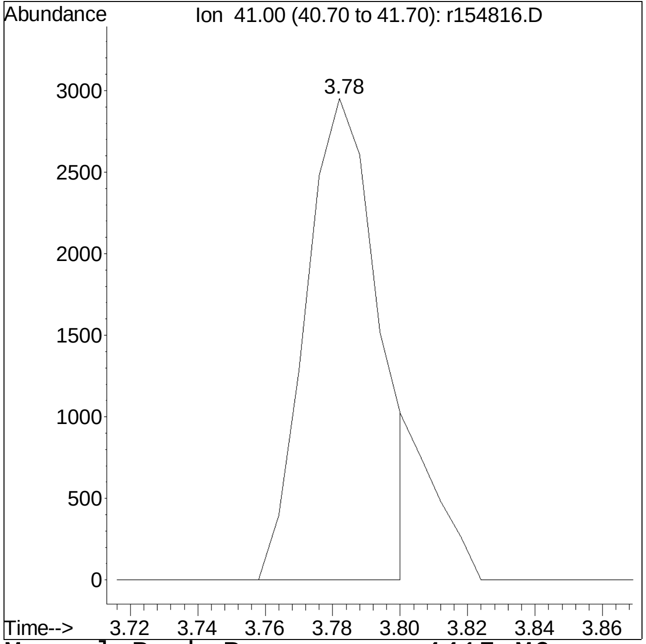
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154816.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:49 PM        Instrument  :
Sample      : ITO15-SIMSTD0.2            Quant Date  : 12/23/2017  9:24 am
```

Compound #3: propylene



Original Peak Response = 4957



Manual Peak Response = 4415 M6

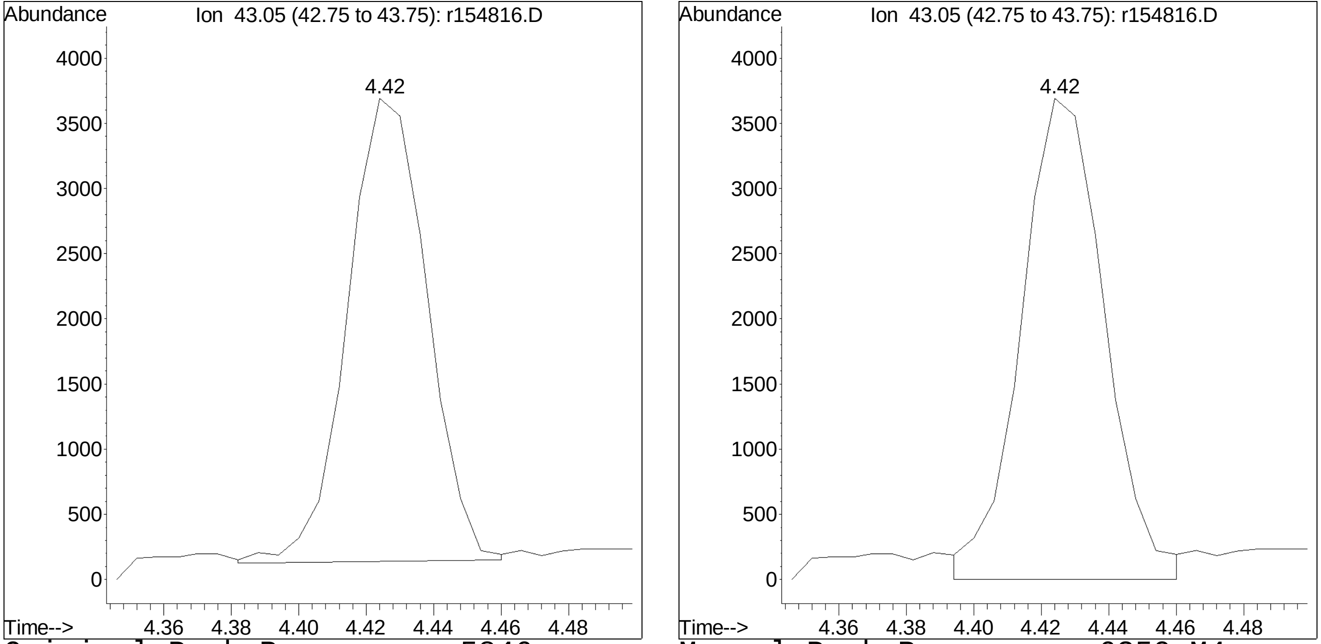
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154816.D
Date Inj'd : 12/22/2017 4:49 PM
Sample : ITO15-SIMSTD0.2

QMethod : TALL171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 9:24 am

Compound #11: butane

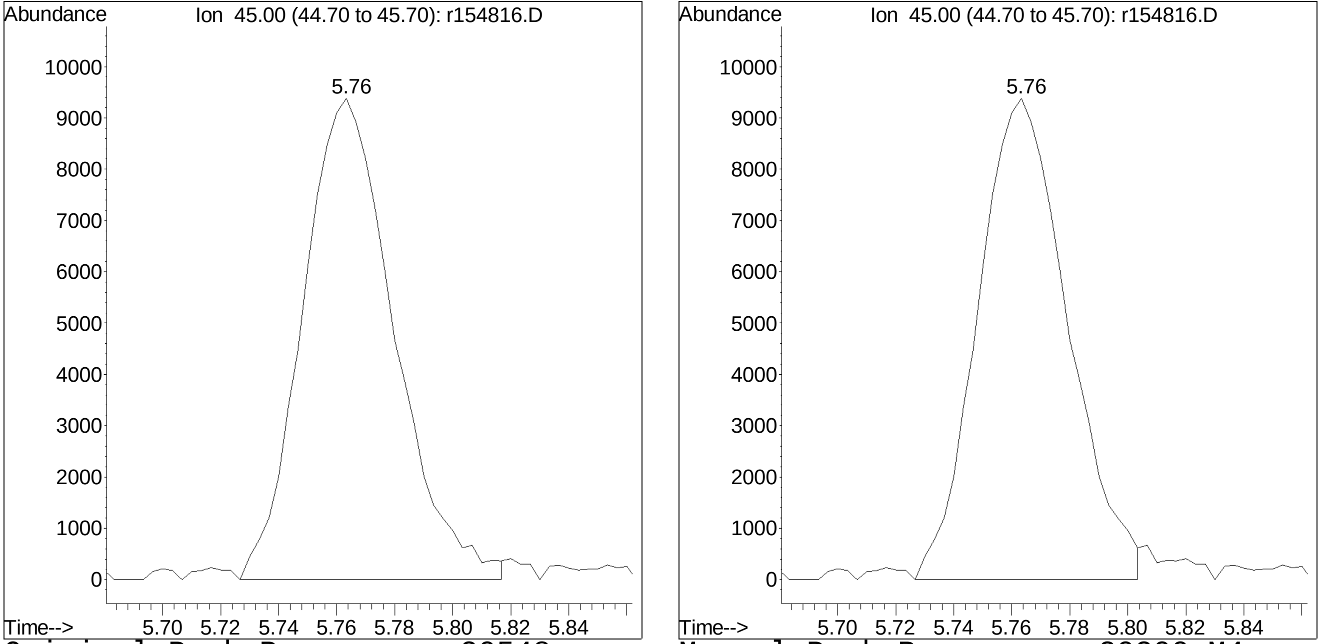


Original Peak Response = 5846 Manual Peak Response = 6350 M4
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154816.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:49 PM       Instrument   :
Sample      : ITO15-SIMSTD0.2           Quant Date   : 12/23/2017  9:24 am
```

Compound #22: isopropyl alcohol

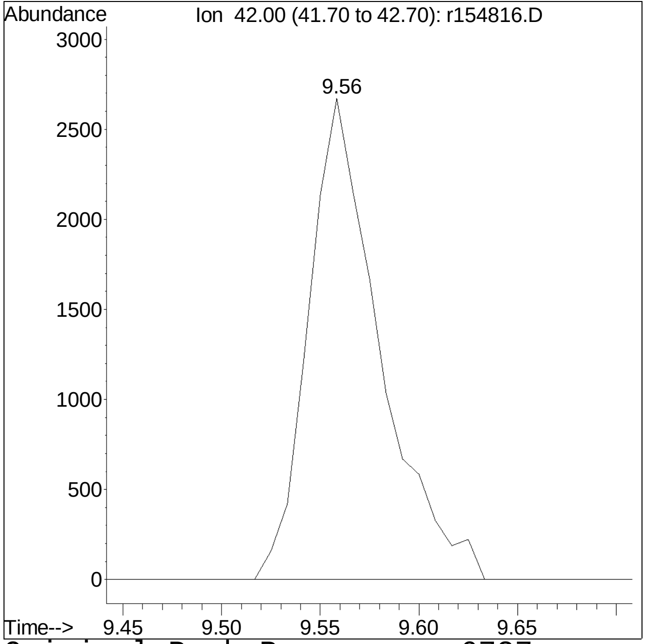


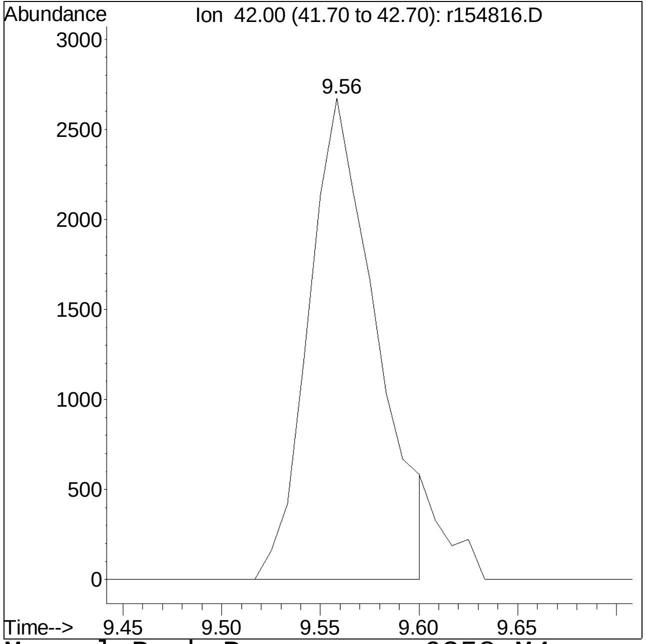
```
Original Peak Response = 20548        Manual Peak Response = 20200 M4
M4 = Poor automated baseline construction.
```

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154816.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:49 PM        Instrument  :
Sample      : ITO15-SIMSTD0.2            Quant Date  : 12/23/2017  9:24 am
```

Compound #40: Tetrahydrofuran





Original Peak Response = 6727   Manual Peak Response = 6358 M4

M4 = Poor automated baseline construction.

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154817.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:39:12 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   248063    10.000 ppbV     0.00
     Standard Area  =       254284                 Recovery   =   97.55%
    43) 1,4-difluorobenzene         11.15  114   586845    10.000 ppbV     0.00
     Standard Area  =       588274                 Recovery   =   99.76%
    67) chlorobenzene-D5            15.88   54   105442    10.000 ppbV     0.00
     Standard Area  =       108475                 Recovery   =   97.20%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.78   65   125741     9.948 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.48%
    69) toluene-D8                  14.00   98   541527     9.955 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.55%
    90) bromofluorobenzene          17.23   95   291211    10.245 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  102.45%

   Target Compounds                                                 Qvalue
     2) chlorodifluoromethane        3.75   51     13882      0.543 ppbV      99
     3) propylene                    3.78   41     10136M6    0.577 ppbV
     4) propane                      3.81   29     11906      0.595 ppbV      96
     5) dichlorodifluoromethane      3.85   85     14897      0.547 ppbV      97
     6) chloromethane                4.01   50      8556      0.547 ppbV      96
     7) Freon-114                    4.11   85     18614      0.544 ppbV      97
     8) methanol                     4.18   31     22252      3.368 ppbV #    85
     9) vinyl chloride               4.23   62      7938      0.541 ppbV      99
    10) 1,3-butadiene                4.37   54      7317      0.539 ppbV      96
    11) butane                       4.42   43     14875      0.616 ppbV      99
    12) acetaldehyde                 4.14   29     24681      3.194 ppbV      90
    13) bromomethane                 4.65   94      6936      0.553 ppbV      95
    14) chloroethane                 4.83   64      3977      0.549 ppbV      99
    15) ethanol                      4.97   31     35582      3.012 ppbV      96
    16) dichlorofluoromethane        4.93   67     14100      0.554 ppbV      99
    17) vinyl bromide                5.20  106      7320      0.530 ppbV     100
    18) acrolein                     5.34   56      3682      0.551 ppbV #    85
    19) acetone                      5.48   43     53987      3.382 ppbV #   100
    20) acetonitrile                 5.20   41      8204      0.604 ppbV      98
    21) trichlorofluoromethane       5.66  101     11618      0.544 ppbV      99
    22) isopropyl alcohol            5.76   45     39158      1.737 ppbV      98
    23) acrylonitrile                5.98   53      6832      0.526 ppbV #    86
    24) pentane                      6.05   43     16882      0.567 ppbV      98

TALL171222.M Sat Dec 23 10:51:38 2017                                Page: 1
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154817.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:39:12 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) ethyl ether                  6.09   31     12645      0.550 ppbV      99
    26) 1,1-dichloroethene           6.36   61     10496      0.552 ppbV      95
    27) tertiary butyl alcohol       6.42   59     13350      0.540 ppbV #    92
    28) methylene chloride           6.49   49     10414      0.541 ppbV      99
    29) 3-chloropropene              6.63   41     12671      0.571 ppbV      96
    30) carbon disulfide             6.79   76     23403      0.497 ppbV #    26
    31) Freon 113                    6.79  101     13569      0.532 ppbV      97
    32) trans-1,2-dichloroethene     7.55   61     14304      0.513 ppbV      98
    33) 1,1-dichloroethane           7.77   63     17518      0.524 ppbV      99
    34) MTBE                         7.86   73     23495      0.504 ppbV      98
    35) vinyl acetate                7.97   43     25345      0.489 ppbV      97
    36) 2-butanone                   8.24   43     25692      0.524 ppbV      99
    37) cis-1,2-dichloroethene       8.72   61     12419      0.515 ppbV      99
    38) Ethyl Acetate                9.02   61      3795      0.546 ppbV      64
    39) chloroform                   9.06   83     15233      0.539 ppbV      97
    40) Tetrahydrofuran              9.55   42     15320M6    0.491 ppbV
    41) 2,2-dichloropropane          9.08   77     11690      0.504 ppbV      91
    42) 1,2-dichloroethane           9.90   62     10034      0.539 ppbV      98
    44) hexane                       8.97   57     17789      0.526 ppbV #    69
    45) diisopropyl ether            8.98   87      8350      0.514 ppbV      98
    46) tert-butyl ethyl ether       9.60   59     28207      0.504 ppbV      98
    48) 1,1,1-trichloroethane       10.19   97     12247      0.490 ppbV      99
    49) 1,1-dichloropropene         10.56   75     13772      0.505 ppbV      99
    50) benzene                     10.72   78     31511      0.516 ppbV      99
    51) thiophene                   10.87   84     14741      0.535 ppbV     100
    52) carbon tetrachloride        10.89  117     10481      0.483 ppbV      99
    53) cyclohexane                 11.03   56     18165      0.502 ppbV      98
    54) tert-amyl methyl ether      11.43   73     25026      0.479 ppbV      99
    55) dibromomethane              11.63   93      9720      0.529 ppbV      99
    56) 1,2-dichloropropane         11.67   63     11963      0.513 ppbV      97
    57) bromodichloromethane        11.90   83     15335      0.475 ppbV      98
    58) 1,4-dioxane                 11.98   88      7590      0.514 ppbV #    82
    59) trichloroethene             11.95  130     12063      0.512 ppbV      97
    60) 2,2,4-trimethylpentane      12.00   57     58129      0.514 ppbV      98
    61) methyl methacrylate         12.21   41     13648      0.548 ppbV      96
    62) heptane                     12.32   43     26693      0.507 ppbV      99
    63) cis-1,3-dichloropropene     12.97   75     14158      0.459 ppbV      97
    64) 4-methyl-2-pentanone        13.03   43     29676      0.483 ppbV      99
    65) trans-1,3-dichloropropene   13.59   75     13156      0.459 ppbV      98
    66) 1,1,2-trichloroethane       13.79   97     11363      0.496 ppbV      99

TALL171222.M Sat Dec 23 10:51:38 2017                               Page: 2
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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154817.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:39:12 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    68) toluene                       14.12   91     36331      0.520 ppbV      96
    70) 2-methylthiophene             14.18   97     29961      0.559 ppbV      97
    71) 1,3-dichloropropane           14.15   76     17461      0.525 ppbV     100
    72) 2-hexanone                    14.42   43     28718      0.509 ppbV     100
    73) 3-methylthiophene             14.38   97     21984      0.550 ppbV      96
    74) dibromochloromethane          14.57  129     13235      0.439 ppbV      99
    75) 1,2-dibromoethane             14.82  107     16902      0.515 ppbV      97
    76) butyl acetate                 15.07   73      3784      0.445 ppbV      91
    77) octane                        15.16   85     13167      0.514 ppbV      98
    78) tetrachloroethene             15.28  166     14206      0.538 ppbV      98
    79) 1,1,1,2-tetrachloroethane     15.91  131     11161      0.492 ppbV      97
    80) chlorobenzene                 15.93  112     27964      0.513 ppbV      97
    81) ethylbenzene                  16.26   91     45865      0.513 ppbV      99
    82) 2-ethylthiophene              16.30   97     26906      0.545 ppbV      98
    83) m+p-xylene                    16.42   91     75357      1.036 ppbV     100
    84) bromoform                     16.48  173     11069      0.422 ppbV      94
    85) styrene                       16.74  104     29396      0.491 ppbV      99
    86) 1,1,2,2-tetrachloroethane     16.83   83     26140      0.509 ppbV      97
    87) o-xylene                      16.83   91     38205      0.522 ppbV     100
    88) 1,2,3-trichloropropane        16.95   75     21060      0.504 ppbV      96
    89) nonane                        17.03   43     38875      0.519 ppbV      99
    91) isopropylbenzene              17.34  105     48771      0.509 ppbV     100
    92) bromobenzene                  17.43   77     27543      0.518 ppbV     100
    93) 2-chlorotoluene               17.75  126     13634      0.501 ppbV      99
    94) n-propylbenzene               17.78  120     15876      0.500 ppbV      88
    95) 4-chlorotoluene               17.81  126     13706      0.506 ppbV      95
    96) 4-ethyl toluene               17.90  105     55156      0.501 ppbV      99
    97) 1,3,5-trimethylbenzene        17.97  105     43790      0.493 ppbV      98
    98) tert-butylbenzene             18.31  119     43347      0.486 ppbV      97
    99) 1,2,4-trimethylbenzene        18.31  105     43509      0.498 ppbV      89
   100) decane                        18.39   57     38155      0.505 ppbV     100
   101) Benzyl Chloride               18.43   91     25880      0.381 ppbV      97
   102) 1,3-dichlorobenzene           18.45  146     28426      0.503 ppbV      99
   103) 1,4-dichlorobenzene           18.50  146     29026      0.505 ppbV      99
   104) sec-butylbenzene              18.53  105     63483      0.505 ppbV     100
   105) 1,2,3-trimethylbenzene        18.68  105     33339      0.513 ppbV      97
   106) p-isopropyltoluene            18.67  119     53984      0.494 ppbV      98
   107) 1,2-dichlorobenzene           18.79  146     26652      0.517 ppbV      95
   108) n-butylbenzene                19.03   91     50695      0.502 ppbV      99
   109) indan                         18.85  117     35873      0.512 ppbV      99
```

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                   Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154817.D
Acq On    : 22 Dec 2017   5:27 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.5
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:39:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
Sub List     : Default - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
 110) indene                      18.93  115     15051      0.467 ppbV      99
 111) 1,2-dibromo-3-chloropr...   19.18   75      9763      0.422 ppbV #    91
 112) undecane                    19.46   57     43043      0.497 ppbV      98
 113) 1,2,4,5-tetramethylben...   19.70  119     56267      0.476 ppbV      99
 114) dodecane                    20.42   57     40981      0.440 ppbV      98
 115) 1,2,4-trichlorobenzene      20.37  180     19421      0.444 ppbV      98
 116) naphthalene                 20.48  128     55502      0.448 ppbV      99
 117) 1,2,3-trichlorobenzene      20.74  180     18561      0.454 ppbV      99
 118) benzothiophene              20.55  134     42845      0.481 ppbV      99
 119) hexachlorobutadiene         20.81  225     16186      0.461 ppbV      99
 120) 2-methylnaphthalene         21.64  142      5971      0.229 ppbV      99
 121) 1-methylnaphthalene         21.83  142     10388      0.313 ppbV      95
 --------------------------------------------------------------------------

 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154817.D
Acq On    : 22 Dec 2017   5:27 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.5
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:39:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

Sub List     : Default - All compounds listed7\171222T_ICAL\r154820.D
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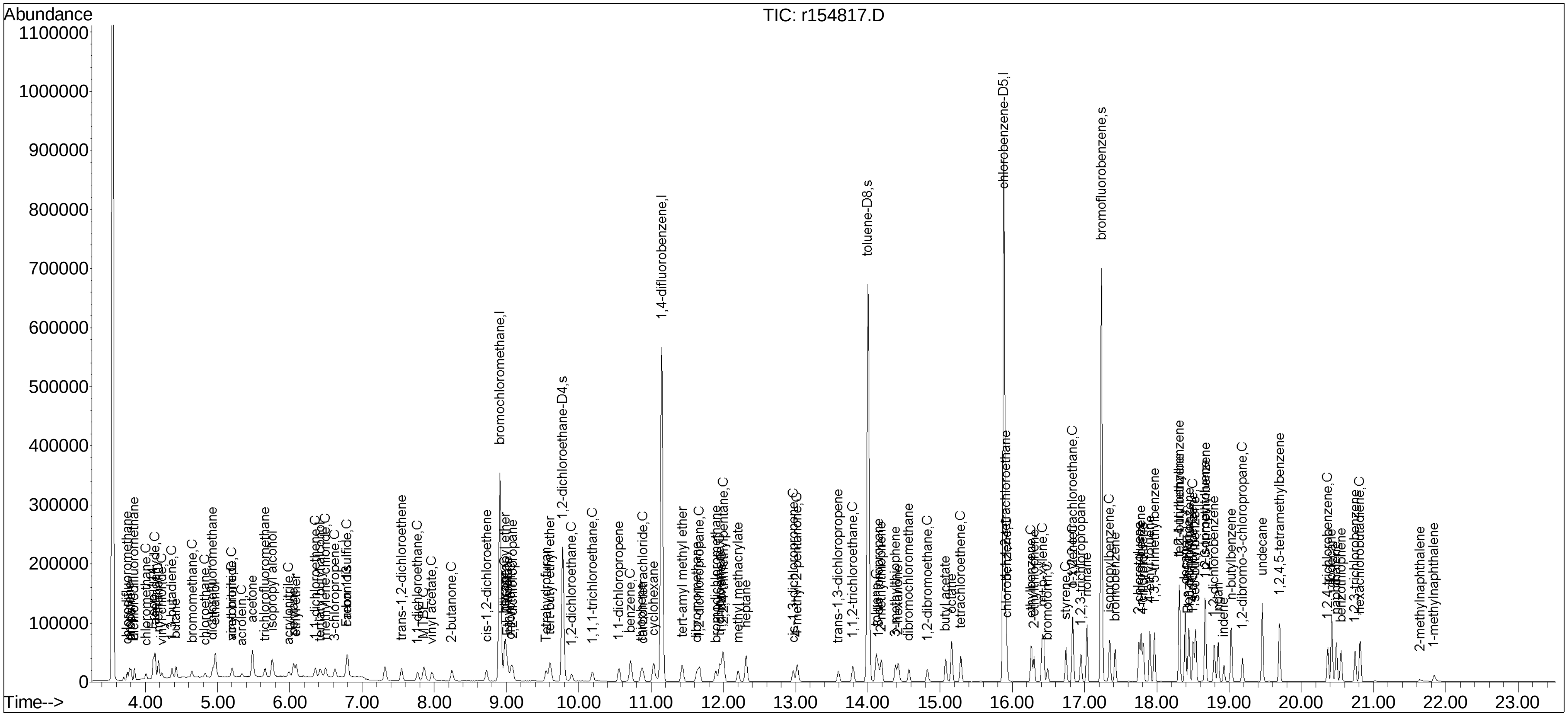

TALL171222.M Sat Dec 23 10:51:39 2017

Manual Integration/Negative Proof Report

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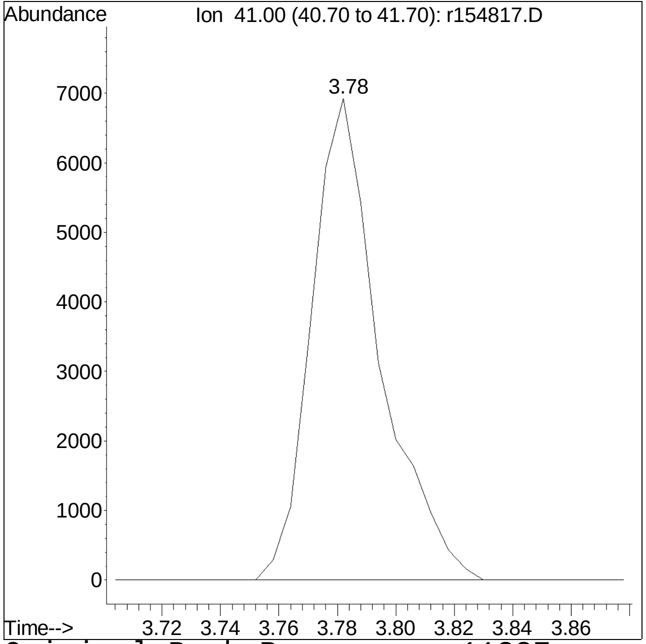
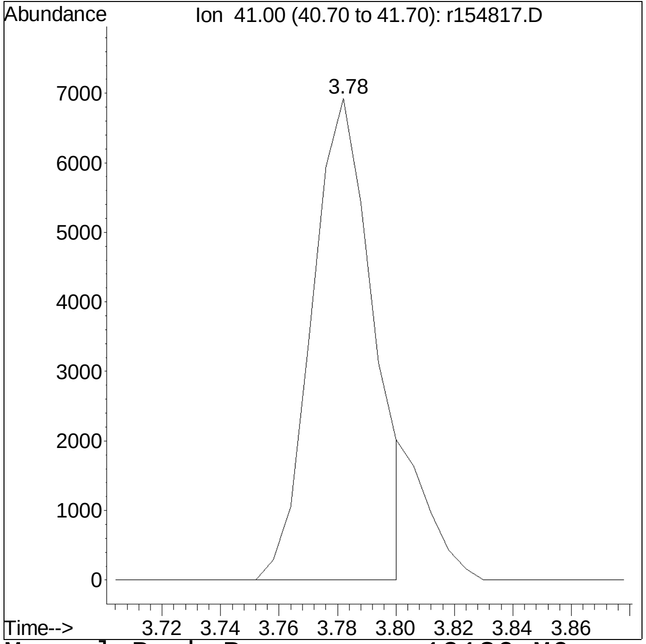
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154817.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  5:27 PM        Instrument  :
Sample      : ITO15-SIMSTD0.5            Quant Date  : 12/23/2017  9:24 am
```

Compound #3: propylene





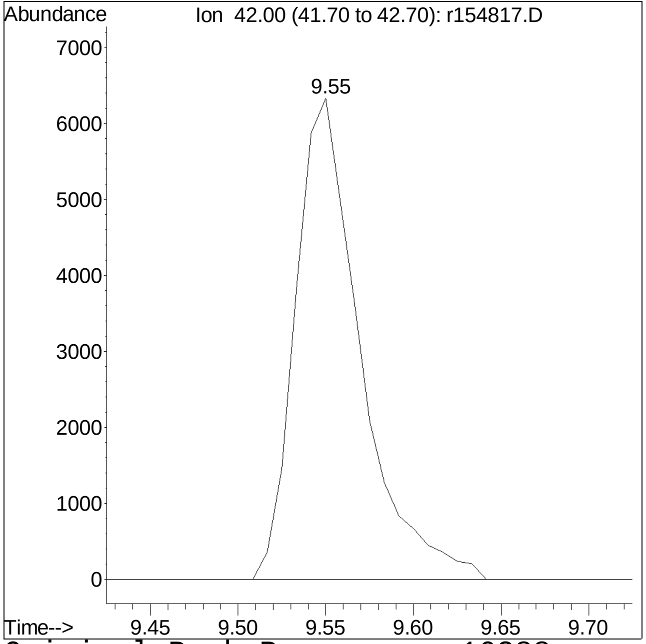
Original Peak Response = 11287   Manual Peak Response = 10136 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

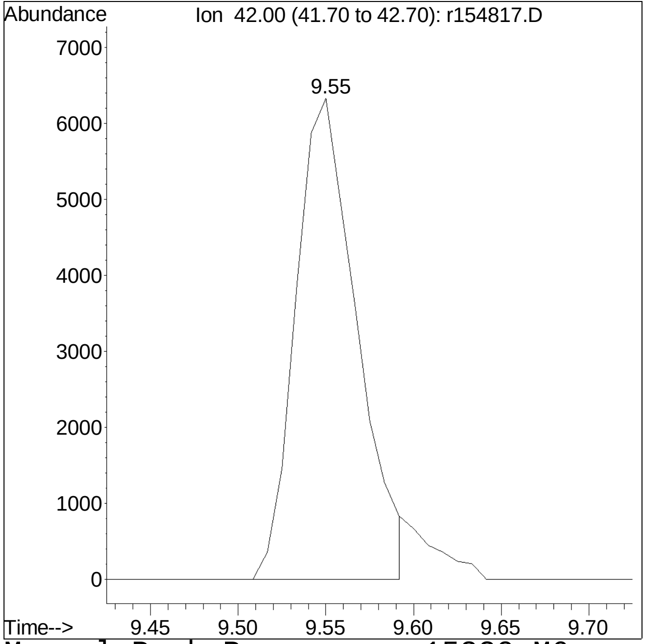
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154817.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  5:27 PM       Instrument   :
Sample      : ITO15-SIMSTD0.5           Quant Date   : 12/23/2017  9:24 am
```

Compound #40: Tetrahydrofuran



Original Peak Response = 16288



Manual Peak Response = 15320 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154818.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:40:28 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   249661    10.000 ppbV     0.00
     Standard Area  =       254284              Recovery   =   98.18%
    43) 1,4-difluorobenzene         11.15  114   592785    10.000 ppbV     0.00
     Standard Area  =       588274              Recovery   =  100.77%
    67) chlorobenzene-D5            15.88   54   108140    10.000 ppbV     0.00
     Standard Area  =       108475              Recovery   =   99.69%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.78   65   126193     9.884 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   98.84%
    69) toluene-D8                  14.01   98   534821     9.587 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   95.87%
    90) bromofluorobenzene          17.23   95   301146    10.330 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  103.30%

   Target Compounds                                                   Qvalue
     2) chlorodifluoromethane        3.75   51     27605      1.073 ppbV     100
     3) propylene                    3.78   41     20184M6    1.141 ppbV
     4) propane                      3.80   29     21841      1.084 ppbV #    96
     5) dichlorodifluoromethane      3.85   85     29788      1.086 ppbV      96
     6) chloromethane                4.01   50     16944      1.076 ppbV      98
     7) Freon-114                    4.11   85     37102      1.077 ppbV      97
     8) methanol                     4.18   31     41847      6.293 ppbV      93
     9) vinyl chloride               4.23   62     15556      1.054 ppbV     100
    10) 1,3-butadiene                4.37   54     14691      1.075 ppbV      94
    11) butane                       4.42   43     28769      1.183 ppbV      98
    12) acetaldehyde                 4.14   29     49267      6.335 ppbV      95
    13) bromomethane                 4.65   94     13461      1.067 ppbV      94
    14) chloroethane                 4.83   64      8102      1.111 ppbV      97
    15) ethanol                      4.96   31     65874      5.541 ppbV      98
    16) dichlorofluoromethane        4.94   67     28324      1.106 ppbV      98
    17) vinyl bromide                5.20  106     14695      1.056 ppbV      99
    18) acrolein                     5.33   56      7083      1.053 ppbV      91
    19) acetone                      5.48   43    104027      6.475 ppbV      97
    20) acetonitrile                 5.20   41     14747      1.079 ppbV      97
    21) trichlorofluoromethane       5.66  101     23199      1.078 ppbV      92
    22) isopropyl alcohol            5.75   45     70812      3.120 ppbV     100
    23) acrylonitrile                5.99   53     13654      1.045 ppbV      97
    24) pentane                      6.05   43     33717      1.126 ppbV      99
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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154818.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:40:28 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) ethyl ether                  6.09   31     24516      1.059 ppbV      96
    26) 1,1-dichloroethene           6.36   61     20417      1.068 ppbV      97
    27) tertiary butyl alcohol       6.42   59     26770      1.075 ppbV      98
    28) methylene chloride           6.50   49     21219      1.096 ppbV      95
    29) 3-chloropropene              6.63   41     24567      1.100 ppbV      98
    30) carbon disulfide             6.80   76     47026      0.992 ppbV #    65
    31) Freon 113                    6.80  101     27532      1.072 ppbV      99
    32) trans-1,2-dichloroethene     7.55   61     28721      1.024 ppbV      99
    33) 1,1-dichloroethane           7.77   63     35249      1.047 ppbV     100
    34) MTBE                         7.86   73     47309      1.009 ppbV      98
    35) vinyl acetate                7.97   43     51228      0.982 ppbV      98
    36) 2-butanone                   8.24   43     51255      1.039 ppbV      99
    37) cis-1,2-dichloroethene       8.72   61     25052      1.033 ppbV      97
    38) Ethyl Acetate                9.02   61      7238      1.035 ppbV      82
    39) chloroform                   9.07   83     30028      1.057 ppbV      97
    40) Tetrahydrofuran              9.54   42     31837M6    1.013 ppbV
    41) 2,2-dichloropropane          9.09   77     23773      1.019 ppbV      97
    42) 1,2-dichloroethane           9.90   62     19647      1.049 ppbV      99
    44) hexane                       8.98   57     34891      1.021 ppbV      90
    45) diisopropyl ether            8.98   87     16601      1.012 ppbV      99
    46) tert-butyl ethyl ether       9.60   59     56912      1.006 ppbV      99
    48) 1,1,1-trichloroethane       10.19   97     25307      1.002 ppbV      97
    49) 1,1-dichloropropene         10.56   75     27214      0.989 ppbV      98
    50) benzene                     10.72   78     63128      1.024 ppbV      99
    51) thiophene                   10.87   84     30125      1.082 ppbV      98
    52) carbon tetrachloride        10.89  117     21044      0.959 ppbV      98
    53) cyclohexane                 11.04   56     36635      1.003 ppbV      96
    54) tert-amyl methyl ether      11.43   73     50620      0.959 ppbV      98
    55) dibromomethane              11.64   93     19102      1.030 ppbV      96
    56) 1,2-dichloropropane         11.67   63     23810      1.010 ppbV      97
    57) bromodichloromethane        11.90   83     30650      0.940 ppbV      99
    58) 1,4-dioxane                 11.97   88     14746      0.988 ppbV      92
    59) trichloroethene             11.95  130     23772      0.999 ppbV      97
    60) 2,2,4-trimethylpentane      12.00   57    116446      1.019 ppbV     100
    61) methyl methacrylate         12.21   41     27602      1.097 ppbV      97
    62) heptane                     12.32   43     53960      1.015 ppbV      98
    63) cis-1,3-dichloropropene     12.97   75     29047      0.933 ppbV      97
    64) 4-methyl-2-pentanone        13.02   43     61992      0.999 ppbV      99
    65) trans-1,3-dichloropropene   13.59   75     26544      0.917 ppbV      99
    66) 1,1,2-trichloroethane       13.79   97     23208      1.002 ppbV      98
```

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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154818.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:40:28 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    68) toluene                       14.12   91     72835      1.017 ppbV      99
    70) 2-methylthiophene             14.19   97     61736      1.123 ppbV      98
    71) 1,3-dichloropropane           14.15   76     34706      1.017 ppbV      95
    72) 2-hexanone                    14.42   43     59472      1.028 ppbV      99
    73) 3-methylthiophene             14.38   97     45188      1.103 ppbV      98
    74) dibromochloromethane          14.57  129     28667      0.927 ppbV      97
    75) 1,2-dibromoethane             14.82  107     33724      1.002 ppbV      98
    76) butyl acetate                 15.07   73      8178      0.937 ppbV      98
    77) octane                        15.16   85     26275      1.001 ppbV      99
    78) tetrachloroethene             15.28  166     27130      1.002 ppbV     100
    79) 1,1,1,2-tetrachloroethane     15.91  131     22486      0.966 ppbV      98
    80) chlorobenzene                 15.93  112     56306      1.007 ppbV      96
    81) ethylbenzene                  16.27   91     92646      1.010 ppbV      97
    82) 2-ethylthiophene              16.30   97     54510      1.077 ppbV     100
    83) m+p-xylene                    16.43   91    153839      2.062 ppbV      98
    84) bromoform                     16.49  173     23518      0.874 ppbV      96
    85) styrene                       16.74  104     61127      0.996 ppbV      96
    86) 1,1,2,2-tetrachloroethane     16.83   83     53278      1.012 ppbV      97
    87) o-xylene                      16.84   91     76472      1.018 ppbV     100
    88) 1,2,3-trichloropropane        16.95   75     43033      1.004 ppbV      98
    89) nonane                        17.03   43     79144      1.031 ppbV      99
    91) isopropylbenzene              17.35  105     98917      1.007 ppbV      99
    92) bromobenzene                  17.43   77     55509      1.018 ppbV      96
    93) 2-chlorotoluene               17.75  126     27494      0.985 ppbV      98
    94) n-propylbenzene               17.78  120     32138      0.987 ppbV      92
    95) 4-chlorotoluene               17.82  126     27333      0.985 ppbV      97
    96) 4-ethyl toluene               17.90  105    111121      0.984 ppbV      99
    97) 1,3,5-trimethylbenzene        17.97  105     90442      0.994 ppbV      98
    98) tert-butylbenzene             18.31  119     91092      0.996 ppbV      97
    99) 1,2,4-trimethylbenzene        18.32  105     89748      1.001 ppbV      98
   100) decane                        18.39   57     77376      0.999 ppbV      98
   101) Benzyl Chloride               18.43   91     56321      0.809 ppbV      97
   102) 1,3-dichlorobenzene           18.45  146     59425      1.026 ppbV      99
   103) 1,4-dichlorobenzene           18.50  146     59151      1.003 ppbV      98
   104) sec-butylbenzene              18.54  105    127541      0.990 ppbV      96
   105) 1,2,3-trimethylbenzene        18.68  105     67721      1.017 ppbV      98
   106) p-isopropyltoluene            18.67  119    109559      0.977 ppbV      98
   107) 1,2-dichlorobenzene           18.79  146     54329      1.027 ppbV      94
   108) n-butylbenzene                19.03   91    105829      1.023 ppbV      98
   109) indan                         18.85  117     72472      1.008 ppbV      99
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154818.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:40:28 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
   110) indene                        18.93  115     31846      0.963 ppbV      98
   111) 1,2-dibromo-3-chloropr...     19.18   75     20199      0.852 ppbV      94
   112) undecane                      19.46   57     88696      0.999 ppbV      98
   113) 1,2,4,5-tetramethylben...     19.70  119    115690      0.954 ppbV      98
   114) dodecane                      20.42   57     92693      0.971 ppbV      97
   115) 1,2,4-trichlorobenzene        20.37  180     42175      0.939 ppbV      99
   116) naphthalene                   20.48  128    122266      0.963 ppbV     100
   117) 1,2,3-trichlorobenzene        20.74  180     38775      0.925 ppbV      99
   118) benzothiophene                20.55  134     92717      1.015 ppbV      99
   119) hexachlorobutadiene           20.81  225     33666      0.935 ppbV      99
   120) 2-methylnaphthalene           21.63  142     15031      0.563 ppbV      98
   121) 1-methylnaphthalene           21.83  142     25810      0.758 ppbV      96
   -------------------------------------------------------------------------

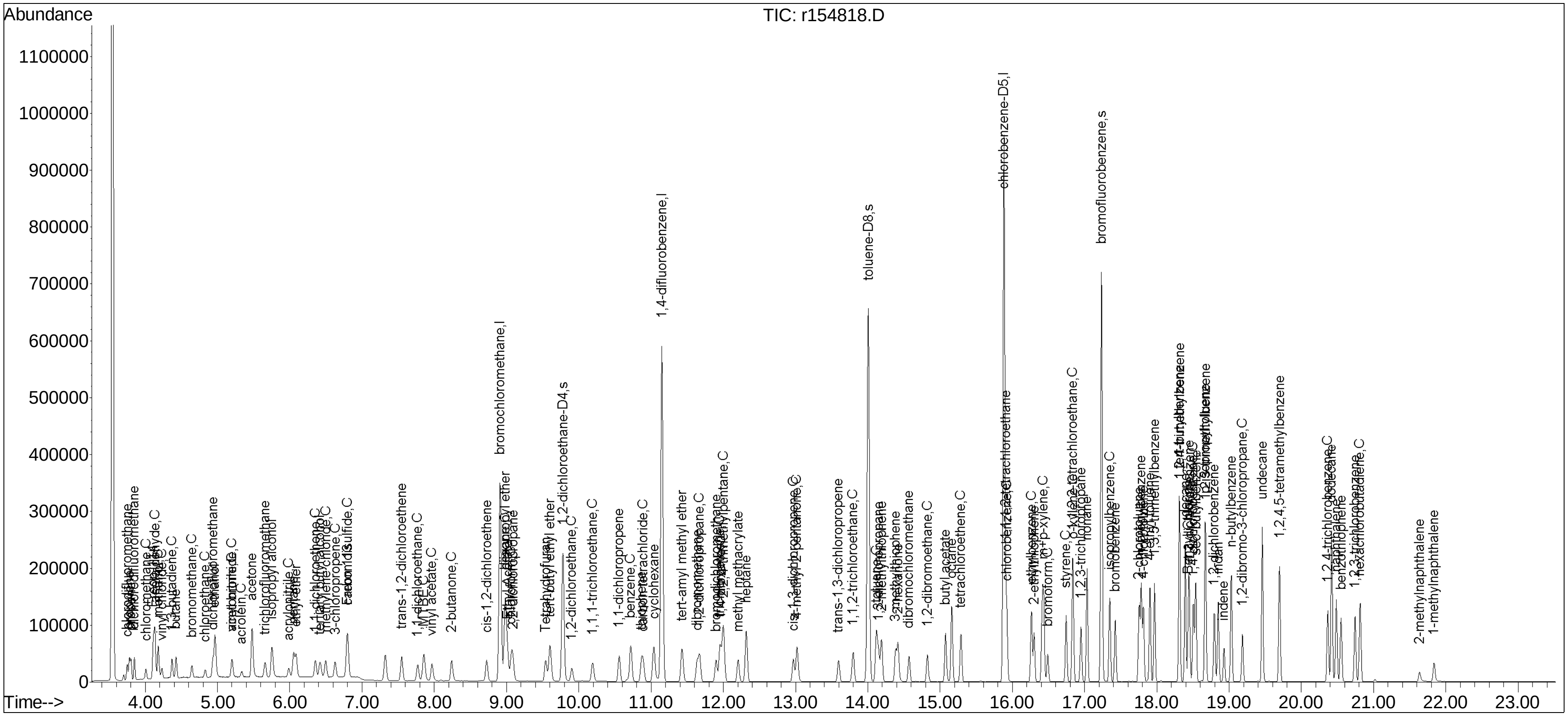
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154818.D
Acq On    : 22 Dec 2017   6:07 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD1.0
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:40:28 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

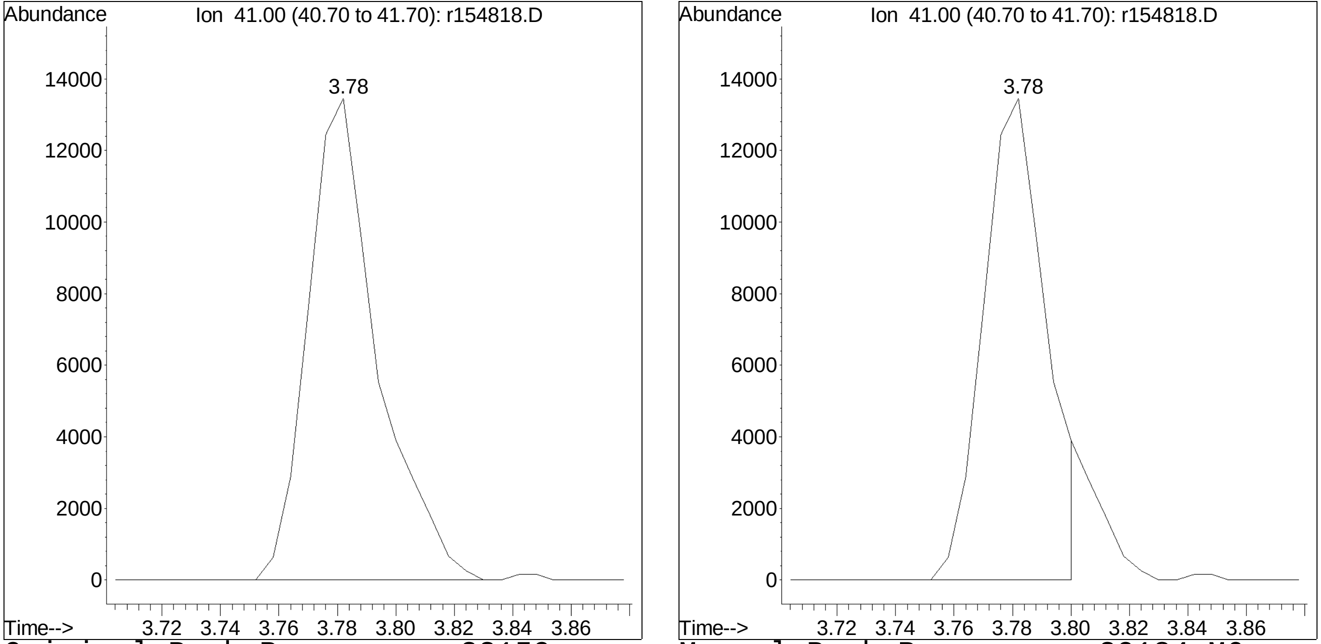
Sub List     : Default - All compounds listed7\171222T_ICAL\r154820.D
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154818.D                   Operator   : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:07 PM         Instrument :
Sample      : ITO15-SIMSTD1.0             Quant Date : 12/23/2017  9:24 am
```

Compound #3: propylene



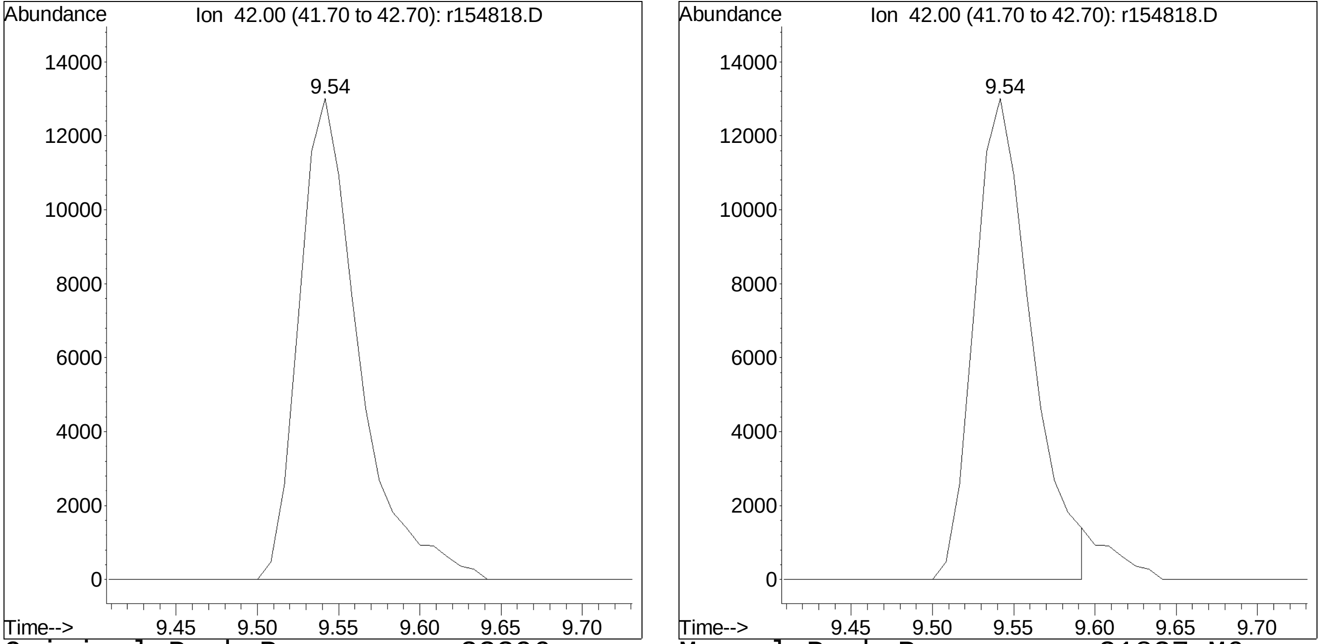
Original Peak Response = 22159   Manual Peak Response = 20184 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154818.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:07 PM        Instrument  :
Sample      : ITO15-SIMSTD1.0            Quant Date  : 12/23/2017  9:24 am
```

Compound #40: Tetrahydrofuran



Original Peak Response = 33396 Manual Peak Response = 31837 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154819.D
  Acq On    : 22 Dec 2017   6:44 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD5.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:41:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   251024    10.000 ppbV     0.00
     Standard Area  =       254284                 Recovery   =   98.72%
    43) 1,4-difluorobenzene         11.15  114   586051    10.000 ppbV     0.00
     Standard Area  =       588274                 Recovery   =   99.62%
    67) chlorobenzene-D5            15.88   54   107927    10.000 ppbV     0.00
     Standard Area  =       108475                 Recovery   =   99.49%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.78   65   125206     9.919 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.19%
    69) toluene-D8                  14.01   98   557240    10.008 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.08%
    90) bromofluorobenzene          17.23   95   282574     9.712 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.12%

   Target Compounds                                                   Qvalue
     2) chlorodifluoromethane        3.75   51    132879      5.138 ppbV      99
     3) propylene                    3.78   41     94237M6    5.300 ppbV
     4) propane                      3.81   29    105084      5.186 ppbV      99
     5) dichlorodifluoromethane      3.85   85    145339      5.270 ppbV      99
     6) chloromethane                4.01   50     82078      5.183 ppbV     100
     7) Freon-114                    4.11   85    178051      5.142 ppbV      98
     8) methanol                     4.18   31    175494     26.247 ppbV      98
     9) vinyl chloride               4.23   62     76720      5.169 ppbV     100
    10) 1,3-butadiene                4.37   54     70881      5.159 ppbV     100
    11) butane                       4.43   43    133106      5.444 ppbV      99
    12) acetaldehyde                 4.13   29    205221     26.245 ppbV      98
    13) bromomethane                 4.65   94     65203      5.139 ppbV      97
    14) chloroethane                 4.83   64     38224      5.213 ppbV      98
    15) ethanol                      4.96   31    312887     26.176 ppbV     100
    16) dichlorofluoromethane        4.94   67    134413      5.220 ppbV      98
    17) vinyl bromide                5.20  106     71469      5.110 ppbV      99
    18) acrolein                     5.33   56     34148      5.048 ppbV      98
    19) acetone                      5.47   43    423977     26.248 ppbV      98
    20) acetonitrile                 5.19   41     70203      5.111 ppbV     100
    21) trichlorofluoromethane       5.66  101    111664      5.163 ppbV      97
    22) isopropyl alcohol            5.75   45    297518     13.039 ppbV     100
    23) acrylonitrile                5.98   53     66356      5.050 ppbV     100
    24) pentane                      6.05   43    156441      5.196 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154819.D
  Acq On    : 22 Dec 2017   6:44 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD5.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:41:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------------
    25) ethyl ether                    6.08   31    118652      5.099 ppbV      99
    26) 1,1-dichloroethene             6.36   61    100072      5.205 ppbV      96
    27) tertiary butyl alcohol         6.41   59    126611      5.057 ppbV      99
    28) methylene chloride             6.50   49    100471      5.159 ppbV      97
    29) 3-chloropropene                6.63   41    114657      5.106 ppbV      99
    30) carbon disulfide               6.79   76    260440      5.464 ppbV #    92
    31) Freon 113                      6.79  101    149384      5.786 ppbV      94
    32) trans-1,2-dichloroethene       7.55   61    141658      5.024 ppbV      98
    33) 1,1-dichloroethane             7.78   63    170509      5.038 ppbV     100
    34) MTBE                           7.84   73    235318      4.992 ppbV     100
    35) vinyl acetate                  7.97   43    258621      4.930 ppbV      99
    36) 2-butanone                     8.22   43    249050      5.020 ppbV      99
    37) cis-1,2-dichloroethene         8.72   61    122893      5.040 ppbV     100
    38) Ethyl Acetate                  9.01   61     34947      4.969 ppbV      92
    39) chloroform                     9.07   83    146958      5.143 ppbV      98
    40) Tetrahydrofuran                9.52   42    158301M6    5.010 ppbV
    41) 2,2-dichloropropane            9.08   77    118672      5.061 ppbV      99
    42) 1,2-dichloroethane             9.90   62     95418      5.068 ppbV      98
    44) hexane                         8.97   57    170016      5.030 ppbV      85
    45) diisopropyl ether              8.97   87     81426      5.022 ppbV      95
    46) tert-butyl ethyl ether         9.59   59    281776      5.040 ppbV      98
    48) 1,1,1-trichloroethane         10.19   97    126148      5.053 ppbV      99
    49) 1,1-dichloropropene           10.56   75    136525      5.017 ppbV      99
    50) benzene                       10.72   78    308149      5.056 ppbV     100
    51) thiophene                     10.87   84    139503      5.067 ppbV     100
    52) carbon tetrachloride          10.89  117    105756      4.875 ppbV      99
    53) cyclohexane                   11.03   56    182046      5.041 ppbV      99
    54) tert-amyl methyl ether        11.42   73    257360      4.934 ppbV     100
    55) dibromomethane                11.63   93     93023      5.071 ppbV      97
    56) 1,2-dichloropropane           11.67   63    117414      5.038 ppbV     100
    57) bromodichloromethane          11.90   83    158501      4.917 ppbV      97
    58) 1,4-dioxane                   11.95   88     75916      5.145 ppbV      97
    59) trichloroethene               11.95  130    116625      4.957 ppbV      96
    60) 2,2,4-trimethylpentane        12.00   57    572337      5.067 ppbV     100
    61) methyl methacrylate           12.20   41    123646      4.970 ppbV      99
    62) heptane                       12.32   43    267543      5.089 ppbV      98
    63) cis-1,3-dichloropropene       12.97   75    151986      4.936 ppbV      99
    64) 4-methyl-2-pentanone          13.01   43    307258      5.010 ppbV      99
    65) trans-1,3-dichloropropene     13.59   75    140974      4.927 ppbV      98
    66) 1,1,2-trichloroethane         13.79   97    115037      5.026 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154819.D
  Acq On    : 22 Dec 2017   6:44 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD5.0
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:41:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    68) toluene                     14.12   91    362637      5.074 ppbV      99
    70) 2-methylthiophene           14.19   97    272815      4.972 ppbV      99
    71) 1,3-dichloropropane         14.14   76    172343      5.061 ppbV      99
    72) 2-hexanone                  14.41   43    283442      4.910 ppbV      99
    73) 3-methylthiophene           14.38   97    208113      5.089 ppbV      97
    74) dibromochloromethane        14.57  129    148808      4.824 ppbV      99
    75) 1,2-dibromoethane           14.82  107    168207      5.009 ppbV      97
    76) butyl acetate               15.07   73     42213      4.846 ppbV      99
    77) octane                      15.16   85    131452      5.016 ppbV      98
    78) tetrachloroethene           15.28  166    136137      5.040 ppbV      95
    79) 1,1,1,2-tetrachloroethane   15.91  131    115834      4.988 ppbV      97
    80) chlorobenzene               15.93  112    279473      5.008 ppbV      97
    81) ethylbenzene                16.27   91    458785      5.010 ppbV      99
    82) 2-ethylthiophene            16.30   97    252310      4.995 ppbV      99
    83) m+p-xylene                  16.42   91    759457     10.200 ppbV      99
    84) bromoform                   16.48  173    131750      4.905 ppbV      95
    85) styrene                     16.74  104    308584      5.039 ppbV      98
    86) 1,1,2,2-tetrachloroethane   16.83   83    265548      5.054 ppbV      99
    87) o-xylene                    16.83   91    383330      5.113 ppbV      97
    88) 1,2,3-trichloropropane      16.95   75    213485      4.988 ppbV      99
    89) nonane                      17.03   43    393129      5.132 ppbV     100
    91) isopropylbenzene            17.35  105    502440      5.126 ppbV     100
    92) bromobenzene                17.43   77    274251      5.041 ppbV      98
    93) 2-chlorotoluene             17.75  126    140355      5.039 ppbV      98
    94) n-propylbenzene             17.78  120    160485      4.939 ppbV      91
    95) 4-chlorotoluene             17.81  126    139276      5.028 ppbV      98
    96) 4-ethyl toluene             17.90  105    570216      5.060 ppbV      97
    97) 1,3,5-trimethylbenzene      17.97  105    450190      4.956 ppbV     100
    98) tert-butylbenzene           18.31  119    462202      5.063 ppbV      98
    99) 1,2,4-trimethylbenzene      18.31  105    453249      5.063 ppbV      89
   100) decane                      18.39   57    394359      5.102 ppbV      99
   101) Benzyl Chloride             18.43   91    323365      4.653 ppbV      98
   102) 1,3-dichlorobenzene         18.44  146    289630      5.010 ppbV      97
   103) 1,4-dichlorobenzene         18.50  146    288281      4.899 ppbV      98
   104) sec-butylbenzene            18.53  105    644973      5.014 ppbV     100
   105) 1,2,3-trimethylbenzene      18.68  105    335209      5.043 ppbV      98
   106) p-isopropyltoluene          18.67  119    551186      4.925 ppbV      96
   107) 1,2-dichlorobenzene         18.79  146    269318      5.101 ppbV      95
   108) n-butylbenzene              19.03   91    525405      5.088 ppbV      97
   109) indan                       18.85  117    356845      4.975 ppbV      98
```

```
                         Quantitation Report    (QT Reviewed)

   Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
   Data File : r154819.D
   Acq On    : 22 Dec 2017   6:44 PM
   Operator  : AIRLAB15:RY
   Sample    : ITO15-SIMSTD5.0
   Misc      : WG1075924
   ALS Vial  : 0   Sample Multiplier: 1

   Quant Time: Dec 23 09:41:42 2017
   Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
   Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
   QLast Update : Sat Dec 23 09:22:54 2017
   Response via : Initial Calibration

   CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
   Sub List     : Default - All compounds listed

           Compound                   R.T. QIon  Response  Conc Units Dev(Min)
    ---------------------------------------------------------------------------
    110) indene                      18.93  115    165026      5.000 ppbV      95
    111) 1,2-dibromo-3-chloropr...   19.18   75    114777      4.852 ppbV      97
    112) undecane                    19.46   57    449094      5.067 ppbV      99
    113) 1,2,4,5-tetramethylben...   19.69  119    603146      4.985 ppbV      98
    114) dodecane                    20.42   57    459705      4.827 ppbV     100
    115) 1,2,4-trichlorobenzene      20.37  180    205036      4.575 ppbV      99
    116) naphthalene                 20.48  128    584834      4.614 ppbV     100
    117) 1,2,3-trichlorobenzene      20.74  180    196538      4.698 ppbV      99
    118) benzothiophene              20.55  134    427304      4.687 ppbV     100
    119) hexachlorobutadiene         20.82  225    173918      4.840 ppbV      95
    120) 2-methylnaphthalene         21.63  142    108962      4.091 ppbV      98
    121) 1-methylnaphthalene         21.83  142    147355      4.335 ppbV      98
    ---------------------------------------------------------------------------

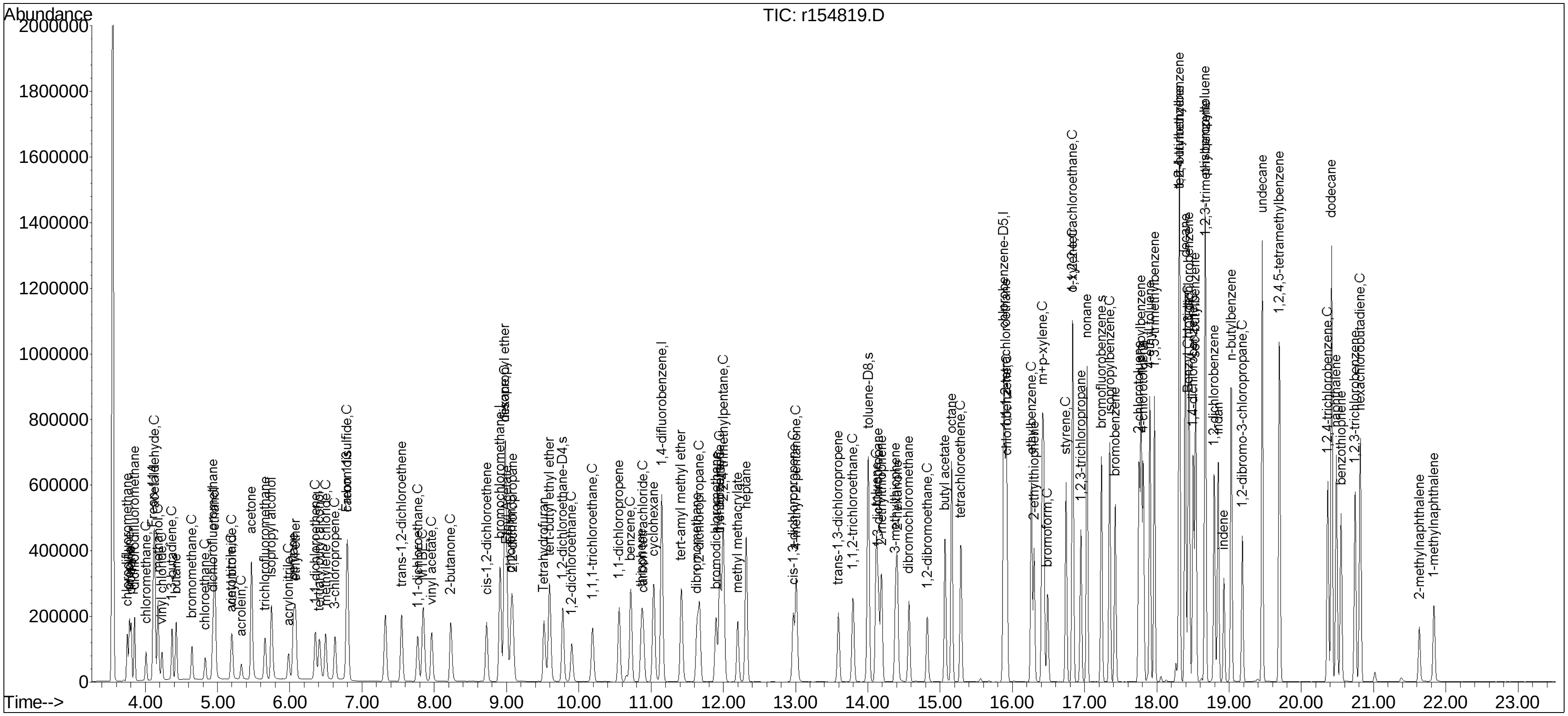
    (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154819.D
Acq On    : 22 Dec 2017   6:44 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD5.0
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:41:42 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

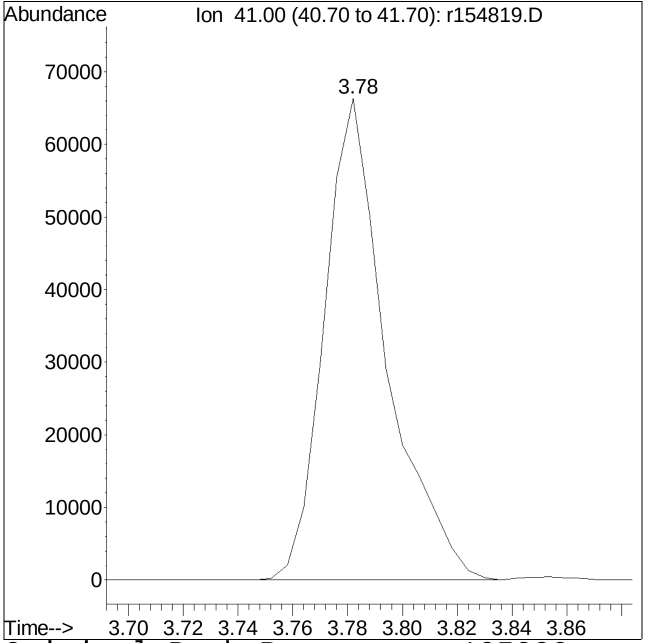
Sub List     : Default - All compounds listed7\171222T_ICAL\r154820.D
```



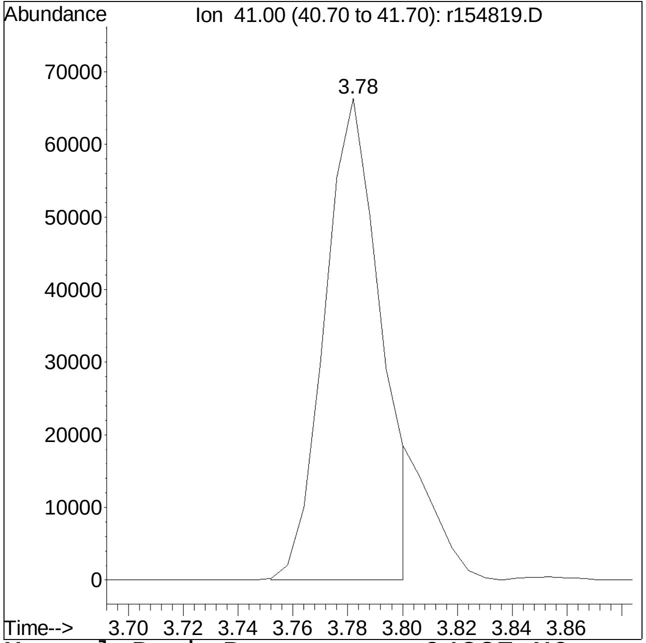
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154819.D                   Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:44 PM         Instrument  :
Sample      : ITO15-SIMSTD5.0             Quant Date  : 12/23/2017  9:24 am
```

Compound #3: propylene



Original Peak Response = 105090



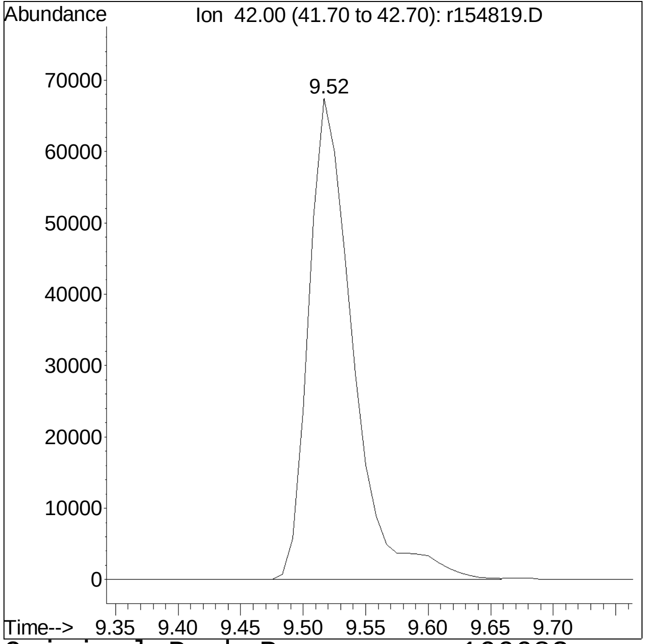
Manual Peak Response = 94237 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

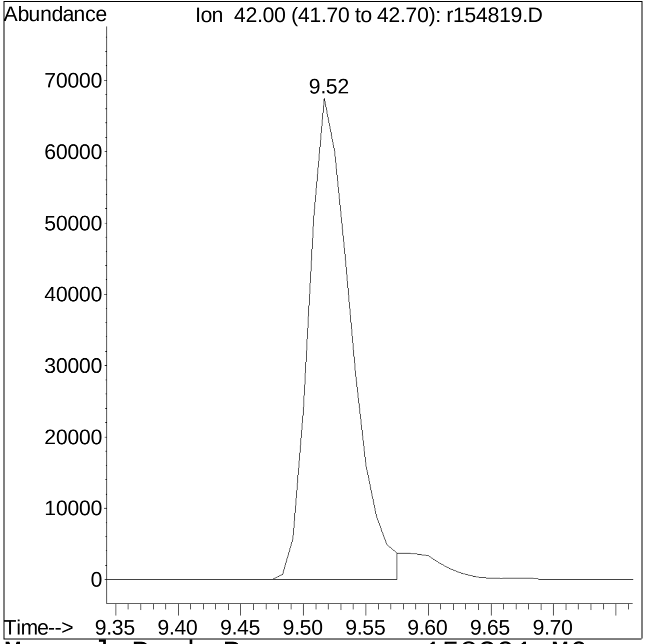
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154819.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:44 PM       Instrument   :
Sample      : ITO15-SIMSTD5.0           Quant Date   : 12/23/2017  9:24 am
```

Compound #40: Tetrahydrofuran



Original Peak Response = 166683



Manual Peak Response = 158301 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154820.D
  Acq On    : 22 Dec 2017   7:25 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:21:55 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:16:52 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

         Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.92   49   254284    10.000 ppbV   #-0.05
     Standard Area  =       254284               Recovery   =  100.00%
    43) 1,4-difluorobenzene         11.15  114   588274    10.000 ppbV    -0.05
     Standard Area  =       588274               Recovery   =  100.00%
    67) chlorobenzene-D5            15.88   54   108475    10.000 ppbV    -0.03
     Standard Area  =       108475               Recovery   =  100.00%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.78   65   126702    10.149 ppbV   -0.05
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.49%
    69) toluene-D8                  14.01   98   559604    13.350 ppbV   -0.04
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  133.50%#
    90) bromofluorobenzene          17.23   95   292420    13.376 ppbV   -0.03
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  133.76%#

   Target Compounds                                                  Qvalue
     2) chlorodifluoromethane        3.75   51    261969      9.815 ppbV      97
     3) propylene                    3.78   41    180125M6    9.825 ppbV
     4) propane                      3.81   29    205281      7.894 ppbV #    88
     5) dichlorodifluoromethane      3.85   85    279348      9.874 ppbV      98
     6) chloromethane                4.01   50    160406      9.244 ppbV      97
     7) Freon-114                    4.11   85    350787      9.460 ppbV      94
     8) methanol                     4.18   31    338657     33.712 ppbV      97
     9) vinyl chloride               4.23   62    150346      7.841 ppbV      96
    10) 1,3-butadiene                4.37   54    139180      8.027 ppbV      87
    11) butane                       4.43   43    247660      8.606 ppbV      96
    12) acetaldehyde                 4.13   29    396043     33.202 ppbV #    85
    13) bromomethane                 4.65   94    128524      8.909 ppbV      99
    14) chloroethane                 4.83   64     74282      7.660 ppbV      99
    15) ethanol                      4.96   31    605411     34.331 ppbV #    78
    16) dichlorofluoromethane        4.94   67    260816      8.687 ppbV      98
    17) vinyl bromide                5.20  106    141678     10.947 ppbV      97
    18) acrolein                     5.33   56     68531      7.763 ppbV      96
    19) acetone                      5.47   43    818119     38.451 ppbV      94
    20) acetonitrile                 5.19   41    139148      7.578 ppbV      98
    21) trichlorofluoromethane       5.66  101    219107     10.527 ppbV      98
    22) isopropyl alcohol            5.75   45    577838     19.399 ppbV #    97
    23) acrylonitrile                5.99   53    133105      8.052 ppbV      98
    24) pentane                      6.06   43    304979      8.435 ppbV #    96
```

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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154820.D
  Acq On    : 22 Dec 2017   7:25 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:21:55 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:16:52 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) ethyl ether                  6.08   31    235696      5.811 ppbV #    87
    26) 1,1-dichloroethene           6.36   61    194775      7.994 ppbV #    85
    27) tertiary butyl alcohol       6.41   59    253619M4    7.554 ppbV
    28) methylene chloride           6.50   49    197279      9.343 ppbV      98
    29) 3-chloropropene              6.63   41    227466      8.120 ppbV #    93
    30) carbon disulfide             6.80   76    482855      9.729 ppbV #    91
    31) Freon 113                    6.80  101    261523     10.799 ppbV      91
    32) trans-1,2-dichloroethene     7.55   61    285621     11.066 ppbV      89
    33) 1,1-dichloroethane           7.78   63    342873     11.509 ppbV      98
    34) MTBE                         7.85   73    477555     11.312 ppbV      96
    35) vinyl acetate                7.97   43    531394     11.596 ppbV      99
    36) 2-butanone                   8.23   43    502520     11.275 ppbV      98
    37) cis-1,2-dichloroethene       8.72   61    247011     11.030 ppbV      88
    38) Ethyl Acetate                9.01   61     71239     10.692 ppbV      87
    39) chloroform                   9.07   83    289468     10.411 ppbV      97
    40) Tetrahydrofuran              9.52   42    320054M4   11.811 ppbV
    41) 2,2-dichloropropane          9.09   77    237543     10.654 ppbV      95
    42) 1,2-dichloroethane           9.91   62    190716     11.152 ppbV      97
    44) hexane                       8.98   57    339299      8.378 ppbV #    71
    45) diisopropyl ether            8.98   87    162742      9.124 ppbV      96
    46) tert-butyl ethyl ether       9.60   59    561222      8.649 ppbV      97
    48) 1,1,1-trichloroethane       10.19   97    250612     10.598 ppbV      93
    49) 1,1-dichloropropene         10.56   75    273157      9.798 ppbV      96
    50) benzene                     10.73   78    611793      9.253 ppbV      96
    51) thiophene                   10.88   84    276385      8.387 ppbV      98
    52) carbon tetrachloride        10.90  117    217744      9.888 ppbV      97
    53) cyclohexane                 11.04   56    362493      8.499 ppbV      93
    54) tert-amyl methyl ether      11.43   73    523630      9.636 ppbV      98
    55) dibromomethane              11.64   93    184128     10.234 ppbV      96
    56) 1,2-dichloropropane         11.68   63    233932      9.939 ppbV      96
    57) bromodichloromethane        11.90   83    323545      9.030 ppbV #    99
    58) 1,4-dioxane                 11.95   88    148103      9.768 ppbV      94
    59) trichloroethene             11.95  130    236150     10.892 ppbV      99
    60) 2,2,4-trimethylpentane      12.00   57   1133718      8.724 ppbV #    94
    61) methyl methacrylate         12.20   41    249707      9.083 ppbV      96
    62) heptane                     12.32   43    527755     10.099 ppbV      94
    63) cis-1,3-dichloropropene     12.97   75    309077      9.686 ppbV      97
    64) 4-methyl-2-pentanone        13.01   43    615556     10.116 ppbV      94
    65) trans-1,3-dichloropropene   13.60   75    287203      9.757 ppbV      97
    66) 1,1,2-trichloroethane       13.80   97    229758     11.165 ppbV      88
```

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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154820.D
  Acq On    : 22 Dec 2017   7:25 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:21:55 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:16:52 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    68) toluene                     14.12   91    718375     12.447 ppbV      98
    70) 2-methylthiophene           14.19   97    551471     12.031 ppbV      96
    71) 1,3-dichloropropane         14.15   76    342254     11.594 ppbV      97
    72) 2-hexanone                  14.41   43    580150     12.206 ppbV      92
    73) 3-methylthiophene           14.38   97    411032     11.859 ppbV      96
    74) dibromochloromethane        14.57  129    310049     12.776 ppbV      98
    75) 1,2-dibromoethane           14.82  107    337502     12.987 ppbV      96
    76) butyl acetate               15.07   73     87557     12.604 ppbV      94
    77) octane                      15.16   85    263392     11.318 ppbV      94
    78) tetrachloroethene           15.29  166    271477     13.240 ppbV      97
    79) 1,1,1,2-tetrachloroethane   15.91  131    233390     12.569 ppbV      95
    80) chlorobenzene               15.93  112    560861     12.444 ppbV      94
    81) ethylbenzene                16.27   91    920336     12.952 ppbV      98
    82) 2-ethylthiophene            16.30   97    507737     12.409 ppbV      95
    83) m+p-xylene                  16.43   91   1496731     25.864 ppbV      99
    84) bromoform                   16.49  173    269992     13.279 ppbV      97
    85) styrene                     16.74  104    615503     13.466 ppbV      95
    86) 1,1,2,2-tetrachloroethane   16.83   83    528115     11.703 ppbV      98
    87) o-xylene                    16.84   91    753572     12.964 ppbV      99
    88) 1,2,3-trichloropropane      16.95   75    430134     12.306 ppbV      96
    89) nonane                      17.03   43    769936     12.616 ppbV      92
    91) isopropylbenzene            17.35  105    985193     13.295 ppbV      99
    92) bromobenzene                17.43   77    546832     11.789 ppbV #    84
    93) 2-chlorotoluene             17.75  126    279937M3   13.777 ppbV
    94) n-propylbenzene             17.78  120    326557     13.251 ppbV      89
    95) 4-chlorotoluene             17.81  126    278400     13.734 ppbV      95
    96) 4-ethyl toluene             17.90  105   1132544     13.563 ppbV      98
    97) 1,3,5-trimethylbenzene      17.97  105    912981     13.719 ppbV      97
    98) tert-butylbenzene           18.31  119    917494     13.220 ppbV      96
    99) 1,2,4-trimethylbenzene      18.32  105    899703     13.451 ppbV      93
   100) decane                      18.39   57    776804     11.738 ppbV #    93
   101) Benzyl Chloride             18.43   91    698444     12.668 ppbV      97
   102) 1,3-dichlorobenzene         18.45  146    581061M3   13.685 ppbV
   103) 1,4-dichlorobenzene         18.50  146    591464     14.034 ppbV      92
   104) sec-butylbenzene            18.54  105   1292873     13.532 ppbV      99
   105) 1,2,3-trimethylbenzene      18.68  105    668035     12.706 ppbV      95
   106) p-isopropyltoluene          18.67  119   1124735     13.394 ppbV      96
   107) 1,2-dichlorobenzene         18.79  146    530606     13.707 ppbV      97
   108) n-butylbenzene              19.03   91   1037954     13.495 ppbV     100
   109) indan                       18.85  117    720948     12.828 ppbV     100
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154820.D
  Acq On    : 22 Dec 2017   7:25 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:21:55 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:16:52 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   110) indene                       18.93  115    331744     12.822 ppbV      94
   111) 1,2-dibromo-3-chloropr...    19.18   75    237743     12.476 ppbV      88
   112) undecane                     19.46   57    890785     12.068 ppbV #    94
   113) 1,2,4,5-tetramethylben...    19.69  119   1215983     13.017 ppbV      95
   114) dodecane                     20.42   57    957208     13.021 ppbV      94
   115) 1,2,4-trichlorobenzene       20.37  180    450402     14.928 ppbV      97
   116) naphthalene                  20.48  128   1273935     15.181 ppbV      99
   117) 1,2,3-trichlorobenzene       20.74  180    420454     14.777 ppbV      97
   118) benzothiophene               20.55  134    916364     11.403 ppbV      98
   119) hexachlorobutadiene          20.81  225    361159     15.061 ppbV      93
   120) 2-methylnaphthalene          21.63  142    267668     10.728 ppbV      95
   121) 1-methylnaphthalene          21.83  142    341680     11.298 ppbV      98
   ---------------------------------------------------------------------------

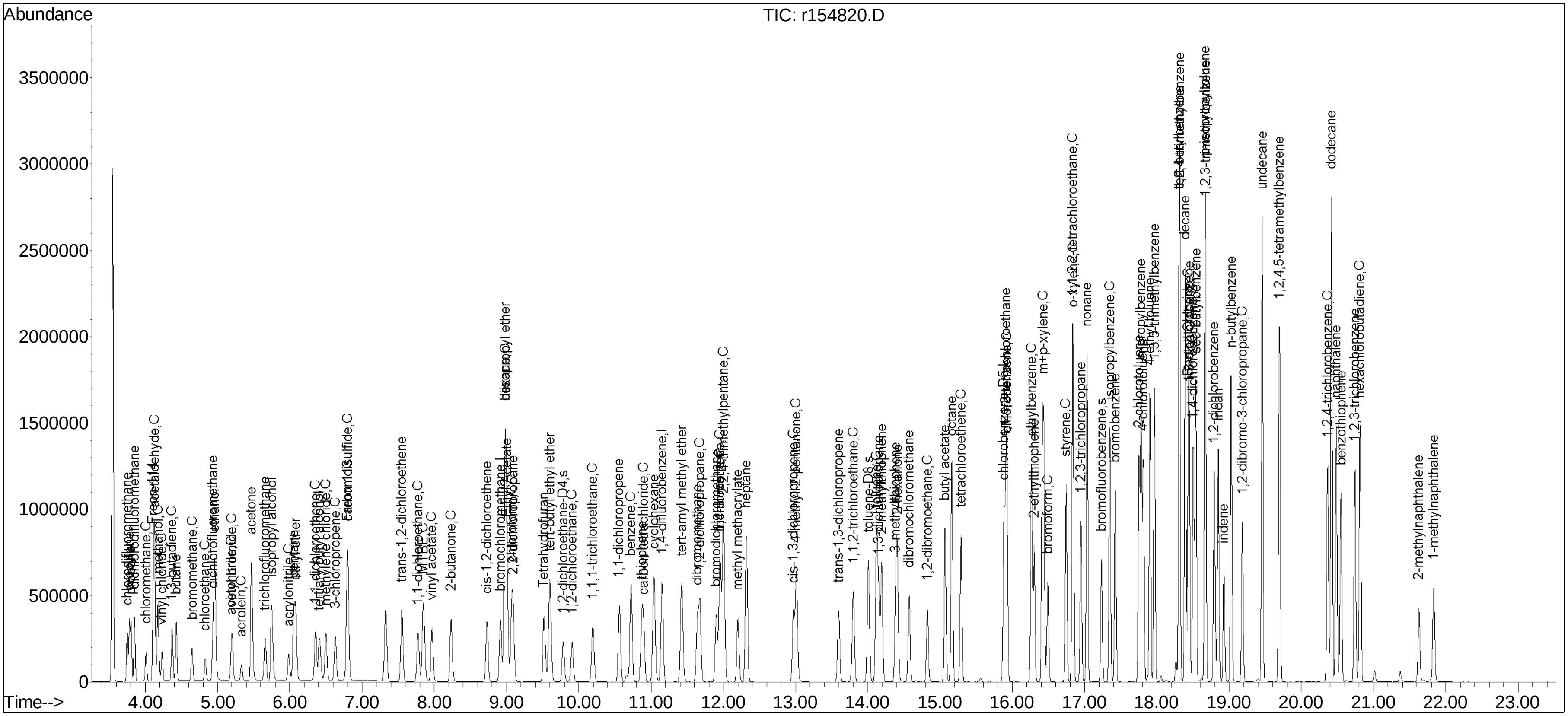
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154820.D
Acq On   : 22 Dec 2017   7:25 PM
Operator : AIRLAB15:RY
Sample   : ITO15-SIMSTD010
Misc   : WG1075924
ALS Vial : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:21:55 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 20 10:16:52 2017
Response via : Initial Calibration

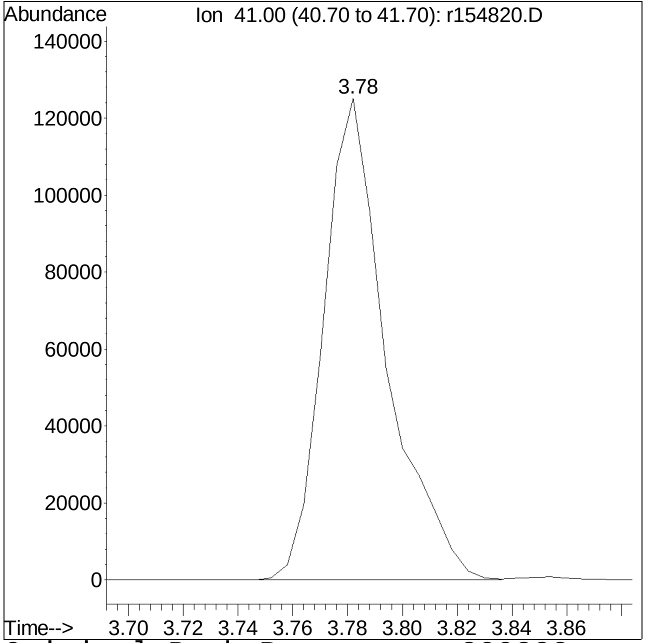
Sub List   : Default - All compounds listed7\171222T_ICAL\r154820.D



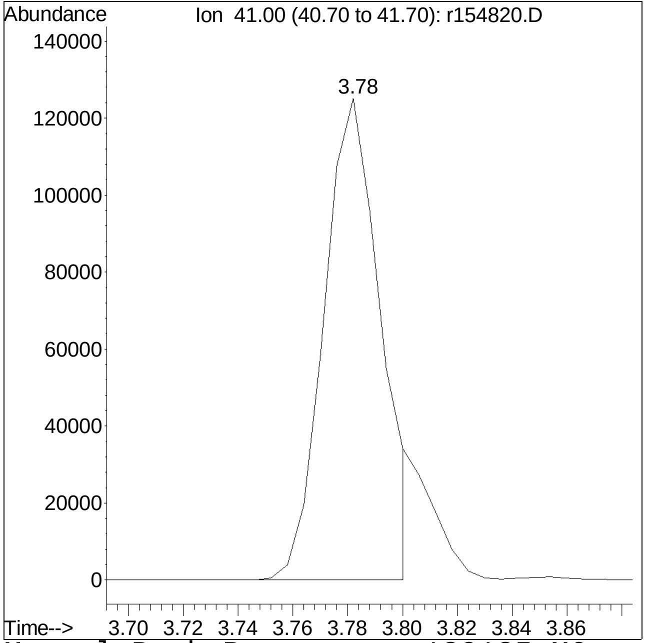
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154820.D                   Operator   : AIRLAB15:RY
Date Inj'd  : 12/22/2017  7:25 PM         Instrument :
Sample      : ITO15-SIMSTD010             Quant Date : 12/23/2017  9:20 am
```

Compound #3: propylene



Original Peak Response = 200322



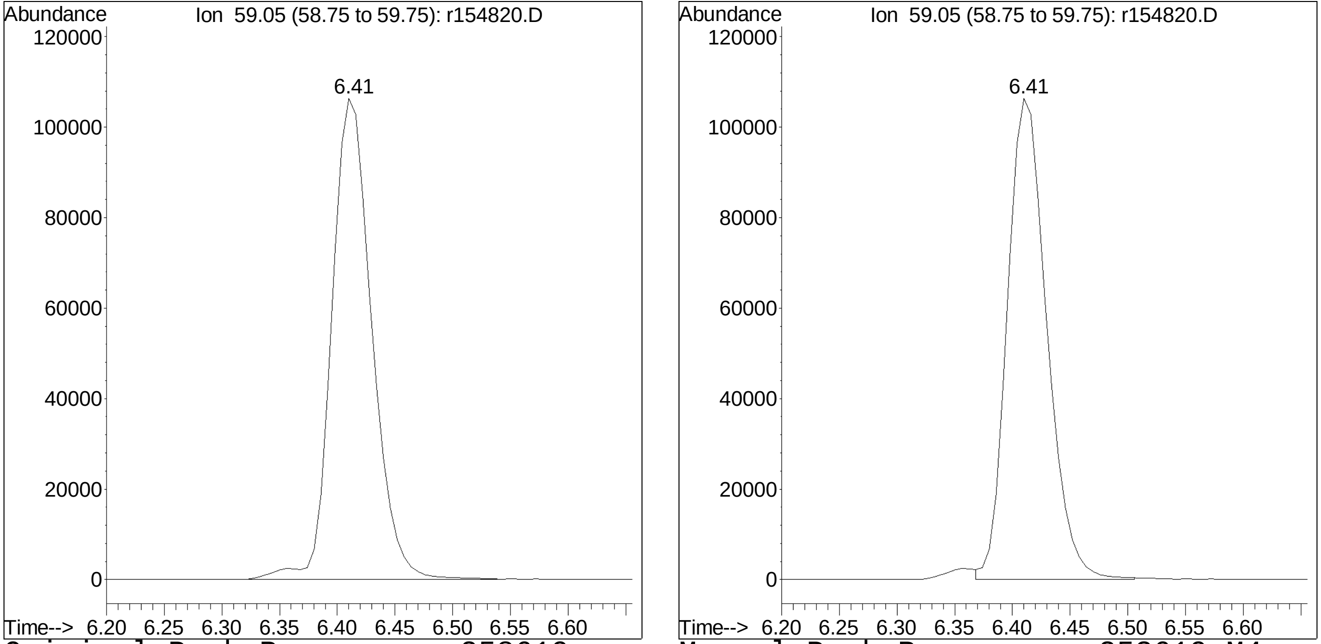
Manual Peak Response = 180125 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154820.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  7:25 PM       Instrument   :
Sample      : ITO15-SIMSTD010           Quant Date   : 12/23/2017  9:20 am
```

Compound #27: tertiary butyl alcohol

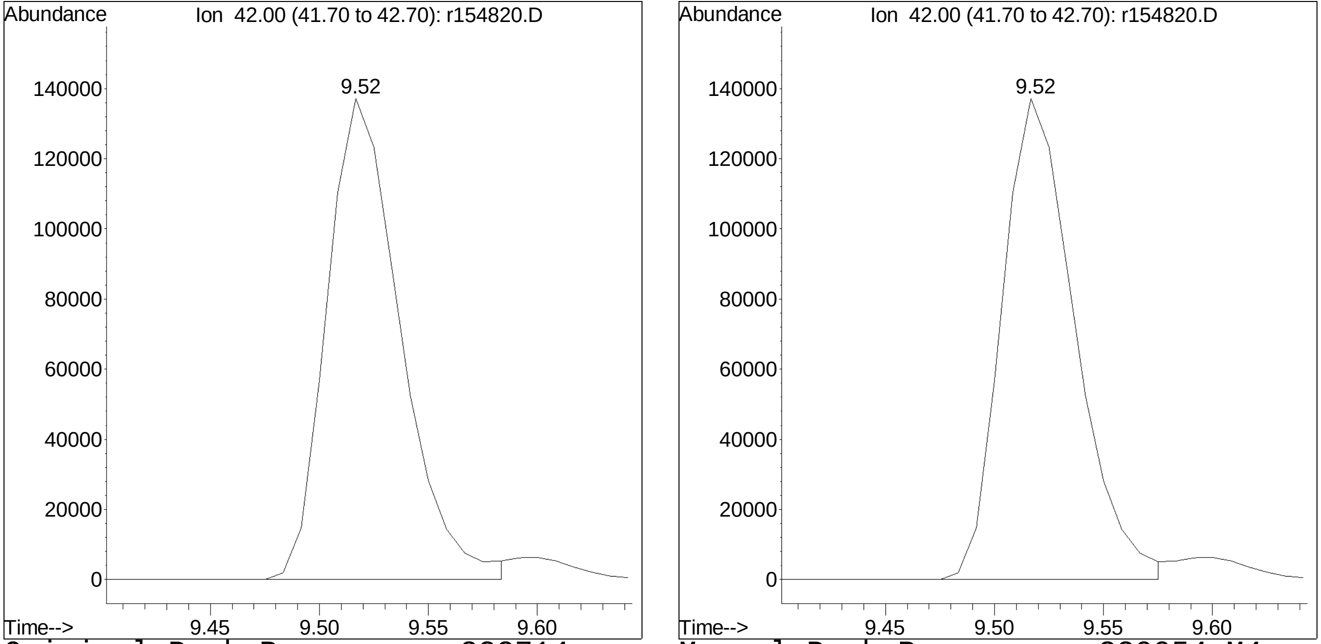


```
Original Peak Response = 258619       Manual Peak Response = 253619 M4
M4 = Poor automated baseline construction.
```

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154820.D                 Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  7:25 PM       Instrument  :
Sample      : ITO15-SIMSTD010           Quant Date  : 12/23/2017  9:20 am
```

Compound #40: Tetrahydrofuran



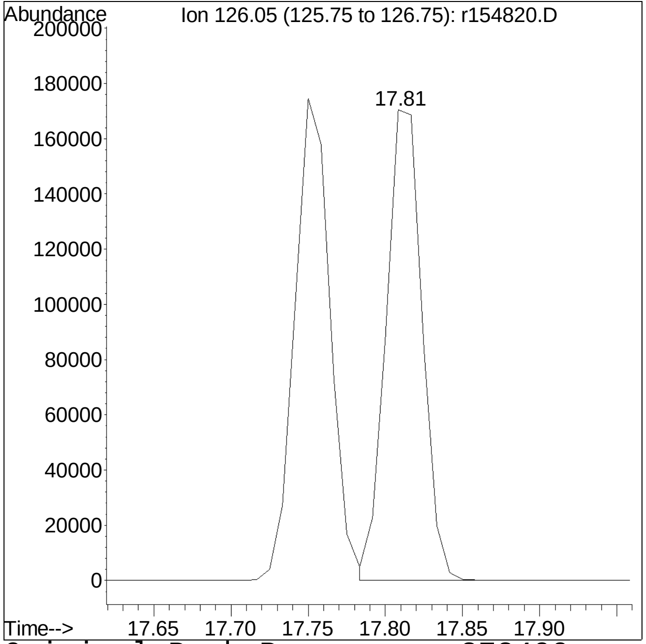
Original Peak Response = 322714   Manual Peak Response = 320054 M4

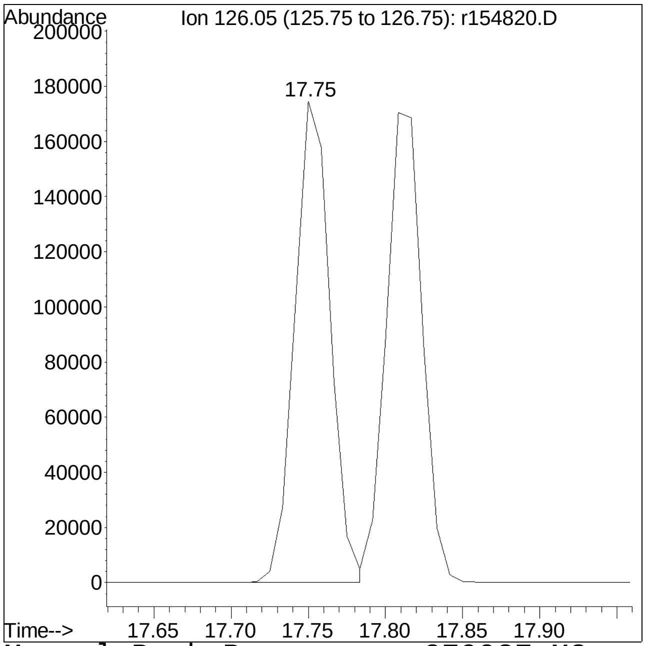
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154820.D                 Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  7:25 PM       Instrument  :
Sample      : ITO15-SIMSTD010           Quant Date  : 12/23/2017  9:20 am
```

Compound #93: 2-chlorotoluene





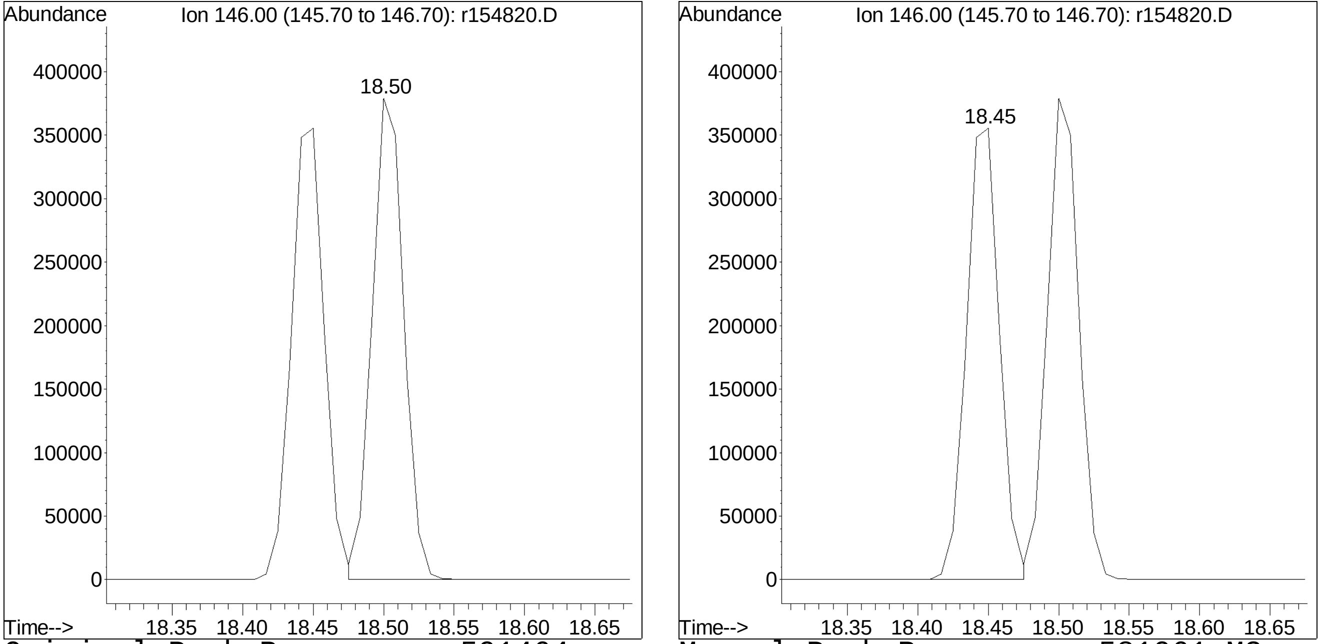
Original Peak Response = 278400   Manual Peak Response = 279937 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154820.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  7:25 PM       Instrument   :
Sample      : ITO15-SIMSTD010           Quant Date   : 12/23/2017  9:20 am
```

Compound #102: 1,3-dichlorobenzene



```
Original Peak Response = 591464       Manual Peak Response = 581061 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as
1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks
not being split.
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154821.D
  Acq On    : 22 Dec 2017   8:02 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD020
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:42:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane            8.92   49   255834    10.000 ppbV     0.00
     Standard Area  =       254284                 Recovery   =  100.61%
    43) 1,4-difluorobenzene          11.15  114   596308    10.000 ppbV     0.00
     Standard Area  =       588274                 Recovery   =  101.37%
    67) chlorobenzene-D5             15.88   54   106510    10.000 ppbV     0.00
     Standard Area  =       108475                 Recovery   =   98.19%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4         9.78   65   122163     9.512 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   95.12%
    69) toluene-D8                   14.01   98   538346     9.798 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.98%
    90) bromofluorobenzene           17.23   95   321990    11.214 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  112.14%

   Target Compounds                                                   Qvalue
     2) chlorodifluoromethane         3.75   51    482792     18.318 ppbV      99
     3) propylene                     3.78   41    321220M6   17.725 ppbV
     4) propane                       3.81   29    377026     18.255 ppbV      99
     5) dichlorodifluoromethane       3.85   85    511309     18.193 ppbV      99
     6) chloromethane                 4.01   50    288609     17.883 ppbV      99
     7) Freon-114                     4.11   85    634459     17.977 ppbV      99
     8) methanol                      4.18   31    596722     87.567 ppbV     100
     9) vinyl chloride                4.23   62    273668     18.092 ppbV      99
    10) 1,3-butadiene                 4.38   54    254988     18.210 ppbV      99
    11) butane                        4.43   43    470778     18.894 ppbV      99
    12) acetaldehyde                  4.13   29    792617     99.461 ppbV      97
    13) bromomethane                  4.65   94    233495     18.057 ppbV     100
    14) chloroethane                  4.83   64    135449     18.124 ppbV      97
    15) ethanol                       4.96   31   1094774     89.868 ppbV      99
    16) dichlorofluoromethane         4.94   67    466665     17.784 ppbV      98
    17) vinyl bromide                 5.20  106    257929     18.095 ppbV      99
    18) acrolein                      5.33   56    128978     18.706 ppbV      96
    19) acetone                       5.47   43   1542228     93.683 ppbV      98
    20) acetonitrile                  5.19   41    246993     17.643 ppbV     100
    21) trichlorofluoromethane        5.66  101    390342     17.707 ppbV      98
    22) isopropyl alcohol             5.75   45   1096236     47.141 ppbV     100
    23) acrylonitrile                 5.99   53    246231     18.387 ppbV      99
    24) pentane                       6.06   43    545459     17.777 ppbV      99
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154821.D
  Acq On    : 22 Dec 2017   8:02 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD020
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:42:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    25) ethyl ether                   6.08   31    426777     17.997 ppbV      98
    26) 1,1-dichloroethene            6.36   61    355309     18.132 ppbV      99
    27) tertiary butyl alcohol        6.41   59    464211     18.193 ppbV      97
    28) methylene chloride            6.50   49    356765     17.975 ppbV      99
    29) 3-chloropropene               6.63   41    409426     17.890 ppbV      99
    30) carbon disulfide              6.80   76    887488     18.269 ppbV      98
    31) Freon 113                     6.80  101    471869     17.934 ppbV      99
    32) trans-1,2-dichloroethene      7.55   61    512972     17.851 ppbV      98
    33) 1,1-dichloroethane            7.78   63    618578     17.932 ppbV     100
    34) MTBE                          7.84   73    878833     18.291 ppbV      99
    35) vinyl acetate                 7.97   43    971248     18.167 ppbV     100
    36) 2-butanone                    8.22   43    902738     17.855 ppbV      99
    37) cis-1,2-dichloroethene        8.72   61    447485     18.006 ppbV     100
    38) Ethyl Acetate                 9.01   61    128306     17.902 ppbV      92
    39) chloroform                    9.07   83    527895     18.126 ppbV      97
    40) Tetrahydrofuran               9.51   42    580043     18.013 ppbV      98
    41) 2,2-dichloropropane           9.09   77    438790     18.360 ppbV      97
    42) 1,2-dichloroethane            9.91   62    338102     17.621 ppbV      98
    44) hexane                        8.98   57    613999     17.852 ppbV      94
    45) diisopropyl ether             8.98   87    297190     18.015 ppbV      98
    46) tert-butyl ethyl ether        9.60   59   1021664     17.959 ppbV     100
    48) 1,1,1-trichloroethane        10.19   97    458302     18.041 ppbV      97
    49) 1,1-dichloropropene          10.56   75    507113     18.315 ppbV      96
    50) benzene                      10.73   78   1127452     18.180 ppbV      99
    51) thiophene                    10.88   84    563257     20.105 ppbV      97
    52) carbon tetrachloride         10.89  117    400510     18.146 ppbV      98
    53) cyclohexane                  11.04   56    665351     18.108 ppbV      99
    54) tert-amyl methyl ether       11.42   73    970279     18.280 ppbV      99
    55) dibromomethane               11.64   93    332496     17.815 ppbV      99
    56) 1,2-dichloropropane          11.68   63    422758     17.828 ppbV      99
    57) bromodichloromethane         11.90   83    593458     18.095 ppbV      99
    58) 1,4-dioxane                  11.94   88    277126     18.460 ppbV      97
    59) trichloroethene              11.95  130    423170     17.678 ppbV      95
    60) 2,2,4-trimethylpentane       12.00   57   2056260     17.893 ppbV      99
    61) methyl methacrylate          12.20   41    511596     20.212 ppbV      98
    62) heptane                      12.32   43    953741     17.828 ppbV     100
    63) cis-1,3-dichloropropene      12.97   75    576472     18.400 ppbV      99
    64) 4-methyl-2-pentanone         13.01   43   1106284     17.730 ppbV      99
    65) trans-1,3-dichloropropene    13.60   75    537660     18.468 ppbV      97
    66) 1,1,2-trichloroethane        13.80   97    420870     18.071 ppbV      99
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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154821.D
  Acq On    : 22 Dec 2017   8:02 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD020
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:42:42 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    68) toluene                     14.12   91   1296591     18.382 ppbV      98
    70) 2-methylthiophene           14.19   97   1128082     20.833 ppbV      99
    71) 1,3-dichloropropane         14.15   76    628315     18.697 ppbV      98
    72) 2-hexanone                  14.41   43   1034933     18.168 ppbV      97
    73) 3-methylthiophene           14.38   97    856160     21.214 ppbV      97
    74) dibromochloromethane        14.57  129    570174     18.729 ppbV      99
    75) 1,2-dibromoethane           14.82  107    616514     18.604 ppbV      99
    76) butyl acetate               15.07   73    164145     19.093 ppbV      94
    77) octane                      15.17   85    481885     18.633 ppbV      98
    78) tetrachloroethene           15.29  166    494148     18.538 ppbV      98
    79) 1,1,1,2-tetrachloroethane   15.91  131    430605     18.790 ppbV      93
    80) chlorobenzene               15.93  112   1020325     18.528 ppbV      97
    81) ethylbenzene                16.27   91   1662332     18.395 ppbV      99
    82) 2-ethylthiophene            16.30   97   1021778     20.495 ppbV      98
    83) m+p-xylene                  16.43   91   2678189     36.447 ppbV     100
    84) bromoform                   16.49  173    521464     19.670 ppbV      97
    85) styrene                     16.74  104   1134756     18.776 ppbV      99
    86) 1,1,2,2-tetrachloroethane   16.83   83    954177     18.401 ppbV      98
    87) o-xylene                    16.84   91   1360712     18.390 ppbV      96
    88) 1,2,3-trichloropropane      16.95   75    783353     18.548 ppbV     100
    89) nonane                      17.03   43   1378415     18.233 ppbV      99
    91) isopropylbenzene            17.35  105   1813536     18.748 ppbV     100
    92) bromobenzene                17.43   77   1009635     18.804 ppbV      93
    93) 2-chlorotoluene             17.75  126    512664     18.651 ppbV      98
    94) n-propylbenzene             17.78  120    604069     18.839 ppbV      97
    95) 4-chlorotoluene             17.82  126    508371     18.597 ppbV      96
    96) 4-ethyl toluene             17.91  105   2041718     18.360 ppbV      99
    97) 1,3,5-trimethylbenzene      17.97  105   1631475     18.199 ppbV      98
    98) tert-butylbenzene           18.31  119   1640617     18.211 ppbV      97
    99) 1,2,4-trimethylbenzene      18.32  105   1591275     18.013 ppbV      98
   100) decane                      18.39   57   1387581     18.192 ppbV      99
   101) Benzyl Chloride             18.43   91   1334186     19.455 ppbV      98
   102) 1,3-dichlorobenzene         18.45  146   1070416     18.762 ppbV      97
   103) 1,4-dichlorobenzene         18.51  146   1082794     18.645 ppbV      97
   104) sec-butylbenzene            18.54  105   2356350     18.562 ppbV      99
   105) 1,2,3-trimethylbenzene      18.68  105   1289297     19.656 ppbV      99
   106) p-isopropyltoluene          18.67  119   1986581     17.989 ppbV      99
   107) 1,2-dichlorobenzene         18.79  146   1004828     19.287 ppbV      94
   108) n-butylbenzene              19.03   91   1847691     18.130 ppbV      98
   109) indan                       18.85  117   1414779     19.986 ppbV      99
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                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154821.D
Acq On    : 22 Dec 2017   8:02 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD020
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:42:42 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
 110) indene                        18.93  115    663799     20.379 ppbV      97
 111) 1,2-dibromo-3-chloropr...     19.18   75    439314     18.819 ppbV      95
 112) undecane                      19.46   57   1558565     17.819 ppbV      98
 113) 1,2,4,5-tetramethylben...     19.70  119   2245043     18.803 ppbV      96
 114) dodecane                      20.42   57   1481180     15.759 ppbV      98
 115) 1,2,4-trichlorobenzene        20.37  180    791288     17.893 ppbV     100
 116) naphthalene                   20.48  128   2223741     17.778 ppbV     100
 117) 1,2,3-trichlorobenzene        20.74  180    740587     17.939 ppbV      98
 118) benzothiophene                20.55  134   2420391     26.900 ppbV      99
 119) hexachlorobutadiene           20.81  225    612531     17.273 ppbV      98
 120) 2-methylnaphthalene           21.63  142    702207     26.718 ppbV      98
 121) 1-methylnaphthalene           21.82  142    807694     24.075 ppbV      98
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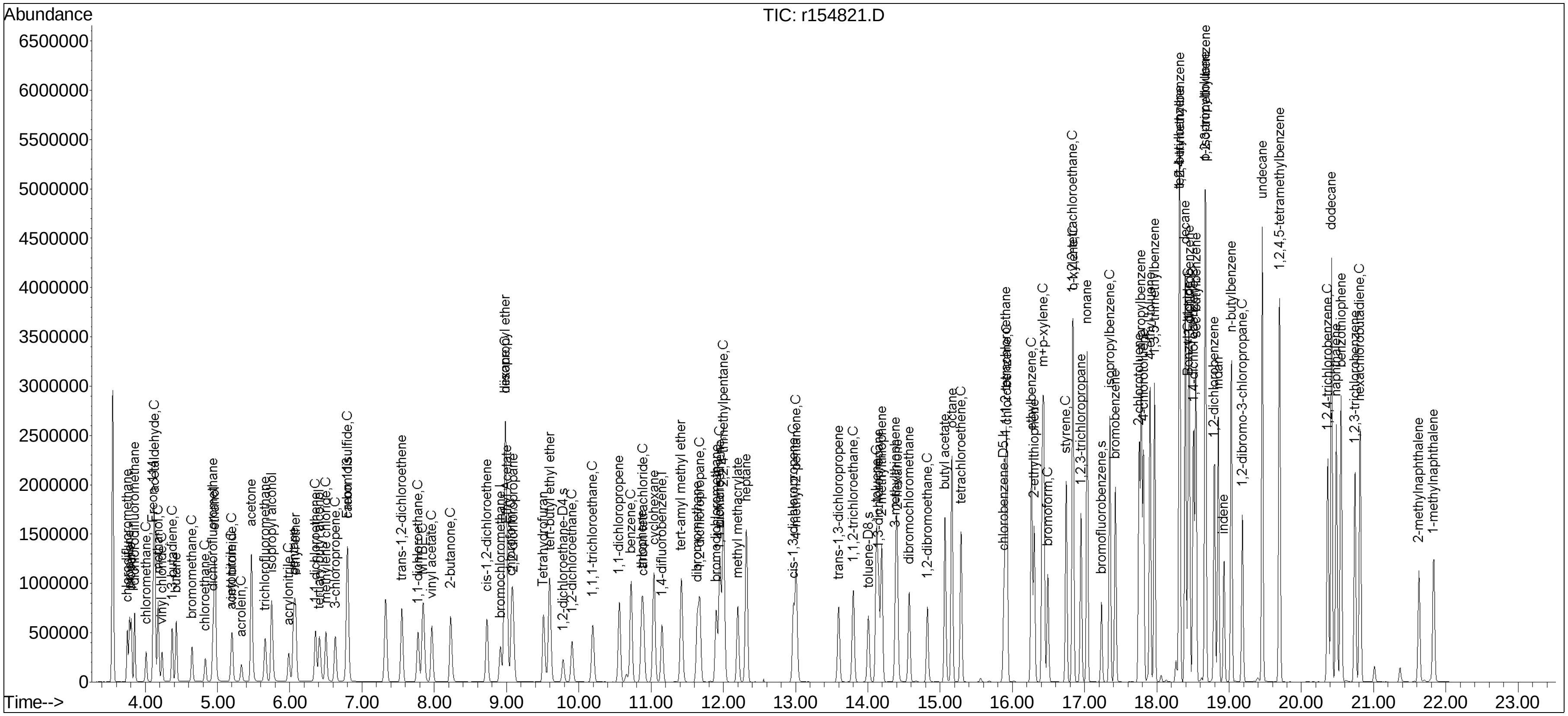
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154821.D
Acq On    : 22 Dec 2017   8:02 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD020
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:42:42 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

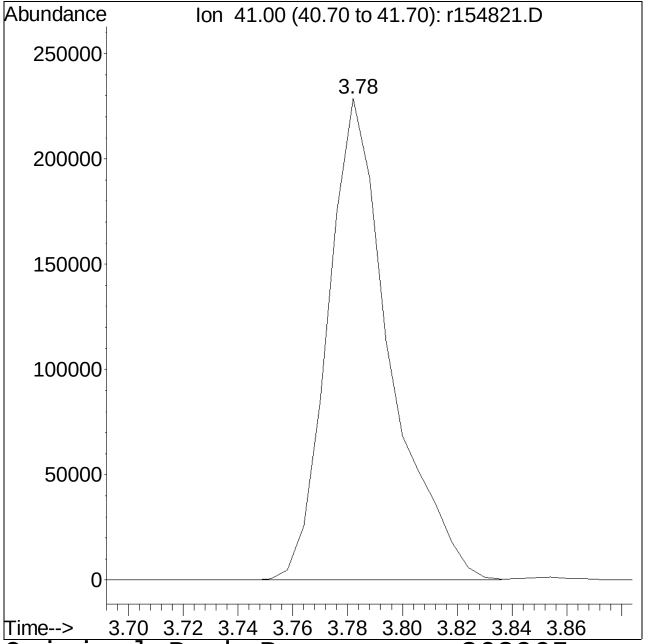
Sub List     : Default - All compounds listed7\171222T_ICAL\r154820.D
```

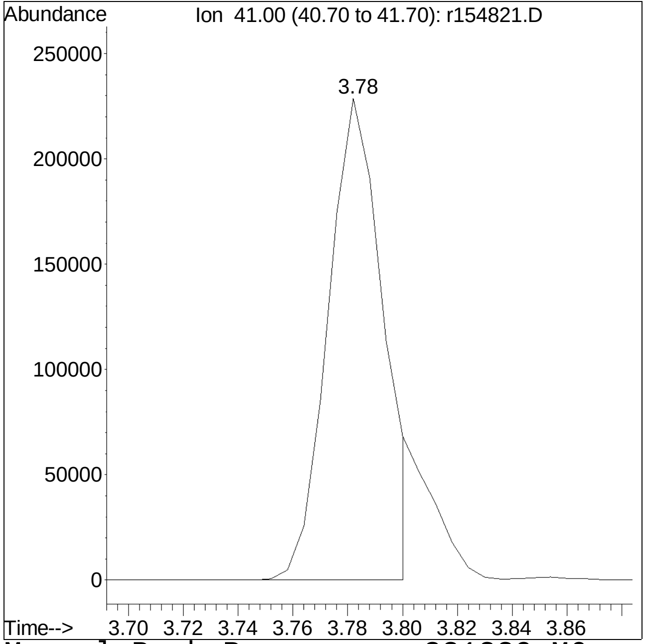


Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL171222.M
Data File : r154821.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 8:02 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 12/23/2017 9:24 am

Compound #3: propylene





Original Peak Response = 362065 Manual Peak Response = 321220 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154822.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:43:52 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.93   49   265546    10.000 ppbV     0.00
     Standard Area  =       254284                 Recovery   =  104.43%
    43) 1,4-difluorobenzene         11.16  114   601530    10.000 ppbV     0.00
     Standard Area  =       588274                 Recovery   =  102.25%
    67) chlorobenzene-D5            15.88   54   107806    10.000 ppbV     0.00
     Standard Area  =       108475                 Recovery   =   99.38%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.79   65   119183     9.199 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   91.99%
    69) toluene-D8                  14.01   98   549283     9.876 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   98.76%
    90) bromofluorobenzene          17.23   95   307215    10.571 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  105.71%

   Target Compounds                                                   Qvalue
     2) chlorodifluoromethane        3.75   51   1160749     42.429 ppbV      99
     3) propylene                    3.78   41    745707M6   39.644 ppbV
     4) propane                      3.81   29    894963     41.748 ppbV      99
     5) dichlorodifluoromethane      3.85   85   1209334     41.455 ppbV      96
     6) chloromethane                4.01   50    682138     40.722 ppbV      98
     7) Freon-114                    4.11   85   1464751     39.985 ppbV      98
     8) methanol                     4.18   31   1444245    204.188 ppbV      99
     9) vinyl chloride               4.23   62    670509     42.706 ppbV      98
    10) 1,3-butadiene                4.38   54    618966     42.586 ppbV      98
    11) butane                       4.43   43   1016705     39.311 ppbV      98
    12) acetaldehyde                 4.13   29   1748734    211.413 ppbV      96
    13) bromomethane                 4.65   94    565529     42.136 ppbV      99
    14) chloroethane                 4.83   64    326906     42.142 ppbV      98
    15) ethanol                      4.97   31   2543968    201.192 ppbV      95
    16) dichlorofluoromethane        4.94   67   1083966     39.798 ppbV      99
    17) vinyl bromide                5.21  106    599895     40.546 ppbV      96
    18) acrolein                     5.33   56    320921     44.843 ppbV      97
    19) acetone                      5.47   43   3427405    200.585 ppbV      92
    20) acetonitrile                 5.20   41    577344     39.732 ppbV      99
    21) trichlorofluoromethane       5.66  101    913334     39.917 ppbV      99
    22) isopropyl alcohol            5.76   45   2490977    103.201 ppbV      99
    23) acrylonitrile                5.99   53    605084     43.531 ppbV      99
    24) pentane                      6.06   43   1236906     38.837 ppbV      98
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```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154822.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:43:52 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) ethyl ether                   6.08   31   1004737     40.821 ppbV      98
    26) 1,1-dichloroethene            6.36   61    849447     41.762 ppbV      98
    27) tertiary butyl alcohol        6.42   59   1128614     42.613 ppbV      96
    28) methylene chloride            6.51   49    834364     40.500 ppbV      97
    29) 3-chloropropene               6.64   41    951751     40.067 ppbV      98
    30) carbon disulfide              6.80   76   2041494     40.487 ppbV      96
    31) Freon 113                     6.80  101   1075666     39.386 ppbV      94
    32) trans-1,2-dichloroethene      7.56   61   1230023     41.238 ppbV      96
    33) 1,1-dichloroethane            7.78   63   1469902     41.052 ppbV      99
    34) MTBE                          7.85   73   2132262     42.756 ppbV      99
    35) vinyl acetate                 7.97   43   2373434     42.770 ppbV      99
    36) 2-butanone                    8.23   43   2167195     41.298 ppbV      97
    37) cis-1,2-dichloroethene        8.73   61   1063035     41.211 ppbV      99
    38) Ethyl Acetate                 9.01   61    311904     41.926 ppbV      98
    39) chloroform                    9.07   83   1274678     42.168 ppbV      96
    40) Tetrahydrofuran               9.51   42   1379422     41.272 ppbV      96
    41) 2,2-dichloropropane           9.09   77   1070756     43.165 ppbV      92
    42) 1,2-dichloroethane            9.91   62    809847     40.663 ppbV      98
    44) hexane                        8.98   57   1429720     41.209 ppbV      82
    45) diisopropyl ether             8.98   87    723415     43.472 ppbV      81
    46) tert-butyl ethyl ether        9.60   59   2454903     42.778 ppbV      99
    48) 1,1,1-trichloroethane        10.20   97   1092707     42.641 ppbV      99
    49) 1,1-dichloropropene          10.57   75   1237084     44.290 ppbV      97
    50) benzene                      10.73   78   2754306     44.028 ppbV     100
    51) thiophene                    10.88   84   1393498     49.308 ppbV      97
    52) carbon tetrachloride         10.90  117    975391     43.808 ppbV      96
    53) cyclohexane                  11.04   56   1616945     43.623 ppbV      97
    54) tert-amyl methyl ether       11.43   73   2398894     44.803 ppbV      97
    55) dibromomethane               11.64   93    799258     42.451 ppbV      99
    56) 1,2-dichloropropane          11.68   63    998743     41.753 ppbV      99
    57) bromodichloromethane         11.91   83   1451311     43.868 ppbV      99
    58) 1,4-dioxane                  11.94   88    675223     44.587 ppbV      95
    59) trichloroethene              11.96  130   1047954     43.399 ppbV      97
    60) 2,2,4-trimethylpentane       12.01   57   4843590     41.782 ppbV      99
    61) methyl methacrylate          12.20   41   1217294     47.675 ppbV      96
    62) heptane                      12.32   43   2220648     41.150 ppbV      98
    63) cis-1,3-dichloropropene      12.98   75   1423986     45.057 ppbV      97
    64) 4-methyl-2-pentanone         13.01   43   2574598     40.904 ppbV      97
    65) trans-1,3-dichloropropene    13.60   75   1340520     45.646 ppbV      95
    66) 1,1,2-trichloroethane        13.80   97   1013475     43.138 ppbV      96
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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154822.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:43:52 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    68) toluene                       14.13   91   3086018     43.225 ppbV      99
    70) 2-methylthiophene             14.19   97   2735604     49.913 ppbV      97
    71) 1,3-dichloropropane           14.16   76   1529000     44.952 ppbV      95
    72) 2-hexanone                    14.41   43   2401639     41.654 ppbV      94
    73) 3-methylthiophene             14.39   97   2035071     49.819 ppbV      97
    74) dibromochloromethane          14.57  129   1381968     44.849 ppbV      96
    75) 1,2-dibromoethane             14.82  107   1514629     45.156 ppbV      99
    76) butyl acetate                 15.07   73    412080     47.356 ppbV      79
    77) octane                        15.17   85   1181314     45.128 ppbV      88
    78) tetrachloroethene             15.29  166   1198289     44.414 ppbV      96
    79) 1,1,1,2-tetrachloroethane     15.91  131   1019632     43.959 ppbV      95
    80) chlorobenzene                 15.93  112   2467181     44.262 ppbV     100
    81) ethylbenzene                  16.27   91   3896409     42.600 ppbV      98
    82) 2-ethylthiophene              16.31   97   2447904     48.511 ppbV      96
    83) m+p-xylene                    16.43   91   6172146     82.987 ppbV      95
    84) bromoform                     16.49  173   1283514     47.834 ppbV      98
    85) styrene                       16.75  104   2752732     45.001 ppbV      99
    86) 1,1,2,2-tetrachloroethane     16.84   83   2231982     42.525 ppbV      99
    87) o-xylene                      16.84   91   3082106     41.154 ppbV      93
    88) 1,2,3-trichloropropane        16.95   75   1899669     44.439 ppbV      96
    89) nonane                        17.04   43   3069206     40.111 ppbV      93
    91) isopropylbenzene              17.35  105   4224584     43.147 ppbV      97
    92) bromobenzene                  17.43   77   2398855     44.140 ppbV      97
    93) 2-chlorotoluene               17.76  126   1245990     44.786 ppbV      97
    94) n-propylbenzene               17.78  120   1462491     45.063 ppbV      84
    95) 4-chlorotoluene               17.82  126   1269326     45.877 ppbV      82
    96) 4-ethyl toluene               17.91  105   4708490     41.832 ppbV      97
    97) 1,3,5-trimethylbenzene        17.98  105   3815614     42.052 ppbV     100
    98) tert-butylbenzene             18.32  119   3629930     39.809 ppbV      96
    99) 1,2,4-trimethylbenzene        18.32  105   3548361     39.684 ppbV      93
   100) decane                        18.40   57   3214838     41.642 ppbV      93
   101) Benzyl Chloride               18.44   91   3205660     46.182 ppbV      94
   102) 1,3-dichlorobenzene           18.45  146   2528566     43.786 ppbV      97
   103) 1,4-dichlorobenzene           18.51  146   2530337     43.046 ppbV      94
   104) sec-butylbenzene              18.54  105   5408325     42.091 ppbV      93
   105) 1,2,3-trimethylbenzene        18.68  105   2923833     44.039 ppbV      99
   106) p-isopropyltoluene            18.68  119   4365892     39.058 ppbV      96
   107) 1,2-dichlorobenzene           18.80  146   2419496     45.882 ppbV      99
   108) n-butylbenzene                19.03   91   4386551     42.524 ppbV      93
   109) indan                         18.85  117   3345749     46.696 ppbV      99
```

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154822.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:43:52 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   110) indene                       18.93  115   1672265     50.721 ppbV      96
   111) 1,2-dibromo-3-chloropr...    19.19   75   1105250     46.778 ppbV      96
   112) undecane                     19.47   57   3601079     40.677 ppbV      95
   113) 1,2,4,5-tetramethylben...    19.70  119   5206799     43.085 ppbV      97
   114) dodecane                     20.43   57   3531799     37.126 ppbV      94
   115) 1,2,4-trichlorobenzene       20.38  180   1966860     43.940 ppbV      98
   116) naphthalene                  20.49  128   5479592     43.280 ppbV      98
   117) 1,2,3-trichlorobenzene       20.75  180   1896505     45.386 ppbV      99
   118) benzothiophene               20.56  134   6073744     66.692 ppbV      98
   119) hexachlorobutadiene          20.82  225   1521395     42.387 ppbV      98
   120) 2-methylnaphthalene          21.63  142   1947255     73.200 ppbV      95
   121) 1-methylnaphthalene          21.84  142   2210440     65.095 ppbV      96
   ---------------------------------------------------------------------------

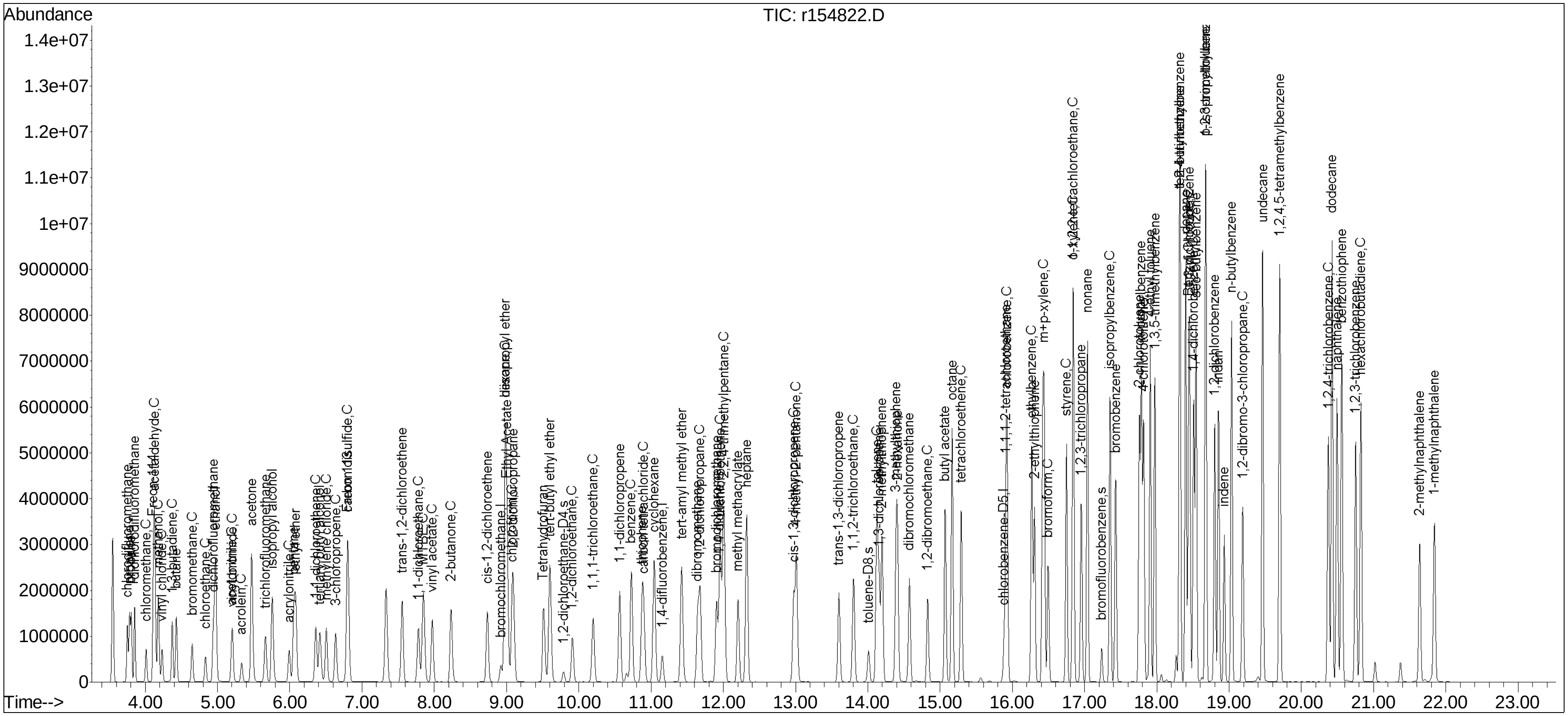
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154822.D
Acq On   : 22 Dec 2017   8:41 PM
Operator : AIRLAB15:RY
Sample   : ITO15-SIMSTD050
Misc   : WG1075924
ALS Vial : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:43:52 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

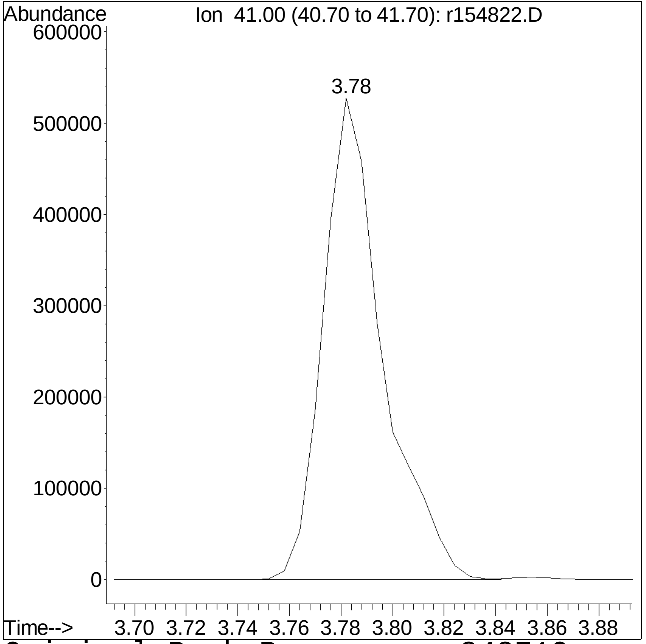
Sub List   : Default - All compounds listed7\171222T_ICAL\r154820.D

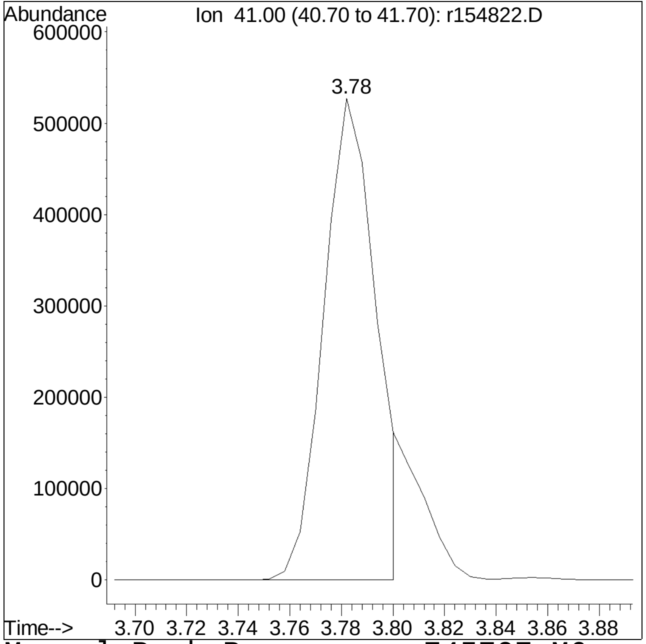


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154822.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  8:41 PM        Instrument  :
Sample      : ITO15-SIMSTD050            Quant Date  : 12/23/2017  9:24 am
```

Compound #3: propylene





Original Peak Response = 848719   Manual Peak Response = 745707 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154823.D
  Acq On    : 22 Dec 2017   9:22 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-LLSTD100
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:45:09 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

         Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.93   49   281099    10.000 ppbV     0.00
     Standard Area  =       254284                  Recovery   =  110.55%
    43) 1,4-difluorobenzene         11.16  114   611896    10.000 ppbV     0.00
     Standard Area  =       588274                  Recovery   =  104.02%
    67) chlorobenzene-D5            15.89   54   110114    10.000 ppbV   # 0.00
     Standard Area  =       108475                  Recovery   =  101.51%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4        9.79   65   118391     8.983 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   89.83%
    69) toluene-D8                  14.02   98   549249     9.669 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   96.69%
    90) bromofluorobenzene          17.24   95   316178    10.652 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  106.52%

   Target Compounds                                                 Qvalue
     2) chlorodifluoromethane        3.75   51   2251957     77.762 ppbV       99
     3) propylene                    3.78   41   1392704M6   69.943 ppbV
     4) propane                      3.81   29   1726143     76.066 ppbV       98
     5) dichlorodifluoromethane      3.85   85   2303127     74.582 ppbV       97
     6) chloromethane                4.02   50   1303769     73.526 ppbV       97
     7) Freon-114                    4.12   85   2587001     66.713 ppbV       94
     8) methanol                     4.18   31   2781210    371.453 ppbV       98
     9) vinyl chloride               4.23   62   1348333     81.127 ppbV       97
    10) 1,3-butadiene                4.38   54   1213548     78.875 ppbV       98
    11) butane                       4.43   43   1850541     67.593 ppbV #     96
    12) acetaldehyde                 4.14   29   2957351    337.746 ppbV       95
    13) bromomethane                 4.65   94   1132022     79.677 ppbV       97
    14) chloroethane                 4.84   64    661454     80.552 ppbV       99
    15) ethanol                      4.98   31   4747614    354.695 ppbV       92
    16) dichlorofluoromethane        4.95   67   2060531     71.467 ppbV       99
    17) vinyl bromide                5.21  106   1119671     71.490 ppbV       98
    18) acrolein                     5.34   56    655827     86.569 ppbV       97
    19) acetone                      5.48   43   6000409    331.737 ppbV #     85
    20) acetonitrile                 5.20   41   1079294     70.165 ppbV       99
    21) trichlorofluoromethane       5.67  101   1763268     72.798 ppbV       99
    22) isopropyl alcohol            5.77   45   4446082    174.009 ppbV #     97
    23) acrylonitrile                6.00   53   1204777     81.879 ppbV      100
    24) pentane                      6.06   43   2222098     65.910 ppbV       96
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154823.D
  Acq On    : 22 Dec 2017   9:22 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-LLSTD100
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:45:09 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) ethyl ether                    6.09   31   1922611     73.790 ppbV      94
    26) 1,1-dichloroethene             6.36   61   1654368     76.835 ppbV      98
    27) tertiary butyl alcohol         6.43   59   2246981     80.145 ppbV      93
    28) methylene chloride             6.51   49   1572343     72.098 ppbV      91
    29) 3-chloropropene                6.64   41   1778473     70.728 ppbV      96
    30) carbon disulfide               6.81   76   3557845     66.655 ppbV      97
    31) Freon 113                      6.81  101   1958044     67.729 ppbV      92
    32) trans-1,2-dichloroethene       7.56   61   2325717     73.659 ppbV      95
    33) 1,1-dichloroethane             7.78   63   2782014     73.398 ppbV      99
    34) MTBE                           7.85   73   4171502     79.019 ppbV      98
    35) vinyl acetate                  7.97   43   4469689     76.089 ppbV      96
    36) 2-butanone                     8.24   43   4067825     73.227 ppbV      95
    37) cis-1,2-dichloroethene         8.74   61   2020259     73.986 ppbV      97
    38) Ethyl Acetate                  9.03   61    586756     74.507 ppbV      62
    39) chloroform                     9.09   83   2447542     76.487 ppbV      98
    40) Tetrahydrofuran                9.52   42   2598471     73.444 ppbV      93
    41) 2,2-dichloropropane            9.10   77   2093136     79.710 ppbV      87
    42) 1,2-dichloroethane             9.92   62   1546706     73.364 ppbV      97
    44) hexane                         8.99   57   2662214     75.433 ppbV #    72
    45) diisopropyl ether              8.99   87   1389552     82.088 ppbV #    60
    46) tert-butyl ethyl ether         9.61   59   4688629     80.318 ppbV      95
    48) 1,1,1-trichloroethane         10.20   97   2108815     80.898 ppbV      97
    49) 1,1-dichloropropene           10.57   75   2386434     83.992 ppbV      95
    50) benzene                       10.73   78   5327549     83.719 ppbV      98
    51) thiophene                     10.88   84   2700681     93.942 ppbV      94
    52) carbon tetrachloride          10.91  117   1941003     85.700 ppbV      96
    53) cyclohexane                   11.05   56   3130286     83.021 ppbV      93
    54) tert-amyl methyl ether        11.43   73   4662868     85.611 ppbV      95
    55) dibromomethane                11.65   93   1502447     78.448 ppbV      97
    56) 1,2-dichloropropane           11.68   63   1862065     76.526 ppbV      98
    57) bromodichloromethane          11.92   83   2827320     84.012 ppbV     100
    58) 1,4-dioxane                   11.95   88   1301864     84.509 ppbV      93
    59) trichloroethene               11.97  130   2012298     81.923 ppbV      98
    60) 2,2,4-trimethylpentane        12.01   57   9027797     76.556 ppbV      97
    61) methyl methacrylate           12.21   41   2295946     88.396 ppbV      93
    62) heptane                       12.33   43   4000751     72.880 ppbV #    93
    63) cis-1,3-dichloropropene       12.98   75   2806240     87.289 ppbV      94
    64) 4-methyl-2-pentanone          13.02   43   4753678     74.244 ppbV      93
    65) trans-1,3-dichloropropene     13.61   75   2625548     87.889 ppbV      93
    66) 1,1,2-trichloroethane         13.81   97   1945437     81.405 ppbV      97
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154823.D
  Acq On    : 22 Dec 2017   9:22 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-LLSTD100
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:45:09 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    68) toluene                      14.13   91   5723447     78.486 ppbV      98
    70) 2-methylthiophene            14.20   97   5094804     91.011 ppbV      97
    71) 1,3-dichloropropane          14.16   76   2952459     84.981 ppbV      89
    72) 2-hexanone                   14.42   43   4307648     73.145 ppbV #    89
    73) 3-methylthiophene            14.39   97   3853704     92.361 ppbV      97
    74) dibromochloromethane         14.58  129   2622636     83.329 ppbV     100
    75) 1,2-dibromoethane            14.83  107   2851045     83.218 ppbV      95
    76) butyl acetate                15.07   73    800984     90.120 ppbV      69
    77) octane                       15.17   85   2273865     85.045 ppbV #    76
    78) tetrachloroethene            15.29  166   2268529     82.319 ppbV      98
    79) 1,1,1,2-tetrachloroethane    15.92  131   1884197     79.530 ppbV      96
    80) chlorobenzene                15.93  112   4382460     76.975 ppbV      98
    81) ethylbenzene                 16.27   91   7215471     77.233 ppbV      98
    82) 2-ethylthiophene             16.31   97   4526197     87.818 ppbV      93
    83) m+p-xylene                   16.44   91  10934946    143.943 ppbV      97
    84) bromoform                    16.50  173   2353042     85.855 ppbV      99
    85) styrene                      16.75  104   5044636     80.740 ppbV      96
    86) 1,1,2,2-tetrachloroethane    16.84   83   3746598     69.887 ppbV      99
    87) o-xylene                     16.85   91   5203853     68.028 ppbV      92
    88) 1,2,3-trichloropropane       16.96   75   3589432     82.207 ppbV      95
    89) nonane                       17.04   43   5198140     66.509 ppbV #    85
    91) isopropylbenzene             17.36  105   7533534     75.329 ppbV      93
    92) bromobenzene                 17.43   77   4488966     80.869 ppbV      94
    93) 2-chlorotoluene              17.76  126   2377647     83.671 ppbV      84
    94) n-propylbenzene              17.79  120   2716739     81.955 ppbV      71
    95) 4-chlorotoluene              17.82  126   2346743     83.039 ppbV      79
    96) 4-ethyl toluene              17.91  105   8272609     71.957 ppbV #    92
    97) 1,3,5-trimethylbenzene       17.98  105   6811892     73.501 ppbV      96
    98) tert-butylbenzene            18.32  119   5944552     63.827 ppbV      91
    99) 1,2,4-trimethylbenzene       18.32  105   5721187     62.643 ppbV      99
   100) decane                       18.40   57   5565082     70.574 ppbV #    86
   101) Benzyl Chloride              18.44   91   5852295     82.543 ppbV      92
   102) 1,3-dichlorobenzene          18.46  146   4453766     75.508 ppbV      95
   103) 1,4-dichlorobenzene          18.52  146   4557133     75.902 ppbV      93
   104) sec-butylbenzene             18.54  105   9230938     70.336 ppbV #    85
   105) 1,2,3-trimethylbenzene       18.68  105   4815734     71.015 ppbV      97
   106) p-isopropyltoluene           18.68  119   6969232     61.041 ppbV #    87
   107) 1,2-dichlorobenzene          18.80  146   4446658     82.556 ppbV      98
   108) n-butylbenzene               19.03   91   7680260     72.893 ppbV #    83
   109) indan                        18.86  117   5983873     81.765 ppbV      97
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154823.D
  Acq On    : 22 Dec 2017   9:22 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-LLSTD100
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 09:45:09 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 09:22:54 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   110) indene                        18.93  115   3234522     96.049 ppbV      96
   111) 1,2-dibromo-3-chloropr...     19.19   75   2104122     87.187 ppbV      94
   112) undecane                      19.47   57   6133397     67.829 ppbV #    90
   113) 1,2,4,5-tetramethylben...     19.70  119   8712201     70.581 ppbV      93
   114) dodecane                      20.43   57   6033239     62.091 ppbV      87
   115) 1,2,4-trichlorobenzene        20.37  180   3719619     81.355 ppbV      97
   116) naphthalene                   20.49  128   9784340     75.661 ppbV #    94
   117) 1,2,3-trichlorobenzene        20.74  180   3589374     84.098 ppbV      99
   118) benzothiophene                20.56  134  10679890    114.812 ppbV      96
   119) hexachlorobutadiene           20.82  225   2704723     73.775 ppbV      96
   120) 2-methylnaphthalene           21.63  142   3908547    143.849 ppbV      92
   121) 1-methylnaphthalene           21.83  142   4304551    124.107 ppbV     100
   ---------------------------------------------------------------------------

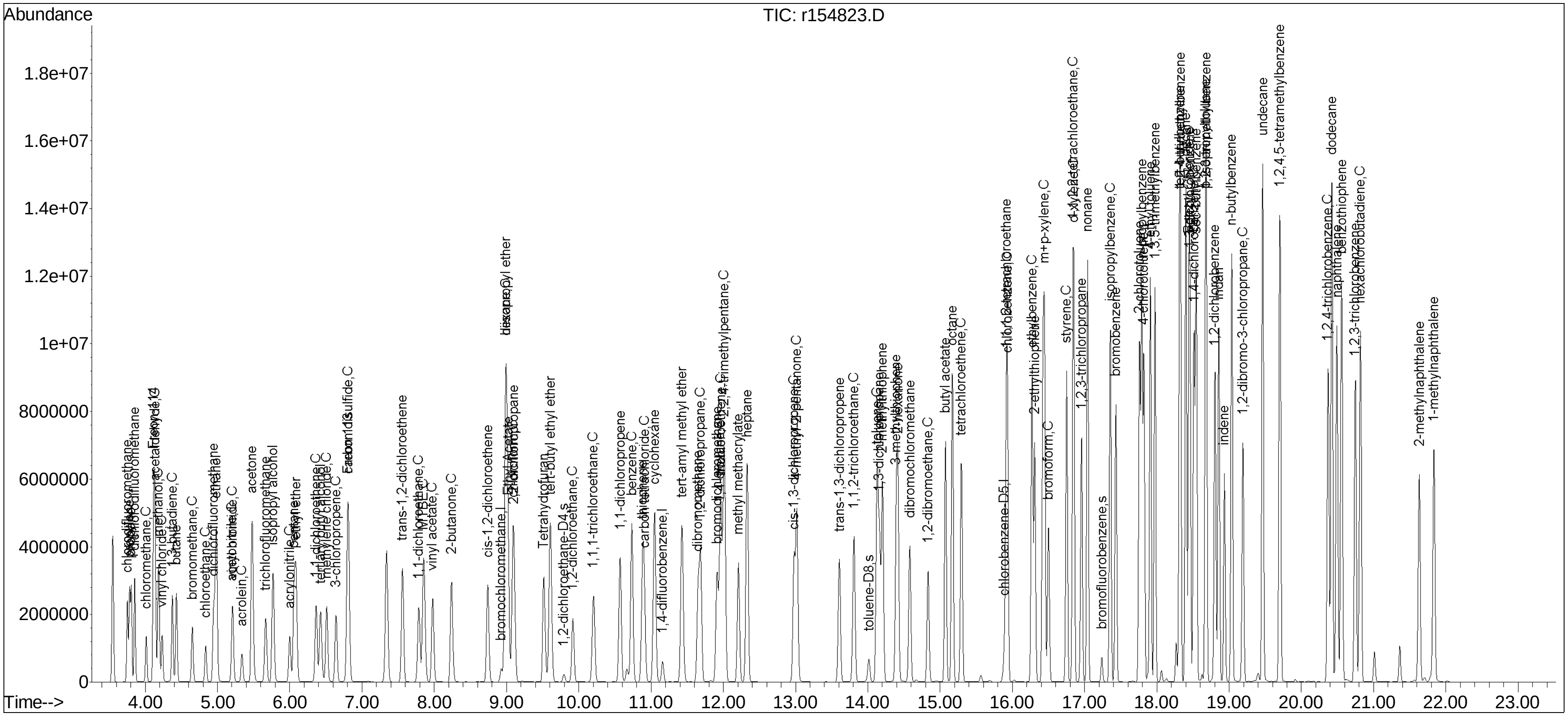
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154823.D
Acq On   : 22 Dec 2017   9:22 PM
Operator : AIRLAB15:RY
Sample   : ITO15-LLSTD100
Misc   : WG1075924
ALS Vial : 0   Sample Multiplier: 1

Quant Time: Dec 23 09:45:09 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 09:22:54 2017
Response via : Initial Calibration

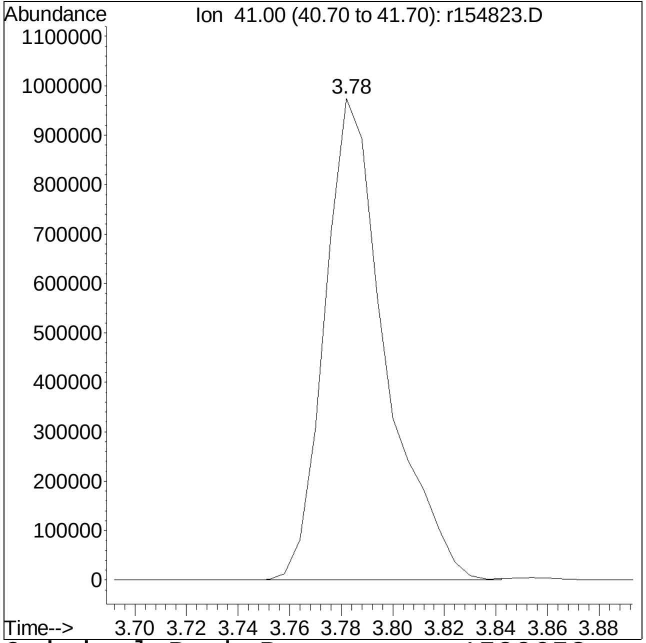
Sub List   : Default - All compounds listed7\171222T_ICAL\r154820.D

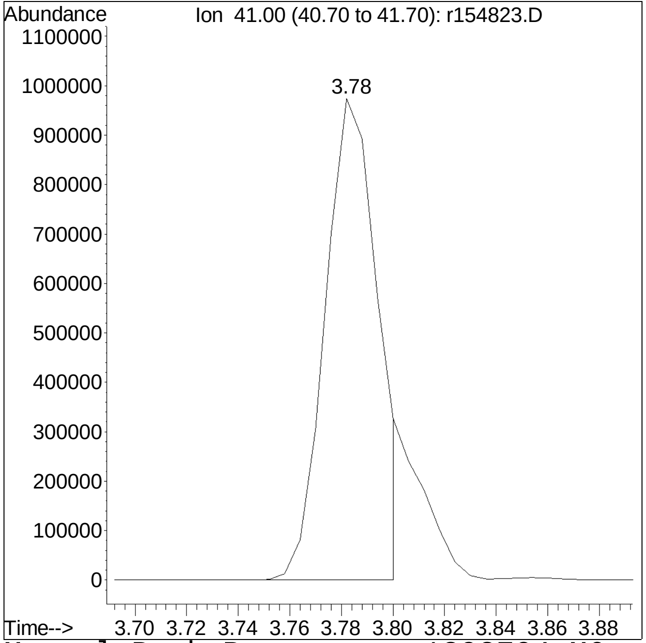


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154823.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  9:22 PM        Instrument  :
Sample      : ITO15-LLSTD100             Quant Date  : 12/23/2017  9:24 am
```

Compound #3: propylene





Original Peak Response = 1599658   Manual Peak Response = 1392704 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154826.D
  Acq On    : 23 Dec 2017  10:11 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-LLSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:45:25 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                     AvgRF   CCRF      %Dev Area% Dev(min)
  -------------------------------------------------------------------------
  1 I    bromochloromethane            1.000   1.000       0.0   96   0.02
  2      chlorodifluoromethane         1.014   0.876      13.6   82   0.00
  3      propylene                     0.707   0.718      -1.6   98   0.00
  4      propane                       0.824   0.686      16.7   82   0.00
  5      dichlorodifluoromethane       1.078   1.053       2.3   92   0.00
  6 C    chloromethane                 0.614   0.570       7.2   87   0.01
  7      Freon-114                     1.325   1.335      -0.8   93   0.01
  8 C    methanol                      0.255   0.219      14.1   79   0.00
  9 C    vinyl chloride                0.578   0.563       2.6   92   0.01
 10 C    1,3-butadiene                 0.539   0.545      -1.1   96   0.01
 11      butane                        1.001   0.895      10.6   88   0.01
 13 C    bromomethane                  0.495   0.480       3.0   91   0.00
 14 C    chloroethane                  0.291   0.276       5.2   91   0.01
 15      ethanol                       0.442   0.416       5.9   84   0.01
 16      dichlorofluoromethane         0.998   0.862      13.6   81   0.00
 17 C    vinyl bromide                 0.535   0.497       7.1   86   0.01
 18 C    acrolein                      0.264   0.239       9.5   85   0.01
 19      acetone                       0.701   0.648       7.6   97   0.01
 20 C    acetonitrile                  0.545   0.460      15.6   81   0.02
 21      trichlorofluoromethane        0.831   0.789       5.1   88   0.02
 22      isopropyl alcohol             1.015   0.913      10.0   97   0.01
 23 C    acrylonitrile                 0.517   0.472       8.7   87   0.02
 24      pentane                       1.157   0.982      15.1   79   0.02
 25      ethyl ether                   0.901   0.789      12.4   82   0.02
 26 C    1,1-dichloroethene            0.748   0.729       2.5   92   0.02
 27      tertiary butyl alcohol        0.959   0.878       8.4   85   0.02
 28 C    methylene chloride            0.736   0.709       3.7   88   0.02
 29 C    3-chloropropene               0.887   0.850       4.2   91   0.02
 30 C    carbon disulfide              1.787   1.663       6.9   84   0.02
 31      Freon 113                     1.010   0.954       5.5   89   0.02
 32      trans-1,2-dichloroethene      1.063   0.993       6.6   85   0.02
 33 C    1,1-dichloroethane            1.287   1.232       4.3   88   0.02
 34 C    MTBE                          1.783   1.832      -2.7   94   0.02
 35 C    vinyl acetate                 1.960   2.117      -8.0   98   0.02
 36 C    2-butanone                    1.887   1.812       4.0   88   0.02
 37      cis-1,2-dichloroethene        0.917   0.903       1.5   89   0.03
 38      Ethyl Acetate                 0.270   0.269       0.4   92   0.02
 39 C    chloroform                    1.109   1.100       0.8   93   0.02
 40      Tetrahydrofuran               1.176   1.125       4.3   86   0.02
```

```
                       Evaluate Continuing Calibration Report

   Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
   Data File : r154826.D
   Acq On    : 23 Dec 2017  10:11 AM
   Operator  : AIRLAB15:RY
   Sample    : CTO15-LLSTD010
   Misc      : WG1075924
   ALS Vial  : 0   Sample Multiplier: 1

   Quant Time: Dec 23 10:45:25 2017
   Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
   Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
   QLast Update : Sat Dec 23 10:18:16 2017
   Response via : Initial Calibration


   Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
   Max. RRF Dev :  30%     Max. Rel. Area : 140%

          Compound                          AvgRF   CCRF      %Dev Area% Dev(min)
   -------------------------------------------------------------------------
  41      2,2-dichloropropane                0.894   0.806       9.8   83   0.02
  42 C    1,2-dichloroethane                 0.717   0.662       7.7   85   0.02

  43 I    1,4-difluorobenzene                1.000   1.000       0.0   98   0.03
  44 C    hexane                             0.550   0.537       2.4   92   0.02
  45      diisopropyl ether                  0.265   0.242       8.7   86   0.02
  46      tert-butyl ethyl ether             0.903   0.799      11.5   82   0.02
  47 s    1,2-dichloroethane-D4              0.209   0.194       7.2   88   0.02
  48 C    1,1,1-trichloroethane              0.406   0.389       4.2   90   0.03
  49      1,1-dichloropropene                0.445   0.419       5.8   89   0.03
  50 C    benzene                            1.015   0.977       3.7   92   0.02
  52 C    carbon tetrachloride               0.349   0.342       2.0   91   0.02
  53      cyclohexane                        0.591   0.585       1.0   93   0.02
  54      tert-amyl methyl ether             0.841   0.785       6.7   87   0.02
  55      dibromomethane                     0.301   0.268      11.0   84   0.02
  56 C    1,2-dichloropropane                0.378   0.361       4.5   89   0.02
  57      bromodichloromethane               0.513   0.523      -1.9   94   0.03
  58 C    1,4-dioxane                        0.242   0.236       2.5   92   0.02
  59 C    trichloroethene                    0.383   0.377       1.6   92   0.03
  60 C    2,2,4-trimethylpentane             1.831   1.807       1.3   92   0.03
  61      methyl methacrylate                0.431   0.445      -3.2  103   0.03
  62      heptane                            0.848   0.817       3.7   90   0.03
  63 C    cis-1,3-dichloropropene            0.492   0.523      -6.3   98   0.03
  64 C    4-methyl-2-pentanone               0.972   0.939       3.4   88   0.03
  65      trans-1,3-dichloropropene          0.456   0.412       9.6   83   0.02
  66 C    1,1,2-trichloroethane              0.374   0.375      -0.3   95   0.02

  67 I    chlorobenzene-D5                   1.000   1.000       0.0   93   0.02
  68 C    toluene                            6.393   6.468      -1.2   91   0.03
  69 s    toluene-D8                         5.070   5.136      -1.3   93   0.02
  71      1,3-dichloropropane                3.096   2.901       6.3   86   0.02
  72      2-hexanone                         5.020   4.911       2.2   85   0.02
  74      dibromochloromethane               2.620   2.948     -12.5   96   0.02
  75 C    1,2-dibromoethane                  3.012   3.118      -3.5   93   0.02
  76      butyl acetate                      0.749   0.722       3.6   83   0.02
  77      octane                             2.345   2.240       4.5   86   0.02
  78 C    tetrachloroethene                  2.425   2.516      -3.8   94   0.00
  79      1,1,1,2-tetrachloroethane          2.031   1.993       1.9   86   0.02
  80 C    chlorobenzene                      4.970   5.177      -4.2   93   0.02
```

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                         Evaluate Continuing Calibration Report

   Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
   Data File : r154826.D
   Acq On    : 23 Dec 2017  10:11 AM
   Operator  : AIRLAB15:RY
   Sample    : CTO15-LLSTD010
   Misc      : WG1075924
   ALS Vial  : 0   Sample Multiplier: 1

   Quant Time: Dec 23 10:45:25 2017
   Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
   Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
   QLast Update : Sat Dec 23 10:18:16 2017
   Response via : Initial Calibration


   Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
   Max. RRF Dev :  30%     Max. Rel. Area : 140%

          Compound                        AvgRF   CCRF      %Dev Area% Dev(min)
   ----------------------------------------------------------------------------
  81 C    ethylbenzene                     8.080   8.364      -3.5   92   0.00
  83 C    m+p-xylene                       6.537   6.799      -4.0   92   0.02
  84 C    bromoform                        2.280   2.574     -12.9   96   0.00
  85 C    styrene                          5.390   5.733      -6.4   94   0.02
  86 C    1,1,2,2-tetrachloroethane        4.593   4.921      -7.1   94   0.02
  87 C    o-xylene                         6.549   6.943      -6.0   93   0.00
  88      1,2,3-trichloropropane           3.780   3.605       4.6   85   0.02
  89      nonane                           6.656   6.204       6.8   81   0.02
  90 s    bromofluorobenzene               2.788   2.607       6.5   90   0.02
  91 C    isopropylbenzene                 8.676   8.766      -1.0   90   0.00
  92      bromobenzene                     4.874   4.701       3.5   87   0.02
  93      2-chlorotoluene                  2.471   2.362       4.4   85   0.02
  94      n-propylbenzene                  2.868   2.799       2.4   87   0.00
  95      4-chlorotoluene                  2.476   2.332       5.8   85   0.02
  96      4-ethyl toluene                  9.724  10.233      -5.2   91   0.02
  97      1,3,5-trimethylbenzene           7.860   8.313      -5.8   92   0.02
  98      tert-butylbenzene                7.730   7.722       0.1   85   0.02
  99      1,2,4-trimethylbenzene           7.571   8.327     -10.0   93   0.00
 100      decane                           6.688   6.440       3.7   84   0.02
 101 C    Benzyl Chloride                  5.563   6.473     -16.4   94   0.02
 102      1,3-dichlorobenzene              5.102   5.363      -5.1   93   0.00
 103 C    1,4-dichlorobenzene              5.159   5.439      -5.4   93   0.02
 104      sec-butylbenzene                11.178  11.134       0.4   87   0.00
 106      p-isopropyltoluene               9.373   8.883       5.2   80   0.02
 107      1,2-dichlorobenzene              4.777   5.065      -6.0   96   0.02
 108      n-butylbenzene                   8.998   9.053      -0.6   88   0.00
 111 C    1,2-dibromo-3-chloropropane      1.973   2.034      -3.1   86   0.02
 112      undecane                         7.488   7.493      -0.1   85   0.00
 114      dodecane                         7.301   7.641      -4.7   81   0.00
 115 C    1,2,4-trichlorobenzene           3.706   4.069      -9.8   91   0.00
 116      naphthalene                     10.443  10.541      -0.9   84   0.02
 117      1,2,3-trichlorobenzene           3.512   3.560      -1.4   85   0.00
 119 C    hexachlorobutadiene              3.000   3.211      -7.0   90   0.02
 -----------------------------------------------------------------------------
           * Evaluation of CC level amount vs concentration.
    (#) = Out of Range                SPCC's out = 0  CCC's out = 0




 TALL171222.M Sat Dec 23 10:53:06 2017                                     3
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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154826.D
  Acq On    : 23 Dec 2017  10:11 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-LLSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:45:25 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default-ICV-AP2 - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ------------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane          8.93   49   244750    10.000 ppbV     0.02
     Standard Area  =       254284                Recovery   =   96.25%
    43) 1,4-difluorobenzene        11.18  114   578830    10.000 ppbV     0.03
     Standard Area  =       588274                Recovery   =   98.39%
    67) chlorobenzene-D5           15.90   54   100965    10.000 ppbV     0.02
     Standard Area  =       108475                Recovery   =   93.08%

   System Monitoring Compounds
    47) 1,2-dichloroethane-D4       9.80   65   112052     9.280 ppbV    0.02
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   92.80%
    69) toluene-D8                 14.03   98   518553    10.131 ppbV    0.02
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.31%
    90) bromofluorobenzene         17.25   95   263247     9.352 ppbV    0.02
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   93.52%

   Target Compounds                                                   Qvalue
     2) chlorodifluoromethane       3.76   51    214466      8.640 ppbV      98
     3) propylene                   3.79   41    175667M6   10.146 ppbV
     4) propane                     3.81   29    167972      8.324 ppbV      97
     5) dichlorodifluoromethane     3.86   85    257733      9.768 ppbV      98
     6) chloromethane               4.02   50    139395      9.274 ppbV      97
     7) Freon-114                   4.12   85    326645     10.073 ppbV     100
     8) methanol                    4.18   31    267730     42.900 ppbV      99
     9) vinyl chloride              4.24   62    137872      9.749 ppbV      96
    10) 1,3-butadiene               4.38   54    133441     10.117 ppbV      98
    11) butane                      4.44   43    218972      8.936 ppbV      98
    13) bromomethane                4.66   94    117574      9.700 ppbV      99
    14) chloroethane                4.84   64     67636      9.486 ppbV     100
    15) ethanol                     4.98   31    508849     47.049 ppbV      95
    16) dichlorofluoromethane       4.95   67    211066      8.638 ppbV      99
    17) vinyl bromide               5.22  106    121612      9.296 ppbV     100
    18) acrolein                    5.35   56     58550      9.055 ppbV      97
    19) acetone                     5.48   43    792906     46.213 ppbV      96
    20) acetonitrile                5.21   41    112703      8.444 ppbV     100
    21) trichlorofluoromethane      5.68  101    193026      9.495 ppbV      98
    22) isopropyl alcohol           5.76   45    558833     22.489 ppbV      99
    23) acrylonitrile               6.00   53    115637      9.143 ppbV      99
    24) pentane                     6.07   43    240330      8.483 ppbV      98
    25) ethyl ether                 6.10   31    193034      8.752 ppbV      99
```

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                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154826.D
  Acq On    : 23 Dec 2017  10:11 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-LLSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:45:25 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default-ICV-AP2 - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------------
    26) 1,1-dichloroethene            6.37   61    178486      9.746 ppbV      97
    27) tertiary butyl alcohol        6.43   59    214815      9.154 ppbV      97
    28) methylene chloride            6.52   49    173539      9.636 ppbV      96
    29) 3-chloropropene               6.65   41    207933      9.573 ppbV      98
    30) carbon disulfide              6.82   76    407080      9.308 ppbV      99
    31) Freon 113                     6.82  101    233597      9.446 ppbV      98
    32) trans-1,2-dichloroethene      7.57   61    243109      9.343 ppbV      95
    33) 1,1-dichloroethane            7.79   63    301635      9.579 ppbV     100
    34) MTBE                          7.87   73    448266     10.275 ppbV      98
    35) vinyl acetate                 7.98   43    518226     10.805 ppbV      99
    36) 2-butanone                    8.25   43    443437      9.601 ppbV      98
    37) cis-1,2-dichloroethene        8.75   61    221057      9.852 ppbV      99
    38) Ethyl Acetate                 9.03   61     65853      9.967 ppbV      98
    39) chloroform                    9.09   83    269171      9.919 ppbV      99
    40) Tetrahydrofuran               9.54   42    275401      9.568 ppbV      97
    41) 2,2-dichloropropane           9.11   77    197180      9.008 ppbV      95
    42) 1,2-dichloroethane            9.93   62    161992      9.234 ppbV      98
    44) hexane                        9.00   57    310985      9.772 ppbV      80
    45) diisopropyl ether             9.00   87    139891      9.120 ppbV      93
    46) tert-butyl ethyl ether        9.62   59    462440      8.847 ppbV      99
    48) 1,1,1-trichloroethane        10.22   97    225103      9.585 ppbV      98
    49) 1,1-dichloropropene          10.58   75    242678      9.420 ppbV      96
    50) benzene                      10.74   78    565299      9.622 ppbV     100
    52) carbon tetrachloride         10.92  117    197987      9.812 ppbV      98
    53) cyclohexane                  11.06   56    338547      9.890 ppbV      97
    54) tert-amyl methyl ether       11.44   73    454663      9.338 ppbV      96
    55) dibromomethane               11.66   93    155155      8.904 ppbV      97
    56) 1,2-dichloropropane          11.69   63    208869      9.538 ppbV      99
    57) bromodichloromethane         11.93   83    302523     10.188 ppbV      99
    58) 1,4-dioxane                  11.97   88    136392      9.740 ppbV      97
    59) trichloroethene              11.98  130    218105      9.828 ppbV      98
    60) 2,2,4-trimethylpentane       12.03   57   1045845      9.869 ppbV      97
    61) methyl methacrylate          12.23   41    257850     10.346 ppbV      96
    62) heptane                      12.34   43    473009      9.638 ppbV      99
    63) cis-1,3-dichloropropene      12.99   75    302497     10.630 ppbV      97
    64) 4-methyl-2-pentanone         13.03   43    543595      9.660 ppbV      99
    65) trans-1,3-dichloropropene    13.62   75    238644      9.035 ppbV      95
    66) 1,1,2-trichloroethane        13.82   97    217178     10.043 ppbV      96
    68) toluene                      14.14   91    653048     10.117 ppbV     100
    71) 1,3-dichloropropane          14.17   76    292895      9.370 ppbV      95
```

```
                 Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154826.D
Acq On    : 23 Dec 2017  10:11 AM
Operator  : AIRLAB15:RY
Sample    : CTO15-LLSTD010
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:45:25 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
Sub List     : Default-ICV-AP2 - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  72) 2-hexanone                    14.43   43    495838      9.782 ppbV      95
  74) dibromochloromethane          14.59  129    297638     11.251 ppbV      98
  75) 1,2-dibromoethane             14.84  107    314824     10.353 ppbV      98
  76) butyl acetate                 15.08   73     72897      9.634 ppbV      92
  77) octane                        15.18   85    226179      9.553 ppbV      93
  78) tetrachloroethene             15.30  166    254012     10.374 ppbV      95
  79) 1,1,1,2-tetrachloroethane     15.93  131    201208      9.813 ppbV      97
  80) chlorobenzene                 15.94  112    522651     10.417 ppbV      98
  81) ethylbenzene                  16.27   91    844491     10.351 ppbV      99
  83) m+p-xylene                    16.44   91   1373015     20.805 ppbV     100
  84) bromoform                     16.50  173    259920     11.292 ppbV      96
  85) styrene                       16.76  104    578882     10.636 ppbV      97
  86) 1,1,2,2-tetrachloroethane     16.85   83    496873     10.715 ppbV      99
  87) o-xylene                      16.85   91    701019     10.602 ppbV      97
  88) 1,2,3-trichloropropane        16.97   75    364005      9.537 ppbV      99
  89) nonane                        17.05   43    626337      9.320 ppbV      98
  91) isopropylbenzene              17.36  105    885100     10.104 ppbV      99
  92) bromobenzene                  17.44   77    474676      9.646 ppbV      96
  93) 2-chlorotoluene               17.77  126    238453      9.557 ppbV      99
  94) n-propylbenzene               17.79  120    282585      9.759 ppbV      99
  95) 4-chlorotoluene               17.82  126    235485      9.420 ppbV      91
  96) 4-ethyl toluene               17.92  105   1033145     10.524 ppbV      98
  97) 1,3,5-trimethylbenzene        17.98  105    839366     10.577 ppbV      98
  98) tert-butylbenzene             18.32  119    779653      9.990 ppbV      98
  99) 1,2,4-trimethylbenzene        18.32  105    840709     10.999 ppbV      96
 100) decane                        18.41   57    650239      9.629 ppbV     100
 101) Benzyl Chloride               18.45   91    653514     11.635 ppbV     100
 102) 1,3-dichlorobenzene           18.46  146    541455     10.511 ppbV      98
 103) 1,4-dichlorobenzene           18.52  146    549197     10.543 ppbV      98
 104) sec-butylbenzene              18.55  105   1124120      9.961 ppbV     100
 106) p-isopropyltoluene            18.68  119    896845      9.477 ppbV      98
 107) 1,2-dichlorobenzene           18.81  146    511435     10.604 ppbV      95
 108) n-butylbenzene                19.04   91    914038     10.062 ppbV      99
 111) 1,2-dibromo-3-chloropr...     19.20   75    205408     10.309 ppbV      97
 112) undecane                      19.47   57    756558     10.007 ppbV      98
 114) dodecane                      20.43   57    771517     10.466 ppbV      95
 115) 1,2,4-trichlorobenzene        20.38  180    410852     10.980 ppbV      97
 116) naphthalene                   20.50  128   1064254     10.094 ppbV     100
 117) 1,2,3-trichlorobenzene        20.75  180    359410     10.137 ppbV      98
 119) hexachlorobutadiene           20.82  225    324176     10.703 ppbV      99
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```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
  Data File : r154826.D
  Acq On    : 23 Dec 2017  10:11 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-LLSTD010
  Misc      : WG1075924
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:45:25 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\r154820.D
  Sub List     : Default-ICV-AP2 - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   --------------------------------------------------------------------------

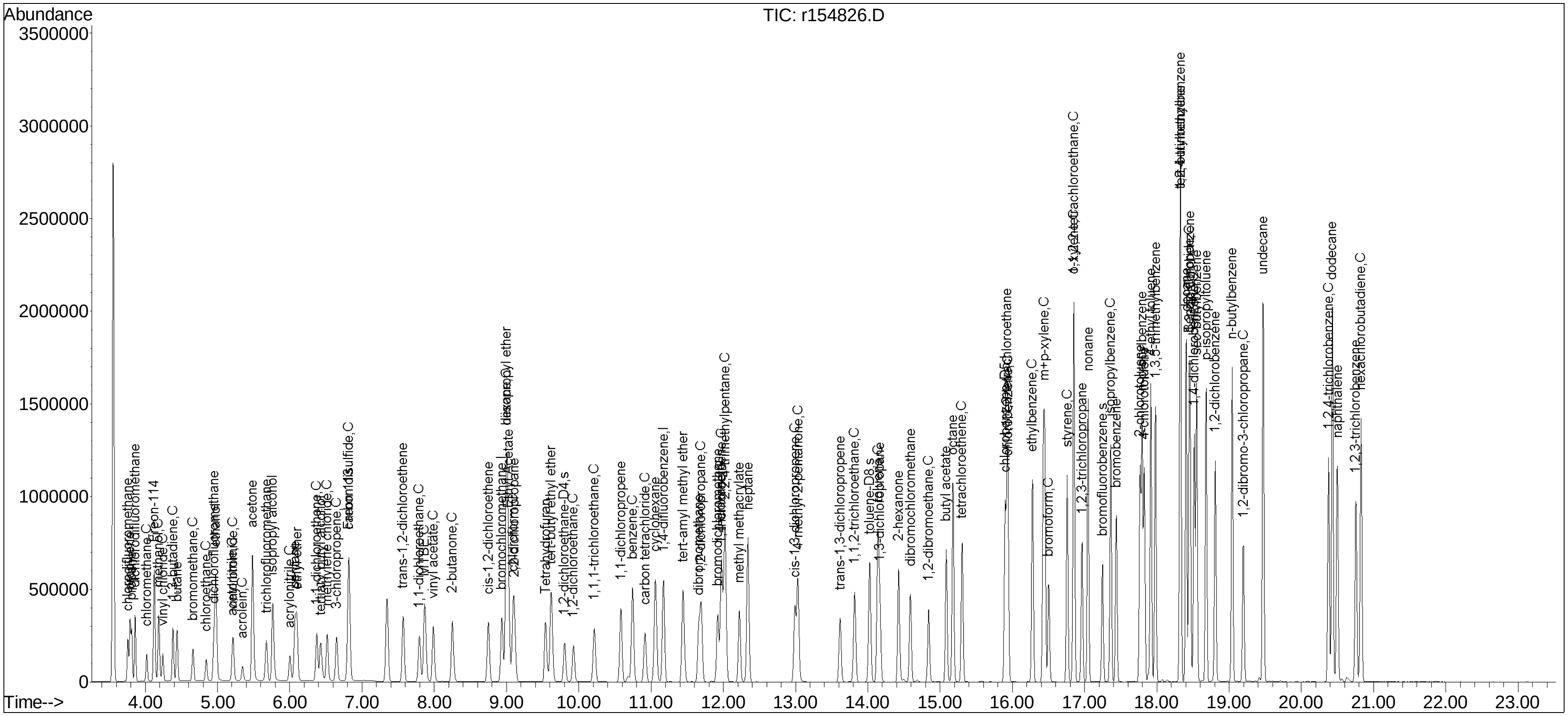
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\
Data File : r154826.D
Acq On    : 23 Dec 2017  10:11 AM
Operator  : AIRLAB15:RY
Sample    : CTO15-LLSTD010
Misc      : WG1075924
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:45:25 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222T_ICAL\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

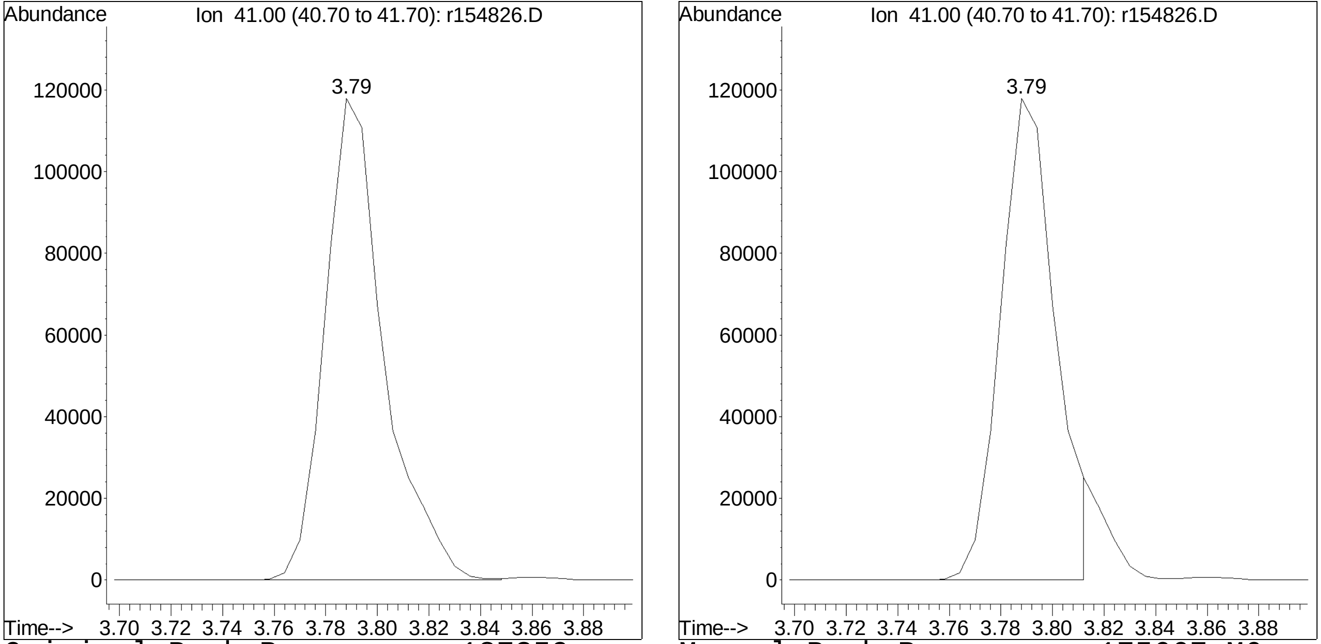
Sub List     : Default-ICV-AP2 - All compounds listedT_ICAL\r154820.D
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154826.D                Operator      : AIRLAB15:RY
Date Inj'd  : 12/23/2017 10:11 AM      Instrument    :
Sample      : CTO15-LLSTD010           Quant Date    : 12/23/2017 10:44 am
```

Compound #3: propylene



Original Peak Response = 187359 Manual Peak Response = 175667 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Continuing Calibration

Continuing Calibration
Form 7

Client	: Sterling Environmental Eng	Lab Number	: L1747754	
Project Name	: EHS 2017 IA	Project Number	: 28014	
Instrument ID	: AIRLAB15	Calibration Date	: 01/02/18 10:38	
Lab File ID	: R154988	Init. Calib. Date(s)	: 12/22/17	12/22/17
Sample No	: WG1078148-2	Init. Calib. Times	: 16:49	21:22
Channel	:			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
bromochloromethane	1	1	-	0	30	87	0
chlorodifluoromethane	1.014	0.985	-	2.9	30	83	0
propylene	0.707	0.701	-	0.8	30	86	0
propane	0.824	0.701	-	14.9	30	75	0
dichlorodifluoromethane	1.078	1.125	-	-4.4	30	89	-.01
chloromethane	0.614	0.55	-	10.4	30	75	0
Freon-114	1.325	1.245	-	6	30	78	0
methanol	0.255	0.22	-	13.7	30	72	0
vinyl chloride	0.578	0.559	-	3.3	30	82	0
1,3-butadiene	0.539	0.471	-	12.6	30	74	0
butane	1.001	0.984	-	1.7	30	87	0
bromomethane	0.495	0.478	-	3.4	30	82	-.01
chloroethane	0.291	0.272	-	6.5	30	81	0
ethanol	0.442	0.381	-	13.8	30	69	0
dichlorofluoromethane	0.998	0.998	-	0	30	84	0
vinyl bromide	0.535	0.526	-	1.7	30	82	0
acrolein	0.264	0.227	-	14	30	73	0
acetone	0.701	0.583	-	16.8	30	78	0
acetonitrile	0.545	0.476	-	12.7	30	75	0
trichlorofluoromethane	0.831	0.863	-	-3.9	30	87	0
isopropyl alcohol	1.015	0.759	-	25.2	30	72	0
acrylonitrile	0.517	0.424	-	18	30	70	0
pentane	1.157	1.042	-	9.9	30	75	0
ethyl ether	0.901	0.723	-	19.8	30	68	0
1,1-dichloroethene	0.748	0.712	-	4.8	30	80	0
tertiary butyl alcohol	0.959	0.794	-	17.2	30	69	0
methylene chloride	0.736	0.647	-	12.1	30	72	0
3-chloropropene	0.887	0.763	-	14	30	74	0
carbon disulfide	1.787	1.64	-	8.2	30	75	0
Freon 113	1.01	0.995	-	1.5	30	84	0
trans-1,2-dichloroethene	1.063	1.138	-	-7.1	30	88	0
1,1-dichloroethane	1.287	1.335	-	-3.7	30	86	0
MTBE	1.783	1.652	-	7.3	30	76	0
vinyl acetate	1.96	1.843	-	6	30	76	0
2-butanone	1.887	1.806	-	4.3	30	79	0
cis-1,2-dichloroethene	0.917	0.988	-	-7.7	30	88	0
Ethyl Acetate	0.27	0.275	-	-1.9	30	85	0
chloroform	1.109	1.18	-	-6.4	30	90	0
Tetrahydrofuran	1.176	1.146	-	2.6	30	79	0
2,2-dichloropropane	0.894	0.892	-	0.2	30	83	0
1,2-dichloroethane	0.717	0.775	-	-8.1	30	89	0
1,4-difluorobenzene	1	1	-	0	30	95	0
hexane	0.55	0.531	-	3.5	30	87	0
diisopropyl ether	0.265	0.246	-	7.2	30	84	0
tert-butyl ethyl ether	0.903	0.8	-	11.4	30	79	0

* Value outside of QC limits.

Continuing Calibration
Form 7

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Lab File ID : R154988
Sample No : WG1078148-2
Channel :

Lab Number : L1747754
Project Number : 28014
Calibration Date : 01/02/18 10:38
Init. Calib. Date(s) : 12/22/17 12/22/17
Init. Calib. Times : 16:49 21:22

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,1,1-trichloroethane	0.406	0.403	-	0.7	30	90	0
1,1-dichloropropene	0.445	0.41	-	7.9	30	84	0
benzene	1.015	0.926	-	8.8	30	84	0
carbon tetrachloride	0.349	0.355	-	-1.7	30	91	0
cyclohexane	0.591	0.557	-	5.8	30	86	0
tert-amyl methyl ether	0.841	0.709	-	15.7	30	75	0
dibromomethane	0.301	0.296	-	1.7	30	90	0
1,2-dichloropropane	0.378	0.356	-	5.8	30	85	0
bromodichloromethane	0.513	0.511	-	0.4	30	88	0
1,4-dioxane	0.242	0.232	-	4.1	30	87	0
trichloroethene	0.383	0.374	-	2.3	30	88	0
2,2,4-trimethylpentane	1.831	1.754	-	4.2	30	86	0
methyl methacrylate	0.431	0.374	-	13.2	30	83	.02
heptane	0.848	0.752	-	11.3	30	79	.02
cis-1,3-dichloropropene	0.492	0.451	-	8.3	30	81	.02
4-methyl-2-pentanone	0.972	0.864	-	11.1	30	78	0
trans-1,3-dichloropropene	0.456	0.417	-	8.6	30	81	0
1,1,2-trichloroethane	0.374	0.361	-	3.5	30	87	0
chlorobenzene-D5	1	1	-	0	30	90	0
toluene	6.393	6.4	-	-0.1	30	87	0
1,3-dichloropropane	3.096	2.922	-	5.6	30	84	0
2-hexanone	5.02	4.555	-	9.3	30	77	0
dibromochloromethane	2.62	2.811	-	-7.3	30	89	0
1,2-dibromoethane	3.012	3.024	-	-0.4	30	88	0
butyl acetate	0.749	0.7	-	6.5	30	78	0
octane	2.345	2.345	-	0	30	87	0
tetrachloroethene	2.425	2.419	-	0.2	30	87	0
1,1,1,2-tetrachloroethane	2.031	2.076	-	-2.2	30	87	0
chlorobenzene	4.97	4.903	-	1.3	30	86	0
ethylbenzene	8.08	8.243	-	-2	30	88	0
m+p-xylene	6.537	6.698	-	-2.5	30	88	0
bromoform	2.28	2.469	-	-8.3	30	89	0
styrene	5.39	5.337	-	1	30	85	0
1,1,2,2-tetrachloroethane	4.593	4.642	-	-1.1	30	86	0
o-xylene	6.549	6.698	-	-2.3	30	87	-.02
1,2,3-trichloropropane	3.78	3.688	-	2.4	30	84	-.02
nonane	6.656	6.134	-	7.8	30	78	-.02
isopropylbenzene	8.676	8.579	-	1.1	30	85	-.03
bromobenzene	4.874	4.714	-	3.3	30	84	-.03
2-chlorotoluene	2.471	2.477	-	-0.2	30	87	-.04
n-propylbenzene	2.868	2.879	-	-0.4	30	86	-.05
4-chlorotoluene	2.476	2.498	-	-0.9	30	88	-.04
4-ethyl toluene	9.724	9.709	-	0.2	30	84	-.05
1,3,5-trimethylbenzene	7.86	7.724	-	1.7	30	83	-.05
tert-butylbenzene	7.73	8.792	-	-13.7	30	94	-.06

* Value outside of QC limits.

Continuing Calibration
Form 7

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Calibration Date**	: 01/02/18 10:38
Lab File ID	: R154988	**Init. Calib. Date(s)**	: 12/22/17 12/22/17
Sample No	: WG1078148-2	**Init. Calib. Times**	: 16:49 21:22
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2,4-trimethylbenzene	7.571	8.356	-	-10.4	30	91	-.07
decane	6.688	6.543	-	2.2	30	82	-.07
Benzyl Chloride	5.563	5.506	-	1	30	77	-.07
1,3-dichlorobenzene	5.102	5.01	-	1.8	30	84	-.07
1,4-dichlorobenzene	5.159	4.894	-	5.1	30	81	-.07
sec-butylbenzene	11.178	11.148	-	0.3	30	84	-.08
p-isopropyltoluene	9.373	9.464	-	-1	30	82	-.08
1,2-dichlorobenzene	4.777	4.652	-	2.6	30	86	-.08
n-butylbenzene	8.998	8.88	-	1.3	30	84	-.09
1,2-dibromo-3-chloropropan	1.973	1.943	-	1.5	30	80	-.09
undecane	7.488	7.303	-	2.5	30	80	-.1
dodecane	7.301	7.32	-	-0.3	30	75	-.13
1,2,4-trichlorobenzene	3.706	3.666	-	1.1	30	80	-.13
naphthalene	10.443	10.265	-	1.7	30	79	-.13
1,2,3-trichlorobenzene	3.512	3.484	-	0.8	30	81	-.13
hexachlorobutadiene	3	2.999	-	0	30	81	-.12

* Value outside of QC limits.

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154988.D
  Acq On    :  2 Jan 2018  10:38 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-2,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 11:15:20 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      AvgRF   CCRF      %Dev Area% Dev(min)
  -------------------------------------------------------------------------
  1 I    bromochloromethane             1.000   1.000       0.0   87   0.00
  2      chlorodifluoromethane          1.014   0.985       2.9   83   0.00
  3      propylene                      0.707   0.701       0.8   86   0.00
  4      propane                        0.824   0.701      14.9   75   0.00
  5      dichlorodifluoromethane        1.078   1.125      -4.4   89  -0.01
  6 C    chloromethane                  0.614   0.550      10.4   75   0.00
  7      Freon-114                      1.325   1.245       6.0   78   0.00
  8 C    methanol                       0.255   0.220      13.7   72   0.00
  9 C    vinyl chloride                 0.578   0.559       3.3   82   0.00
 10 C    1,3-butadiene                  0.539   0.471      12.6   74   0.00
 11      butane                         1.001   0.984       1.7   87   0.00
 13 C    bromomethane                   0.495   0.478       3.4   82  -0.01
 14 C    chloroethane                   0.291   0.272       6.5   81   0.00
 15      ethanol                        0.442   0.381      13.8   69   0.00
 16      dichlorofluoromethane          0.998   0.998       0.0   84   0.00
 17 C    vinyl bromide                  0.535   0.526       1.7   82   0.00
 18 C    acrolein                       0.264   0.227      14.0   73   0.00
 19      acetone                        0.701   0.583      16.8   78   0.00
 20 C    acetonitrile                   0.545   0.476      12.7   75   0.00
 21      trichlorofluoromethane         0.831   0.863      -3.9   87   0.00
 22      isopropyl alcohol              1.015   0.759      25.2   72   0.00
 23 C    acrylonitrile                  0.517   0.424      18.0   70   0.00
 24      pentane                        1.157   1.042       9.9   75   0.00
 25      ethyl ether                    0.901   0.723      19.8   68   0.00
 26 C    1,1-dichloroethene             0.748   0.712       4.8   80   0.00
 27      tertiary butyl alcohol         0.959   0.794      17.2   69   0.00
 28 C    methylene chloride             0.736   0.647      12.1   72   0.00
 29 C    3-chloropropene                0.887   0.763      14.0   74   0.00
 30 C    carbon disulfide               1.787   1.640       8.2   75   0.00
 31      Freon 113                      1.010   0.995       1.5   84   0.00
 32      trans-1,2-dichloroethene       1.063   1.138      -7.1   88   0.00
 33 C    1,1-dichloroethane             1.287   1.335      -3.7   86   0.00
 34 C    MTBE                           1.783   1.652       7.3   76   0.00
 35 C    vinyl acetate                  1.960   1.843       6.0   76   0.00
 36 C    2-butanone                     1.887   1.806       4.3   79   0.00
 37      cis-1,2-dichloroethene         0.917   0.988      -7.7   88   0.00
 38      Ethyl Acetate                  0.270   0.275      -1.9   85   0.00
 39 C    chloroform                     1.109   1.180      -6.4   90   0.00
 40      Tetrahydrofuran                1.176   1.146       2.6   79   0.00
```

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154988.D
  Acq On    :  2 Jan 2018  10:38 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-2,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 11:15:20 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      AvgRF   CCRF      %Dev Area% Dev(min)
  ----------------------------------------------------------------------------
 41      2,2-dichloropropane            0.894   0.892       0.2   83   0.00
 42 C    1,2-dichloroethane             0.717   0.775      -8.1   89   0.00

 43 I    1,4-difluorobenzene            1.000   1.000       0.0   95   0.00
 44 C    hexane                         0.550   0.531       3.5   87   0.00
 45      diisopropyl ether              0.265   0.246       7.2   84   0.00
 46      tert-butyl ethyl ether         0.903   0.800      11.4   79   0.00
 48 C    1,1,1-trichloroethane          0.406   0.403       0.7   90   0.00
 49      1,1-dichloropropene            0.445   0.410       7.9   84   0.00
 50 C    benzene                        1.015   0.926       8.8   84   0.00
 52 C    carbon tetrachloride           0.349   0.355      -1.7   91   0.00
 53      cyclohexane                    0.591   0.557       5.8   86   0.00
 54      tert-amyl methyl ether         0.841   0.709      15.7   75   0.00
 55      dibromomethane                 0.301   0.296       1.7   90   0.00
 56 C    1,2-dichloropropane            0.378   0.356       5.8   85   0.00
 57      bromodichloromethane           0.513   0.511       0.4   88   0.00
 58 C    1,4-dioxane                    0.242   0.232       4.1   87   0.00
 59 C    trichloroethene                0.383   0.374       2.3   88   0.00
 60 C    2,2,4-trimethylpentane         1.831   1.754       4.2   86   0.00
 61      methyl methacrylate            0.431   0.374      13.2   83   0.02
 62      heptane                        0.848   0.752      11.3   79   0.02
 63 C    cis-1,3-dichloropropene        0.492   0.451       8.3   81   0.02
 64 C    4-methyl-2-pentanone           0.972   0.864      11.1   78   0.00
 65      trans-1,3-dichloropropene      0.456   0.417       8.6   81   0.00
 66 C    1,1,2-trichloroethane          0.374   0.361       3.5   87   0.00

 67 I    chlorobenzene-D5               1.000   1.000       0.0   90   0.00
 68 C    toluene                        6.393   6.400      -0.1   87   0.00
 71      1,3-dichloropropane            3.096   2.922       5.6   84   0.00
 72      2-hexanone                     5.020   4.555       9.3   77   0.00
 74      dibromochloromethane           2.620   2.811      -7.3   89   0.00
 75 C    1,2-dibromoethane              3.012   3.024      -0.4   88   0.00
 76      butyl acetate                  0.749   0.700       6.5   78   0.00
 77      octane                         2.345   2.345       0.0   87   0.00
 78 C    tetrachloroethene              2.425   2.419       0.2   87   0.00
 79      1,1,1,2-tetrachloroethane      2.031   2.076      -2.2   87   0.00
 80 C    chlorobenzene                  4.970   4.903       1.3   86   0.00
 81 C    ethylbenzene                   8.080   8.243      -2.0   88   0.00
 83 C    m+p-xylene                     6.537   6.698      -2.5   88   0.00
```

```
                     Evaluate Continuing Calibration Report

   Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
   Data File : r154988.D
   Acq On    :  2 Jan 2018  10:38 AM
   Operator  : AIRLAB15:RY
   Sample    : WG1078148-2,3,250,250
   Misc      : WG1078148,ICAL14299
   ALS Vial  : 0   Sample Multiplier: 1

   Quant Time: Jan 02 11:15:20 2018
   Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
   Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
   QLast Update : Sat Dec 23 10:18:16 2017
   Response via : Initial Calibration


   Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
   Max. RRF Dev :  30%     Max. Rel. Area : 140%

          Compound                        AvgRF   CCRF      %Dev Area% Dev(min)
   ----------------------------------------------------------------------------
  84 C    bromoform                        2.280   2.469      -8.3   89   0.00
  85 C    styrene                          5.390   5.337       1.0   85   0.00
  86 C    1,1,2,2-tetrachloroethane        4.593   4.642      -1.1   86   0.00
  87 C    o-xylene                         6.549   6.698      -2.3   87  -0.02
  88      1,2,3-trichloropropane           3.780   3.688       2.4   84  -0.02
  89      nonane                           6.656   6.134       7.8   78  -0.02
  91 C    isopropylbenzene                 8.676   8.579       1.1   85  -0.03
  92      bromobenzene                     4.874   4.714       3.3   84  -0.03
  93      2-chlorotoluene                  2.471   2.477      -0.2   87  -0.04
  94      n-propylbenzene                  2.868   2.879      -0.4   86  -0.05
  95      4-chlorotoluene                  2.476   2.498      -0.9   88  -0.04
  96      4-ethyl toluene                  9.724   9.709       0.2   84  -0.05
  97      1,3,5-trimethylbenzene           7.860   7.724       1.7   83  -0.05
  98      tert-butylbenzene                7.730   8.792     -13.7   94  -0.06
  99      1,2,4-trimethylbenzene           7.571   8.356     -10.4   91  -0.07
 100      decane                           6.688   6.543       2.2   82  -0.07
 101 C    Benzyl Chloride                  5.563   5.506       1.0   77  -0.07
 102      1,3-dichlorobenzene              5.102   5.010       1.8   84  -0.07
 103 C    1,4-dichlorobenzene              5.159   4.894       5.1   81  -0.07
 104      sec-butylbenzene                11.178  11.148       0.3   84  -0.08
 106      p-isopropyltoluene               9.373   9.464      -1.0   82  -0.08
 107      1,2-dichlorobenzene              4.777   4.652       2.6   86  -0.08
 108      n-butylbenzene                   8.998   8.880       1.3   84  -0.09
 111 C    1,2-dibromo-3-chloropropane      1.973   1.943       1.5   80  -0.09
 112      undecane                         7.488   7.303       2.5   80  -0.10
 114      dodecane                         7.301   7.320      -0.3   75  -0.13
 115 C    1,2,4-trichlorobenzene           3.706   3.666       1.1   80  -0.13
 116      naphthalene                     10.443  10.265       1.7   79  -0.13
 117      1,2,3-trichlorobenzene           3.512   3.484       0.8   81  -0.13
 119 C    hexachlorobutadiene              3.000   2.999       0.0   81  -0.12
  -----------------------------------------------------------------------------
           * Evaluation of CC level amount vs concentration.
     (#) = Out of Range                SPCC's out = 0  CCC's out = 0
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154988.D
  Acq On    :  2 Jan 2018  10:38 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-2,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 11:15:20 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  Sub List     : Default-LCS-AP2 - All compounds listed

         Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane          8.92   49   220148    10.000 ppbV     0.00
    43) 1,4-difluorobenzene        11.16  114   557225    10.000 ppbV     0.00
    67) chlorobenzene-D5           15.89   54    97822    10.000 ppbV     0.00

   System Monitoring Compounds

   Target Compounds                                                Qvalue
     2) chlorodifluoromethane       3.75   51    216870     9.714 ppbV      98
     3) propylene                   3.78   41    154234M6   9.904 ppbV
     4) propane                     3.80   29    154422     8.508 ppbV      94
     5) dichlorodifluoromethane     3.84   85    247675    10.436 ppbV      97
     6) chloromethane               4.00   50    121056     8.954 ppbV      99
     7) Freon-114                   4.11   85    274114     9.397 ppbV      94
     8) methanol                    4.17   31    242527    43.205 ppbV      99
     9) vinyl chloride              4.23   62    123017     9.670 ppbV     100
    10) 1,3-butadiene               4.36   54    103641     8.736 ppbV      93
    11) butane                      4.42   43    216672     9.830 ppbV      99
    13) bromomethane                4.64   94    105211     9.650 ppbV      97
    14) chloroethane                4.83   64     59874     9.336 ppbV     100
    15) ethanol                     4.96   31    419317    43.103 ppbV      94
    16) dichlorofluoromethane       4.93   67    219780     9.999 ppbV      99
    17) vinyl bromide               5.20  106    115813     9.842 ppbV      96
    18) acrolein                    5.33   56     49964     8.591 ppbV      97
    19) acetone                     5.47   43    641587    41.572 ppbV      98
    20) acetonitrile                5.19   41    104725     8.723 ppbV     100
    21) trichlorofluoromethane      5.66  101    189887    10.385 ppbV      98
    22) isopropyl alcohol           5.75   45    417828    18.693 ppbV     100
    23) acrylonitrile               5.98   53     93429     8.213 ppbV      98
    24) pentane                     6.05   43    229299     8.999 ppbV      98
    25) ethyl ether                 6.08   31    159250     8.027 ppbV      92
    26) 1,1-dichloroethene          6.36   61    156711     9.513 ppbV      99
    27) tertiary butyl alcohol      6.41   59    174691     8.276 ppbV      93
    28) methylene chloride          6.50   49    142409     8.791 ppbV      97
    29) 3-chloropropene             6.63   41    167931     8.595 ppbV     100
    30) carbon disulfide            6.79   76    361003     9.176 ppbV      98
    31) Freon 113                   6.79  101    219018     9.847 ppbV      97
    32) trans-1,2-dichloroethene    7.55   61    250604    10.708 ppbV      98
    33) 1,1-dichloroethane          7.78   63    293994    10.379 ppbV      99
    34) MTBE                        7.85   73    363677     9.267 ppbV      97
    35) vinyl acetate               7.97   43    405659     9.403 ppbV      98
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154988.D
  Acq On    :  2 Jan 2018  10:38 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-2,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 11:15:20 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  Sub List     : Default-LCS-AP2 - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    36) 2-butanone                    8.23   43    397695      9.573 ppbV      99
    37) cis-1,2-dichloroethene        8.73   61    217436     10.774 ppbV      94
    38) Ethyl Acetate                 9.01   61     60531     10.186 ppbV      94
    39) chloroform                    9.07   83    259749     10.642 ppbV      98
    40) Tetrahydrofuran               9.53   42    252230      9.742 ppbV      99
    41) 2,2-dichloropropane           9.09   77    196416      9.976 ppbV      99
    42) 1,2-dichloroethane            9.91   62    170573     10.810 ppbV      95
    44) hexane                        8.98   57    295789      9.655 ppbV      78
    45) diisopropyl ether             8.98   87    136836      9.267 ppbV      84
    46) tert-butyl ethyl ether        9.60   59    446003      8.863 ppbV      99
    48) 1,1,1-trichloroethane        10.20   97    224451      9.927 ppbV      99
    49) 1,1-dichloropropene          10.57   75    228521      9.214 ppbV      99
    50) benzene                      10.73   78    516202      9.127 ppbV     100
    52) carbon tetrachloride         10.90  117    198041     10.196 ppbV      99
    53) cyclohexane                  11.05   56    310293      9.416 ppbV      98
    54) tert-amyl methyl ether       11.43   73    395109      8.430 ppbV      97
    55) dibromomethane               11.65   93    164939      9.833 ppbV      95
    56) 1,2-dichloropropane          11.68   63    198528      9.418 ppbV      99
    57) bromodichloromethane         11.91   83    284684      9.959 ppbV     100
    58) 1,4-dioxane                  11.96   88    129116      9.578 ppbV      97
    59) trichloroethene              11.96  130    208668      9.767 ppbV      99
    60) 2,2,4-trimethylpentane       12.01   57    977582      9.583 ppbV      98
    61) methyl methacrylate          12.22   41    208225      8.679 ppbV      98
    62) heptane                      12.33   43    419210      8.873 ppbV      97
    63) cis-1,3-dichloropropene      12.98   75    251429      9.178 ppbV      98
    64) 4-methyl-2-pentanone         13.02   43    481503      8.888 ppbV      96
    65) trans-1,3-dichloropropene    13.60   75    232105      9.129 ppbV      96
    66) 1,1,2-trichloroethane        13.81   97    200971      9.654 ppbV      99
    68) toluene                      14.13   91    626032     10.011 ppbV     100
    71) 1,3-dichloropropane          14.16   76    285823      9.437 ppbV      98
    72) 2-hexanone                   14.42   43    445557      9.073 ppbV      94
    74) dibromochloromethane         14.57  129    274931     10.727 ppbV      99
    75) 1,2-dibromoethane            14.83  107    295834     10.041 ppbV      99
    76) butyl acetate                15.07   73     68428      9.334 ppbV      94
    77) octane                       15.17   85    229411     10.001 ppbV      87
    78) tetrachloroethene            15.29  166    236619      9.975 ppbV      98
    79) 1,1,1,2-tetrachloroethane    15.91  131    203079     10.223 ppbV      97
    80) chlorobenzene                15.93  112    479608      9.866 ppbV      98
    81) ethylbenzene                 16.27   91    806342     10.201 ppbV      98
    83) m+p-xylene                   16.43   91   1310440     20.494 ppbV      97
    84) bromoform                    16.48  173    241541     10.830 ppbV      94
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154988.D
Acq On    :  2 Jan 2018  10:38 AM
Operator  : AIRLAB15:RY
Sample    : WG1078148-2,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 11:15:20 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

Sub List     : Default-LCS-AP2 - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  85) styrene                       16.73  104    522089      9.901 ppbV      98
  86) 1,1,2,2-tetrachloroethane     16.82   83    454117     10.108 ppbV      99
  87) o-xylene                      16.82   91    655224     10.228 ppbV     100
  88) 1,2,3-trichloropropane        16.93   75    360814      9.757 ppbV      97
  89) nonane                        17.02   43    600027      9.215 ppbV      93
  91) isopropylbenzene              17.32  105    839182      9.888 ppbV      97
  92) bromobenzene                  17.39   77    461167      9.672 ppbV      99
  93) 2-chlorotoluene               17.71  126    242354M3   10.026 ppbV
  94) n-propylbenzene               17.73  120    281633     10.039 ppbV      92
  95) 4-chlorotoluene               17.77  126    244401     10.091 ppbV      93
  96) 4-ethyl toluene               17.85  105    949726      9.985 ppbV      98
  97) 1,3,5-trimethylbenzene        17.92  105    755555      9.827 ppbV     100
  98) tert-butylbenzene             18.25  119    860099     11.375 ppbV      98
  99) 1,2,4-trimethylbenzene        18.25  105    817360     11.037 ppbV      93
 100) decane                        18.32   57    640028      9.783 ppbV      93
 101) Benzyl Chloride               18.37   91    538652      9.898 ppbV      99
 102) 1,3-dichlorobenzene           18.38  146    490062M3    9.819 ppbV
 103) 1,4-dichlorobenzene           18.43  146    478726      9.485 ppbV      95
 104) sec-butylbenzene              18.47  105   1090568      9.974 ppbV      99
 106) p-isopropyltoluene            18.59  119    925741     10.096 ppbV      99
 107) 1,2-dichlorobenzene           18.72  146    455022      9.737 ppbV      98
 108) n-butylbenzene                18.94   91    868617      9.869 ppbV     100
 111) 1,2-dibromo-3-chloropr...     19.09   75    190042      9.844 ppbV      95
 112) undecane                      19.36   57    714424      9.753 ppbV      95
 114) dodecane                      20.29   57    716048     10.025 ppbV      91
 115) 1,2,4-trichlorobenzene        20.24  180    358621      9.892 ppbV      99
 116) naphthalene                   20.36  128   1004155      9.830 ppbV     100
 117) 1,2,3-trichlorobenzene        20.62  180    340836      9.922 ppbV      98
 119) hexachlorobutadiene           20.69  225    293353      9.996 ppbV      95
 ---------------------------------------------------------------------------

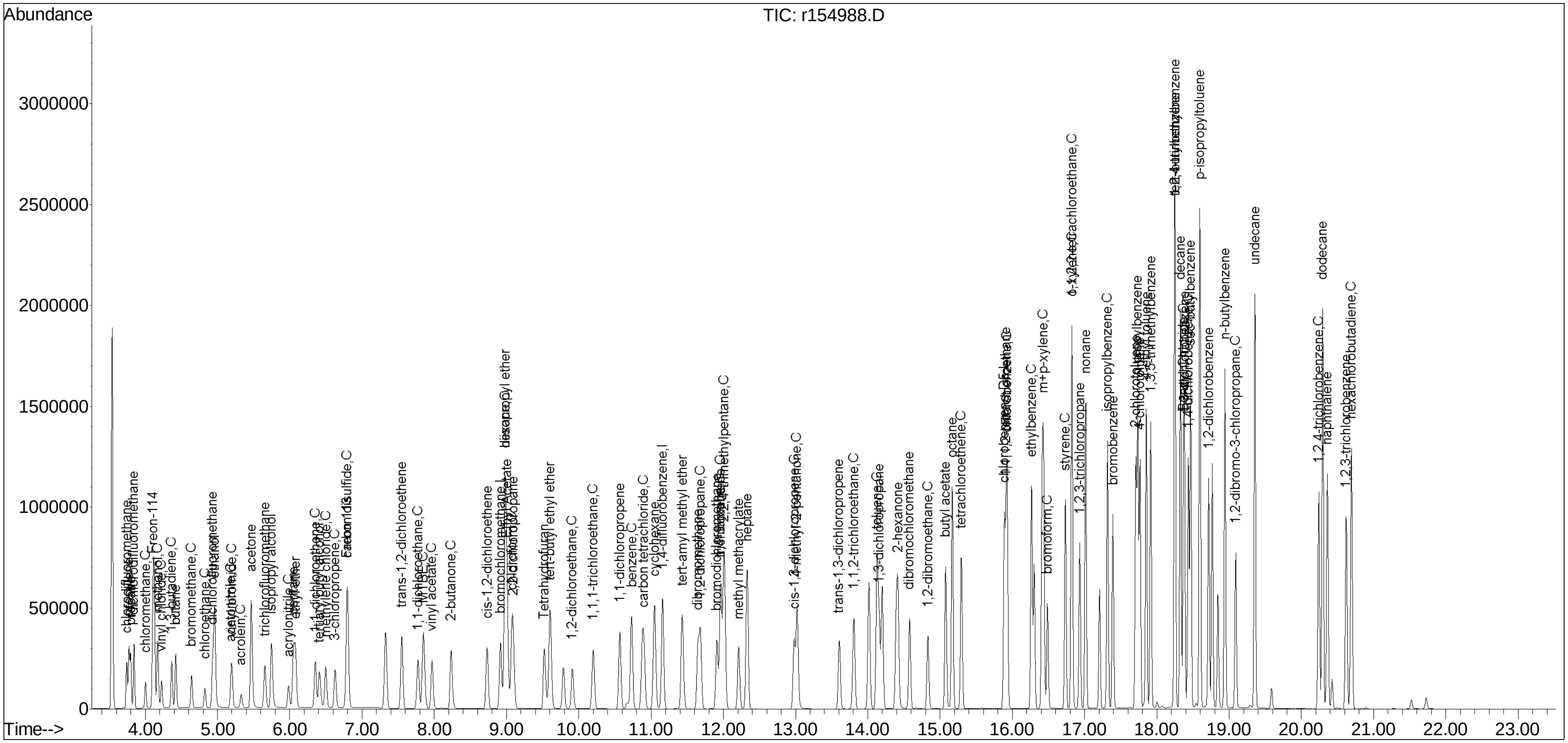
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154988.D
Acq On    :  2 Jan 2018  10:38 AM
Operator  : AIRLAB15:RY
Sample    : WG1078148-2,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 11:15:20 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

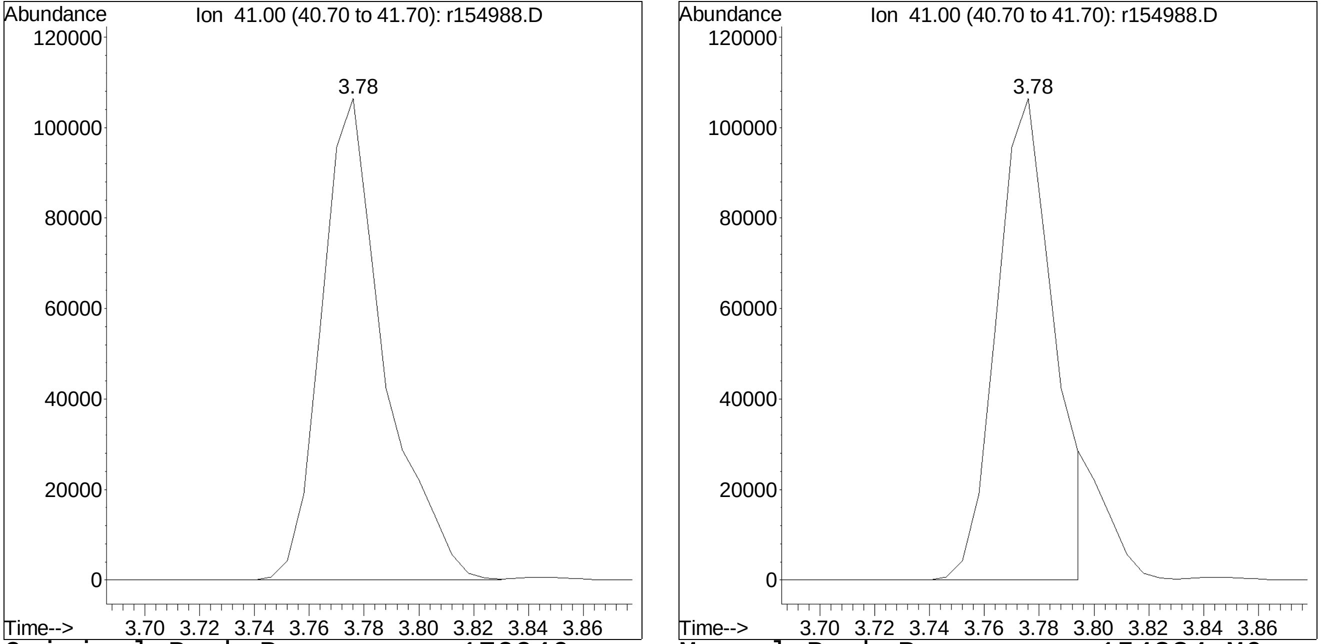
Sub List     : Default-LCS-AP2 - All compounds listed
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154988.D                   Operator    : AIRLAB15:RY
Date Inj'd  : 1/2/2018 10:38 AM           Instrument  :
Sample      : WG1078148-2,3,250,250       Quant Date  : 1/2/2018 11:11 am
```

Compound #3: propylene



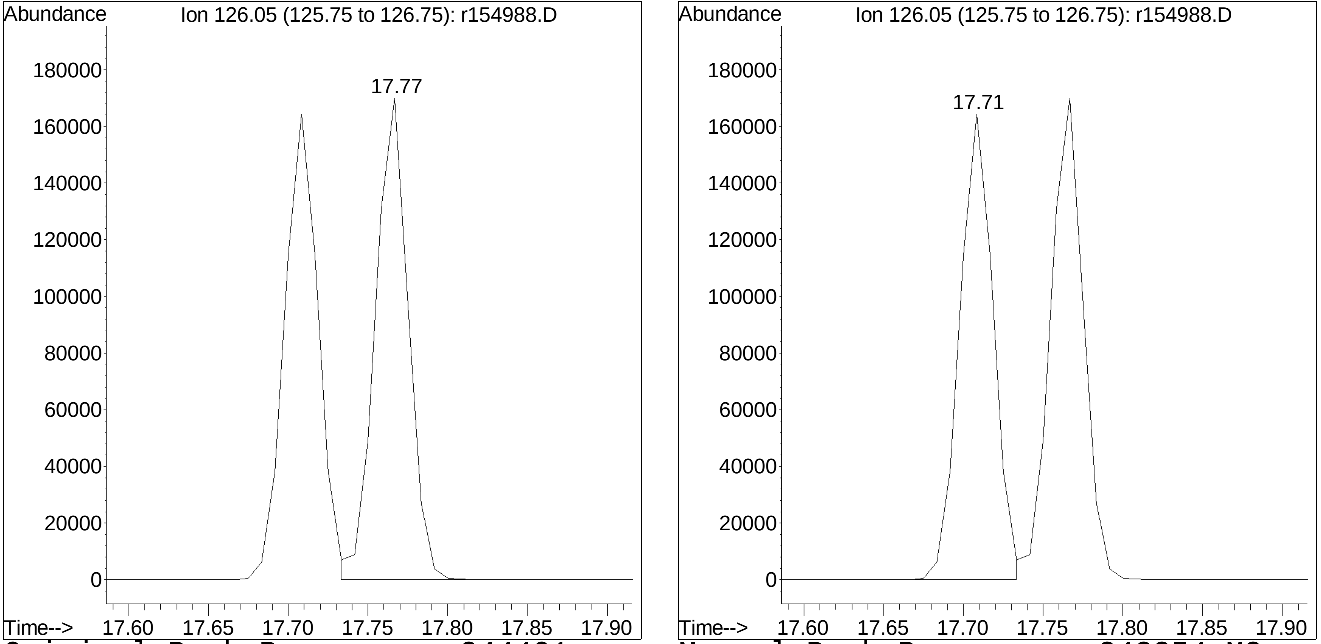
Original Peak Response = 170046   Manual Peak Response = 154234 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154988.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 1/2/2018 10:38 AM          Instrument  :
Sample      : WG1078148-2,3,250,250      Quant Date  : 1/2/2018 11:11 am
```

Compound #93: 2-chlorotoluene

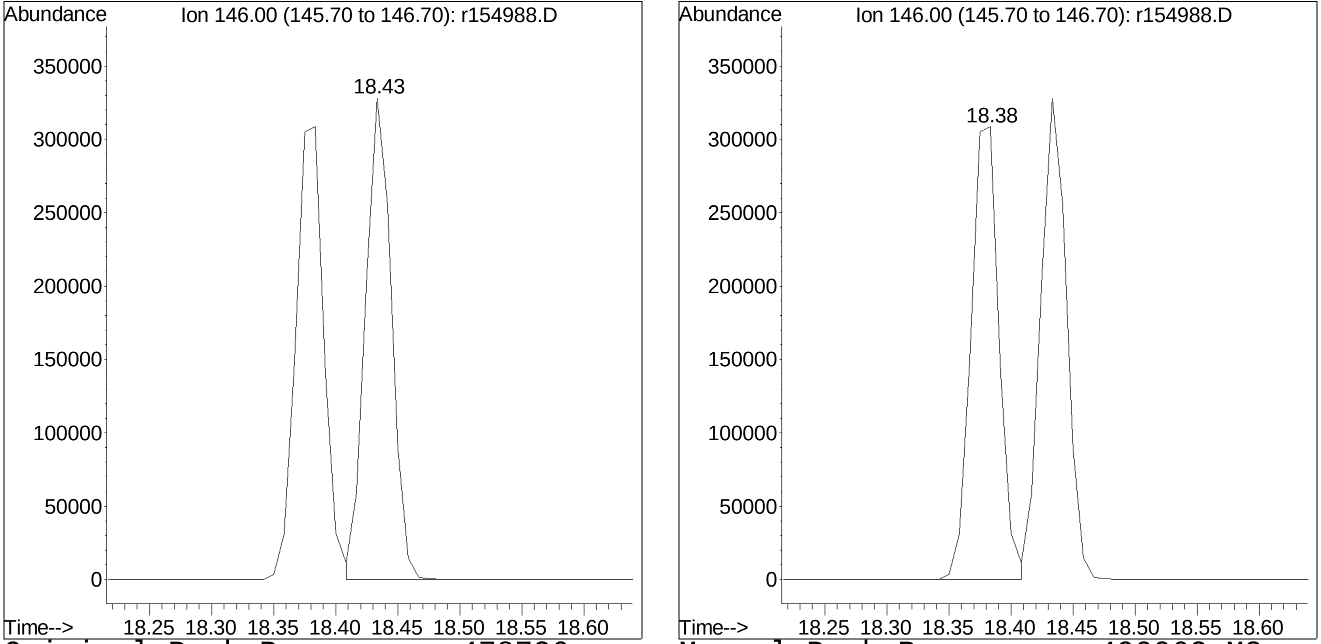


Original Peak Response = 244401   Manual Peak Response = 242354 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154988.D                  Operator    : AIRLAB15:RY
Date Inj'd  : 1/2/2018 10:38 AM          Instrument  :
Sample      : WG1078148-2,3,250,250      Quant Date  : 1/2/2018 11:11 am
```

Compound #102: 1,3-dichlorobenzene



Original Peak Response = 478726   Manual Peak Response = 490062 M3

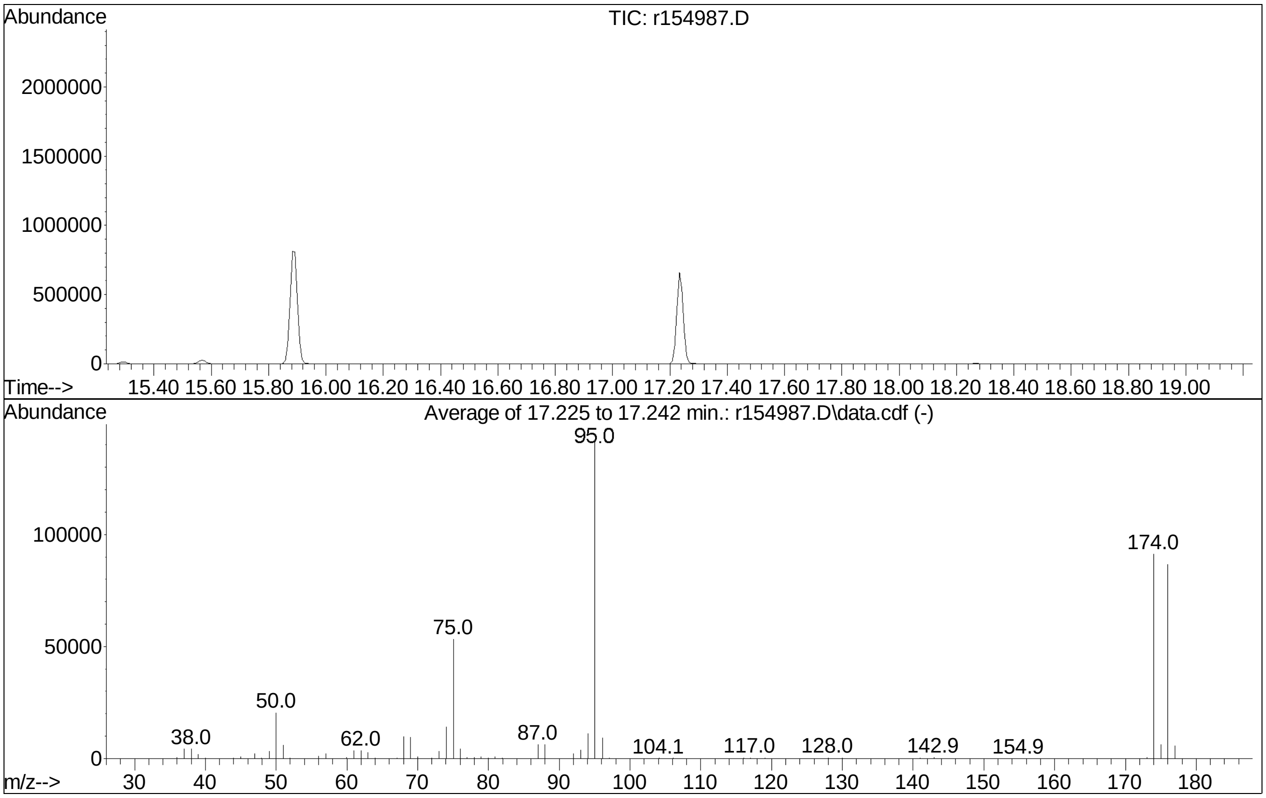
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

BFB

```
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154987.D
Acq On    :  2 Jan 2018   9:54 AM
Operator  : AIRLAB15:RY
Sample    : WG1078148-1,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Integration File: rteint.p

Method    : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Title     : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update  : Sat Dec 23 09:47:41 2017
```



```
AutoFind: Scans 2073, 2074, 2075; Background Corrected with Scan 2067

| Target | Rel. to | Lower  | Upper  |  Rel.  |    Raw    |   Result  |
|  Mass  |  Mass   | Limit% | Limit% |  Abn%  |    Abn    | Pass/Fail |
---------------------------------------------------------------------
|   50   |    95   |     8  |    40  |  14.5  |    20565  |   PASS    |
|   75   |    95   |    30  |    66  |  37.4  |    53249  |   PASS    |
|   95   |    95   |   100  |   100  | 100.0  |   142241  |   PASS    |
|   96   |    95   |     5  |     9  |   6.6  |     9365  |   PASS    |
|  173   |   174   |  0.00  |     2  |   0.5  |      458  |   PASS    |
|  174   |    95   |    50  |   120  |  64.2  |    91314  |   PASS    |
|  175   |   174   |     4  |     9  |   7.0  |     6388  |   PASS    |
|  176   |   174   |    93  |   101  |  94.8  |    86580  |   PASS    |
|  177   |   176   |     5  |     9  |   6.7  |     5816  |   PASS    |
---------------------------------------------------------------------
```

Volatiles Raw QC Data

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154992.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-4,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 16:50:21 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : Default-LCS-AP2 - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.92   49   211944    10.000 ppbV     0.00
     Standard Area  =       220148               Recovery   =   96.27%
    43) 1,4-difluorobenzene         11.16  114   550912    10.000 ppbV     0.00
     Standard Area  =       557225               Recovery   =   98.87%
    67) chlorobenzene-D5            15.89   54    94691    10.000 ppbV     0.00
     Standard Area  =        97822               Recovery   =   96.80%

   System Monitoring Compounds

   Target Compounds                                                   Qvalue
     3) propylene                    3.78                0       N.D.
     5) dichlorodifluoromethane      0.00                0       N.D.
     6) chloromethane                0.00                0       N.D.
     7) Freon-114                    0.00                0       N.D.
     9) vinyl chloride               0.00                0       N.D.
    10) 1,3-butadiene                4.53                0       N.D.
    13) bromomethane                 0.00                0       N.D.
    14) chloroethane                 0.00                0       N.D.
    15) ethanol                      4.98                0       N.D.
    17) vinyl bromide                0.00                0       N.D.
    19) acetone                      5.52   43      1107M3    0.075 ppbV
    21) trichlorofluoromethane       0.00                0       N.D.
    22) isopropyl alcohol            5.79   45      2783      0.129 ppbV #    88
    26) 1,1-dichloroethene           0.00                0       N.D.
    27) tertiary butyl alcohol       0.00                0       N.D.
    28) methylene chloride           0.00                0       N.D.
    29) 3-chloropropene              0.00                0       N.D.
    30) carbon disulfide             6.79                0       N.D.
    31) Freon 113                    0.00                0       N.D.
    32) trans-1,2-dichloroethene     0.00                0       N.D.
    33) 1,1-dichloroethane           0.00                0       N.D.
    34) MTBE                         0.00                0       N.D.
    35) vinyl acetate                7.99                0       N.D.
    36) 2-butanone                   8.28                0       N.D.
    37) cis-1,2-dichloroethene       0.00                0       N.D.
    38) Ethyl Acetate                0.00                0       N.D.
    39) chloroform                   0.00                0       N.D.
```

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154992.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-4,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 16:50:21 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : Default-LCS-AP2 - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    40) Tetrahydrofuran              0.00              0       N.D.
    42) 1,2-dichloroethane           0.00              0       N.D.
    44) hexane                       0.00              0       N.D.
    48) 1,1,1-trichloroethane        0.00              0       N.D.
    50) benzene                     10.73              0       N.D.
    52) carbon tetrachloride         0.00              0       N.D.
    53) cyclohexane                  0.00              0       N.D. d
    56) 1,2-dichloropropane          0.00              0       N.D.
    57) bromodichloromethane         0.00              0       N.D.
    58) 1,4-dioxane                  0.00              0       N.D.
    59) trichloroethene              0.00              0       N.D.
    60) 2,2,4-trimethylpentane       0.00              0       N.D.
    62) heptane                      0.00              0       N.D.
    63) cis-1,3-dichloropropene      0.00              0       N.D.
    64) 4-methyl-2-pentanone        13.07              0       N.D.
    65) trans-1,3-dichloropropene    0.00              0       N.D.
    66) 1,1,2-trichloroethane        0.00              0       N.D.
    68) toluene                      0.00              0       N.D.
    72) 2-hexanone                   0.00              0       N.D.
    74) dibromochloromethane         0.00              0       N.D.
    75) 1,2-dibromoethane            0.00              0       N.D.
    78) tetrachloroethene            0.00              0       N.D.
    80) chlorobenzene                0.00              0       N.D.
    81) ethylbenzene                 0.00              0       N.D.
    83) m+p-xylene                   0.00              0       N.D.
    84) bromoform                    0.00              0       N.D.
    85) styrene                      0.00              0       N.D.
    86) 1,1,2,2-tetrachloroethane    0.00              0       N.D.
    87) o-xylene                     0.00              0       N.D.
    96) 4-ethyl toluene              0.00              0       N.D.
    97) 1,3,5-trimethylbenzene       0.00              0       N.D.
    99) 1,2,4-trimethylbenzene       0.00              0       N.D.
   101) Benzyl Chloride              0.00              0       N.D.
   102) 1,3-dichlorobenzene         18.44              0       N.D.
   103) 1,4-dichlorobenzene         18.44              0       N.D.
   107) 1,2-dichlorobenzene          0.00              0       N.D.
   115) 1,2,4-trichlorobenzene       0.00              0       N.D.
   119) hexachlorobutadiene          0.00              0       N.D.

TALL171222.M Wed Jan 03 11:19:34 2018                               Page: 2
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                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154992.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-4,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 16:50:21 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : Default-LCS-AP2 - All compounds listed

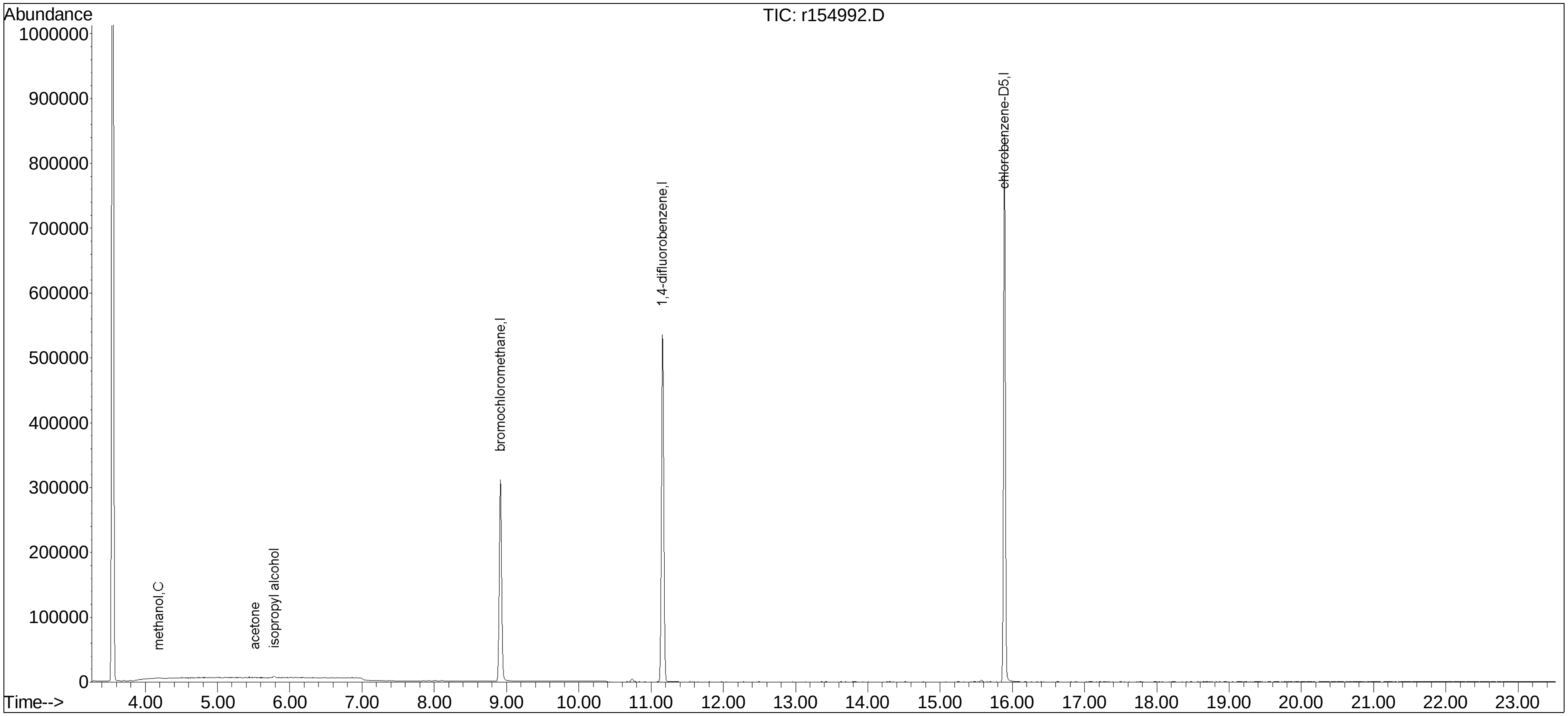
          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   --------------------------------------------------------------------------
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                     Quantitation Report    (QT Reviewed)

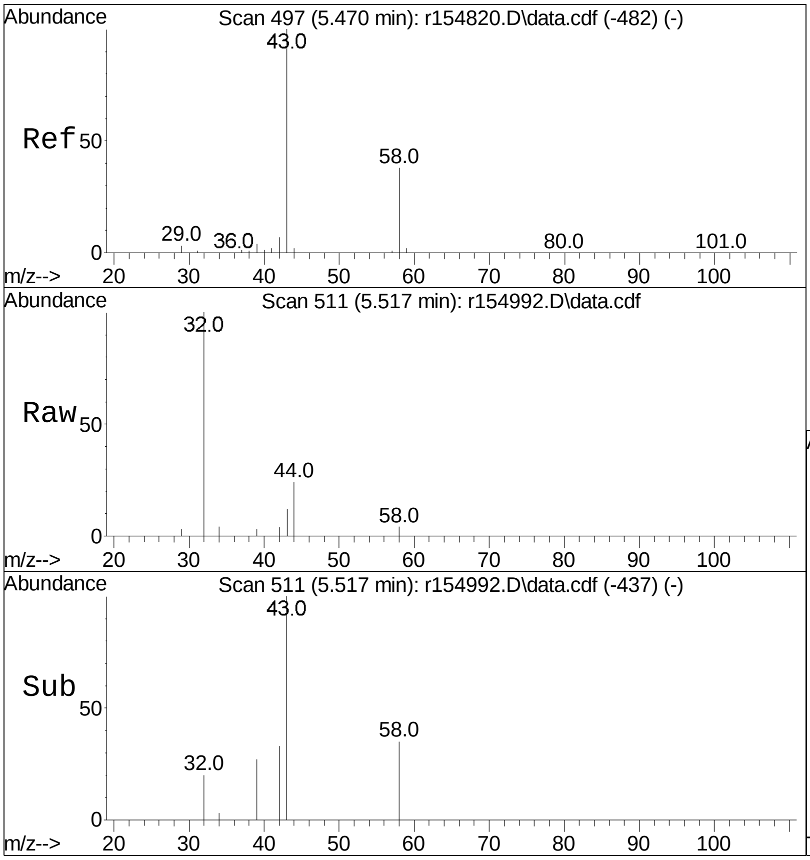
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154992.D
Acq On    :  2 Jan 2018   3:23 PM
Operator  : AIRLAB15:RY
Sample    : WG1078148-4,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 16:50:21 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

Sub List     : Default-LCS-AP2 - All compounds listedT\r154988.D
```

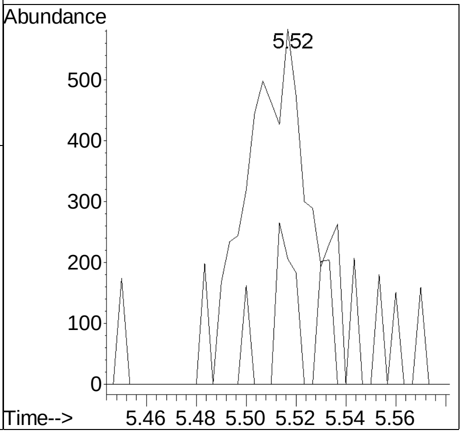


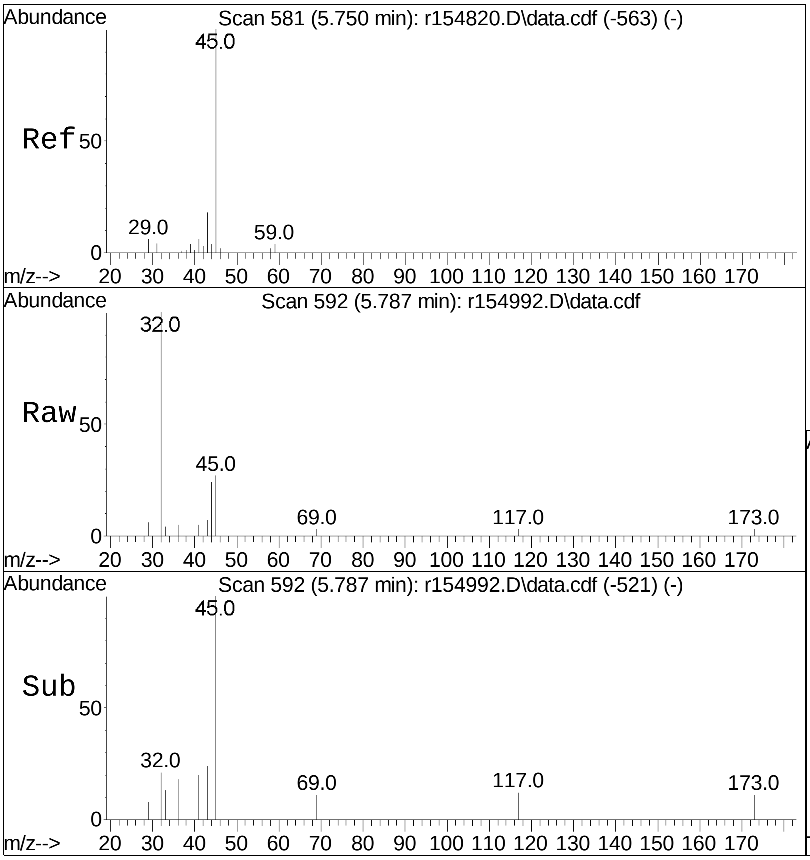
```
TALL171222.M Wed Jan 03 11:19:34 2018
```



```
#19
acetone
Concen:    0.07 ppbV m
RT:    5.52 min  Scan# 511
Delta R.T.  0.047 min
Lab File:   r154992.D
Acq:  2 Jan 2018   3:23 PM

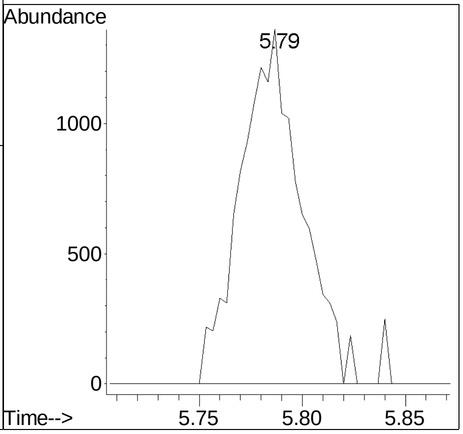
Tgt Ion: 43 Resp:    1107
Ion  Ratio  Lower  Upper
 43  100
 58   35.3   30.1   45.1
 57    0.0    0.8    1.2#
```





```
#22
isopropyl alcohol
Concen:    0.13 ppbV
RT:    5.79 min  Scan# 592
Delta R.T.  0.037 min
Lab File:   r154992.D
Acq:  2 Jan 2018   3:23 PM

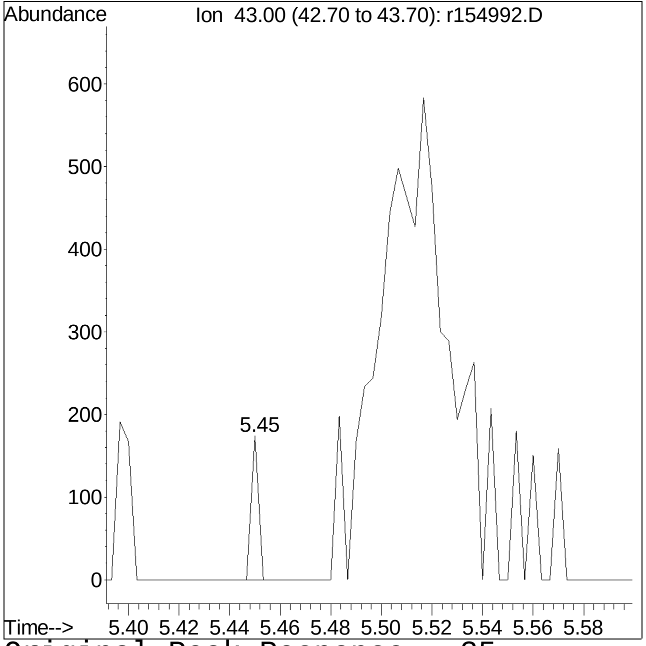
Tgt Ion: 45 Resp:    2783
Ion  Ratio  Lower  Upper
 45  100
 59    0.0    3.0    4.6#
```

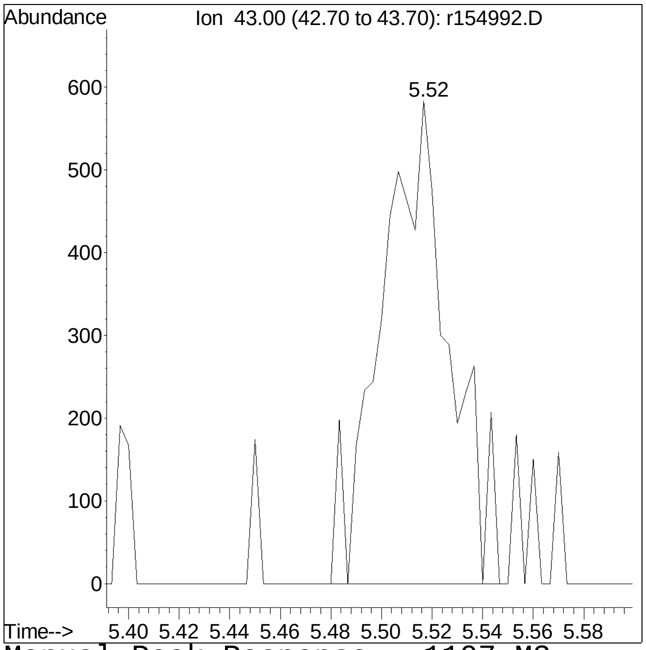


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154992.D                   Operator    : AIRLAB15:RY
Date Inj'd  : 1/2/2018  3:23 PM           Instrument  :
Sample      : WG1078148-4,3,250,250       Quant Date  : 1/2/2018  4:49 pm
```

Compound #19: acetone





Original Peak Response = 35   Manual Peak Response = 1107 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

```
                                  LSC Area Percent Report

   Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
   Data File : r154992.D
   Acq On    :  2 Jan 2018   3:23 PM
   Operator  : AIRLAB15:RY
   Sample    : WG1078148-4,3,250,250
   Misc      : WG1078148,ICAL14299
   ALS Vial  : 0   Sample Multiplier: 1

   Integration Parameters: rteint.p
   Integrator: RTE
   Smoothing : OFF                              Filtering: 5
   Sampling  : 1                                 Min Area: 1 % of largest Peak
   Start Thrs: 0.2                              Max Peaks: 100
   Stop Thrs : 0                            Peak Location: TOP

   If leading or trailing edge < 100 prefer < Baseline drop else tangent >
   Peak separation: 5

   Method    : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
   Title     : TO-14A/TO-15 SIM/Full Scan Analysis

   Signal     : TIC: r154992.D

  peak  R.T. first  max last  PK   peak      corr.   corr.    % of
    #   min   scan scan scan  TY  height     area    % max.   total
  ---  ----- ----- ---- ---- ---  -------   -------  ------  -------
   1   8.917  1075 1082 1093 rBV   310839    702152  48.53%  21.143%
   2  11.158  1342 1349 1360 rBV   535597   1172104  81.02%  35.294%
   3  15.892  1907 1913 1935 rBV   844201   1446750 100.00%  43.564%

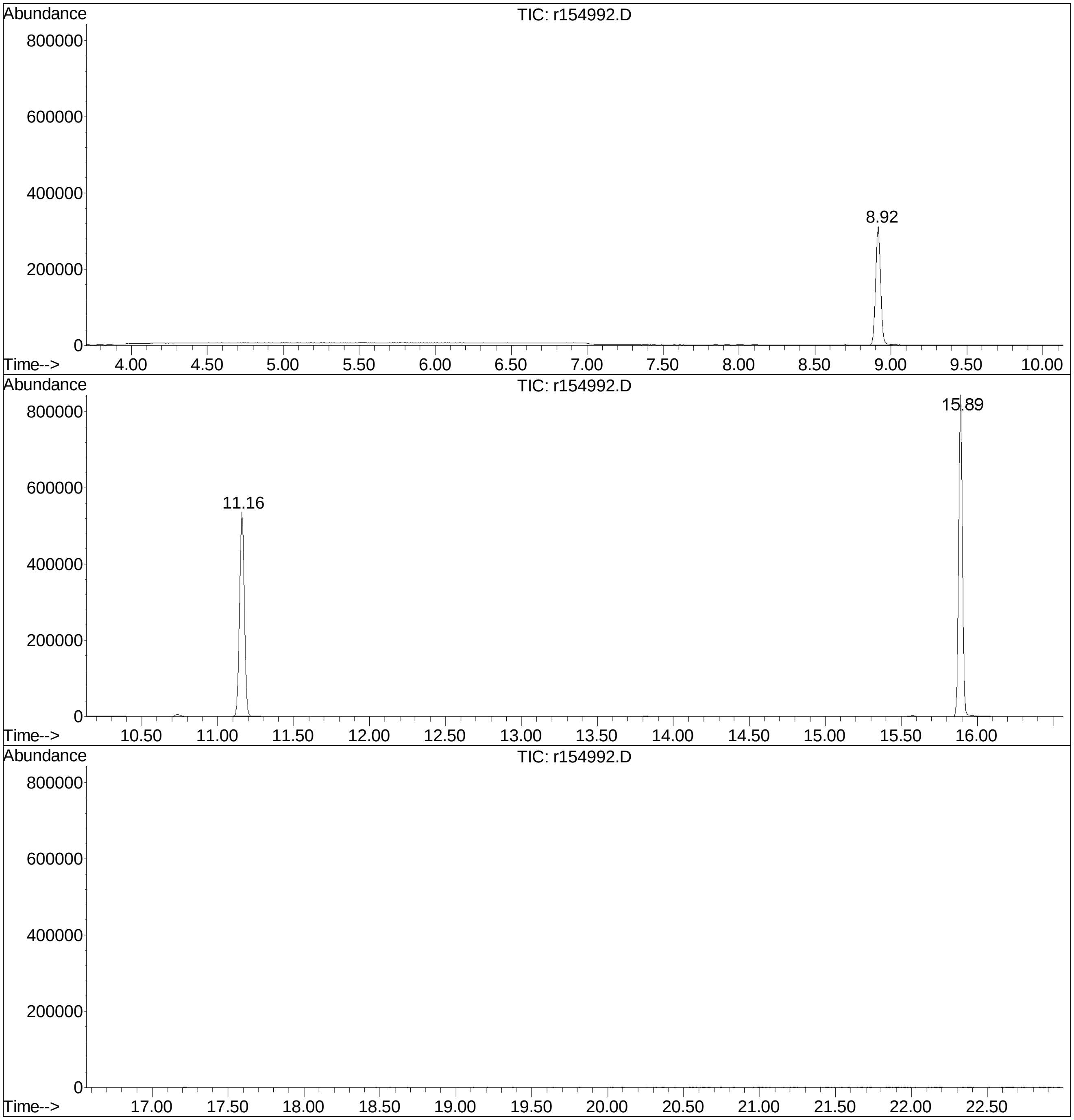

                      Sum of corrected areas:     3321006
```

LSC Report - Integrated Chromatogram

```
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154992.D
Acq On    :  2 Jan 2018   3:23 PM
Operator  : AIRLAB15:RY
Sample    : WG1078148-4,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis

TIC Library   : O:\Organics\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P
```



```
                        Library Search Compound Report

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154992.D
Acq On    :  2 Jan 2018   3:23 PM
Operator  : AIRLAB15:RY
Sample    : WG1078148-4,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis

TIC Library   : O:\Organics\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P









No Library Search Compounds Detected
**********************************************************************
```

```
                 Tentatively Identified Compound (LSC) summary

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154992.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-4,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis

  TIC Library   : O:\Organics\DATABASE\NIST02.L
  TIC Integration Parameters: LSCINT.P

                                                    |--Internal Standard---|
  TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
----------------------------------------------------------------------------
```

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154989.D
  Acq On    :  2 Jan 2018  11:33 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-3,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 12:28:16 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                        Amount  Calc.     %Dev Area% Dev(min)
  ----------------------------------------------------------------------------
  1 I    bromochloromethane              10.000  10.000      0.0   86   0.00
  2      chlorodifluoromethane           10.000   8.500     15.0   72   0.00
  3      propylene                       10.000   9.939      0.6   85   0.00
  4      propane                         10.000   7.565     24.3   66   0.00
  5      dichlorodifluoromethane         10.000   9.992      0.1   84   0.00
  6 C    chloromethane                   10.000   8.834     11.7   74   0.00
  7      Freon-114                       10.000   9.542      4.6   79   0.00
  8 C    methanol                        50.000  37.970     24.1   63   0.00
  9 C    vinyl chloride                  10.000   9.692      3.1   81   0.00
 10 C    1,3-butadiene                   10.000   9.260      7.4   78   0.00
 11      butane                          10.000   8.998     10.0   80   0.00
 13 C    bromomethane                    10.000   9.741      2.6   82   0.00
 14 C    chloroethane                    10.000   9.256      7.4   79   0.00
 15      ethanol                         50.000  41.545     16.9   66   0.00
 16      dichlorofluoromethane           10.000   8.995     10.1   75   0.00
 17 C    vinyl bromide                   10.000   9.611      3.9   79   0.00
 18 C    acrolein                        10.000   7.958     20.4   67   0.00
 19      acetone                         50.000  46.790      6.4   88   0.00
 20 C    acetonitrile                    10.000   8.324     16.8   71   0.00
 21      trichlorofluoromethane          10.000  10.382     -3.8   86   0.00
 22      isopropyl alcohol               25.000  22.145     11.4   85   0.00
 23 C    acrylonitrile                   10.000   7.986     20.1   68   0.00
 24      pentane                         10.000   8.450     15.5   70   0.00
 25      ethyl ether                     10.000   7.529     24.7   63   0.00
 26 C    1,1-dichloroethene              10.000   9.646      3.5   81   0.00
 27      tertiary butyl alcohol          10.000   8.187     18.1   68   0.00
 28 C    methylene chloride              10.000   8.926     10.7   73   0.00
 29 C    3-chloropropene                 10.000   9.518      4.8   81   0.00
 30 C    carbon disulfide                10.000   8.719     12.8   71   0.00
 31      Freon 113                       10.000   9.997      0.0   84   0.00
 32      trans-1,2-dichloroethene        10.000  10.476     -4.8   85   0.00
 33 C    1,1-dichloroethane              10.000  10.445     -4.5   86   0.00
 34 C    MTBE                            10.000   9.526      4.7   78   0.00
 35 C    vinyl acetate                   10.000  10.697     -7.0   86   0.00
 36 C    2-butanone                      10.000   9.728      2.7   80   0.00
 37      cis-1,2-dichloroethene          10.000  11.059    -10.6   90   0.00
 38      Ethyl Acetate                   10.000  10.792     -7.9   89   0.00
 39 C    chloroform                      10.000  10.938     -9.4   92   0.00
 40      Tetrahydrofuran                 10.000   9.758      2.4   78   0.00
```

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154989.D
  Acq On    :  2 Jan 2018  11:33 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-3,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 12:28:16 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      Amount  Calc.     %Dev Area% Dev(min)
  ---------------------------------------------------------------------------
 41      2,2-dichloropropane           10.000   9.427       5.7   78   0.00
 42 C    1,2-dichloroethane            10.000  10.914      -9.1   90   0.00

 43 I    1,4-difluorobenzene           10.000  10.000       0.0   95   0.02
 44 C    hexane                        10.000   9.544       4.6   87   0.00
 45      diisopropyl ether             10.000   8.786      12.1   80   0.00
 46      tert-butyl ethyl ether        10.000   8.262      17.4   74   0.00
 48 C    1,1,1-trichloroethane         10.000  10.182      -1.8   92   0.00
 49      1,1-dichloropropene           10.000   8.974      10.3   82   0.00
 50 C    benzene                       10.000   9.041       9.6   84   0.00
 52 C    carbon tetrachloride          10.000  10.523      -5.2   94   0.00
 53      cyclohexane                   10.000   9.591       4.1   88   0.00
 54      tert-amyl methyl ether        10.000   8.019      19.8   72   0.00
 55      dibromomethane                10.000   9.175       8.2   84   0.00
 56 C    1,2-dichloropropane           10.000   9.603       4.0   87   0.00
 57      bromodichloromethane          10.000  10.258      -2.6   91   0.02
 58 C    1,4-dioxane                   10.000   9.918       0.8   91   0.00
 59 C    trichloroethene               10.000   9.886       1.1   90   0.02
 60 C    2,2,4-trimethylpentane        10.000   9.765       2.3   88   0.02
 61      methyl methacrylate           10.000  10.223      -2.2   99   0.02
 62      heptane                       10.000   9.062       9.4   81   0.02
 63 C    cis-1,3-dichloropropene       10.000   9.760       2.4   87   0.02
 64 C    4-methyl-2-pentanone          10.000   9.146       8.5   81   0.02
 65      trans-1,3-dichloropropene     10.000   8.387      16.1   75   0.00
 66 C    1,1,2-trichloroethane         10.000   9.960       0.4   91   0.00

 67 I    chlorobenzene-D5              10.000  10.000       0.0   89   0.00
 68 C    toluene                       10.000  10.356      -3.6   89   0.02
 71      1,3-dichloropropane           10.000   8.983      10.2   79   0.00
 72      2-hexanone                    10.000   9.349       6.5   78   0.00
 74      dibromochloromethane          10.000  11.321     -13.2   93   0.00
 75 C    1,2-dibromoethane             10.000  10.128      -1.3   87   0.00
 76      butyl acetate                 10.000   8.935      10.6   74   0.00
 77      octane                        10.000   9.489       5.1   82   0.00
 78 C    tetrachloroethene             10.000  10.701      -7.0   93   0.00
 79      1,1,1,2-tetrachloroethane     10.000   9.829       1.7   83   0.00
 80 C    chlorobenzene                 10.000  10.363      -3.6   89   0.00
 81 C    ethylbenzene                  10.000  10.533      -5.3   90   0.00
 83 C    m+p-xylene                    20.000  21.247      -6.2   90   0.00
```

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154989.D
  Acq On    :  2 Jan 2018  11:33 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-3,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 12:28:16 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                          Amount  Calc.     %Dev Area% Dev(min)
  ------------------------------------------------------------------------------
 84 C    bromoform                         10.000  11.436     -14.4   93   0.00
 85 C    styrene                           10.000  10.426      -4.3   88   0.00
 86 C    1,1,2,2-tetrachloroethane         10.000  10.842      -8.4   91   0.00
 87 C    o-xylene                          10.000  10.813      -8.1   91   0.00
 88      1,2,3-trichloropropane            10.000   9.401       6.0   80   0.00
 89      nonane                            10.000   8.841      11.6   74   0.00
 91 C    isopropylbenzene                  10.000   9.945       0.5   85   0.00
 92      bromobenzene                      10.000   9.422       5.8   81   0.00
 93      2-chlorotoluene                   10.000   9.576       4.2   82   0.00
 94      n-propylbenzene                   10.000   9.707       2.9   83   0.00
 95      4-chlorotoluene                   10.000   9.693       3.1   83   0.00
 96      4-ethyl toluene                   10.000  10.188      -1.9   85   0.00
 97      1,3,5-trimethylbenzene            10.000  10.393      -3.9   87   0.00
 98      tert-butylbenzene                 10.000   9.983       0.2   81   0.00
 99      1,2,4-trimethylbenzene            10.000  10.818      -8.2   88   0.00
100      decane                            10.000   9.650       3.5   80   0.00
101 C    Benzyl Chloride                   10.000  10.794      -7.9   83   0.00
102      1,3-dichlorobenzene               10.000  10.555      -5.5   90   0.00
103 C    1,4-dichlorobenzene               10.000  10.387      -3.9   88   0.00
104      sec-butylbenzene                  10.000   9.674       3.3   81   0.00
106      p-isopropyltoluene                10.000   9.252       7.5   75   0.00
107      1,2-dichlorobenzene               10.000  10.730      -7.3   94   0.00
108      n-butylbenzene                    10.000  10.074      -0.7   85   0.00
111 C    1,2-dibromo-3-chloropropane       10.000  10.054      -0.5   81   0.00
112      undecane                          10.000   9.963       0.4   81   0.00
114      dodecane                          10.000  10.601      -6.0   78   0.00
115 C    1,2,4-trichlorobenzene            10.000  11.278     -12.8   90   0.00
116      naphthalene                       10.000  10.259      -2.6   81   0.00
117      1,2,3-trichlorobenzene            10.000  10.575      -5.7   85   0.00
119 C    hexachlorobutadiene               10.000  11.461     -14.6   92   0.00
 -------------------------------------------------------------------------------
          * Evaluation of CC level amount vs concentration.
    (#) = Out of Range              SPCC's out = 0  CCC's out = 0
```

```
                              Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154989.D
  Acq On    :  2 Jan 2018  11:33 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-3,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 12:28:16 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : Default-LCS-AP2 - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane             8.93   49   218683    10.000 ppbV     0.00
     Standard Area  =       220148                 Recovery   =   99.33%
    43) 1,4-difluorobenzene           11.17  114   559797    10.000 ppbV     0.02
     Standard Area  =       557225                 Recovery   =  100.46%
    67) chlorobenzene-D5              15.89   54    96791    10.000 ppbV     0.00
     Standard Area  =        97822                 Recovery   =   98.95%

   System Monitoring Compounds

   Target Compounds                                                   Qvalue
     3) propylene                      3.78   41    153753M6    9.939 ppbV
     5) dichlorodifluoromethane        3.85   85    235565      9.992 ppbV      100
     6) chloromethane                  4.00   50    118642      8.834 ppbV       99
     7) Freon-114                      4.11   85    276484      9.542 ppbV       94
     9) vinyl chloride                 4.23   62    122477      9.692 ppbV      100
    10) 1,3-butadiene                  4.37   54    109129      9.260 ppbV       95
    13) bromomethane                   4.65   94    105500      9.741 ppbV      100
    14) chloroethane                   4.83   64     58969      9.256 ppbV       98
    15) ethanol                        4.96   31    401471     41.545 ppbV       95
    17) vinyl bromide                  5.20  106    112351      9.611 ppbV       99
    19) acetone                        5.47   43    717312     46.790 ppbV       98
    21) trichlorofluoromethane         5.66  101    188565     10.382 ppbV       99
    22) isopropyl alcohol              5.75   45    491676     22.145 ppbV      100
    26) 1,1-dichloroethene             6.36   61    157840      9.646 ppbV       99
    27) tertiary butyl alcohol         6.41   59    171658      8.187 ppbV       93
    28) methylene chloride             6.50   49    143640      8.926 ppbV       96
    29) 3-chloropropene                6.63   41    184719      9.518 ppbV       98
    30) carbon disulfide               6.80   76    340742      8.719 ppbV       99
    31) Freon 113                      6.80  101    220890      9.997 ppbV       95
    32) trans-1,2-dichloroethene       7.55   61    243545     10.476 ppbV       99
    33) 1,1-dichloroethane             7.78   63    293871     10.445 ppbV      100
    34) MTBE                           7.85   73    371336      9.526 ppbV       98
    35) vinyl acetate                  7.97   43    458374     10.697 ppbV       98
    36) 2-butanone                     8.23   43    401470      9.728 ppbV       98
    37) cis-1,2-dichloroethene         8.73   61    221720     11.059 ppbV       97
    38) Ethyl Acetate                  9.02   61     63705     10.792 ppbV       71
    39) chloroform                     9.07   83    265210     10.938 ppbV       96
```

```
                        Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154989.D
  Acq On    :  2 Jan 2018  11:33 AM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-3,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 12:28:16 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : Default-LCS-AP2 - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    40) Tetrahydrofuran               9.53   42    250961M6    9.758 ppbV
    42) 1,2-dichloroethane            9.92   62    171061     10.914 ppbV      97
    44) hexane                        8.98   57    293726      9.544 ppbV #    69
    48) 1,1,1-trichloroethane        10.20   97    231272     10.182 ppbV     100
    50) benzene                      10.73   78    513718      9.041 ppbV     100
    52) carbon tetrachloride         10.91  117    205353     10.523 ppbV      96
    53) cyclohexane                  11.05   56    317501      9.591 ppbV      97
    56) 1,2-dichloropropane          11.68   63    203374      9.603 ppbV      99
    57) bromodichloromethane         11.92   83    294577     10.258 ppbV      99
    58) 1,4-dioxane                  11.96   88    134319      9.918 ppbV      96
    59) trichloroethene              11.97  130    212190      9.886 ppbV      96
    60) 2,2,4-trimethylpentane       12.02   57   1000773      9.765 ppbV      98
    62) heptane                      12.33   43    430113      9.062 ppbV      96
    63) cis-1,3-dichloropropene      12.98   75    268618      9.760 ppbV     100
    64) 4-methyl-2-pentanone         13.03   43    497752      9.146 ppbV      96
    65) trans-1,3-dichloropropene    13.61   75    214245      8.387 ppbV      97
    66) 1,1,2-trichloroethane        13.81   97    208308      9.960 ppbV     100
    68) toluene                      14.13   91    640829     10.356 ppbV     100
    72) 2-hexanone                   14.42   43    454255      9.349 ppbV      93
    74) dibromochloromethane         14.58  129    287097     11.321 ppbV      99
    75) 1,2-dibromoethane            14.83  107    295266     10.128 ppbV      98
    78) tetrachloroethene            15.30  166    251183     10.701 ppbV      98
    80) chlorobenzene                15.93  112    498492     10.363 ppbV      99
    81) ethylbenzene                 16.27   91    823824     10.533 ppbV      98
    83) m+p-xylene                   16.43   91   1344236     21.247 ppbV      96
    84) bromoform                    16.49  173    252353     11.436 ppbV      95
    85) styrene                      16.75  104    543947     10.426 ppbV      99
    86) 1,1,2,2-tetrachloroethane    16.84   83    481982     10.842 ppbV      99
    87) o-xylene                     16.84   91    685421     10.813 ppbV     100
    96) 4-ethyl toluene              17.91  105    958874     10.188 ppbV      98
    97) 1,3,5-trimethylbenzene       17.97  105    790636     10.393 ppbV     100
    99) 1,2,4-trimethylbenzene       18.32  105    792718     10.818 ppbV      98
   101) Benzyl Chloride              18.43   91    581247     10.794 ppbV      99
   102) 1,3-dichlorobenzene          18.45  146    521251     10.555 ppbV      97
   103) 1,4-dichlorobenzene          18.51  146    518708     10.387 ppbV      97
   107) 1,2-dichlorobenzene          18.79  146    496151     10.730 ppbV      92
   115) 1,2,4-trichlorobenzene       20.37  180    404561     11.278 ppbV      99
   119) hexachlorobutadiene          20.81  225    332772     11.461 ppbV      99
```

```
                         Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154989.D
Acq On    :  2 Jan 2018  11:33 AM
Operator  : AIRLAB15:RY
Sample    : WG1078148-3,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 12:28:16 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
Sub List     : Default-LCS-AP2 - All compounds listed

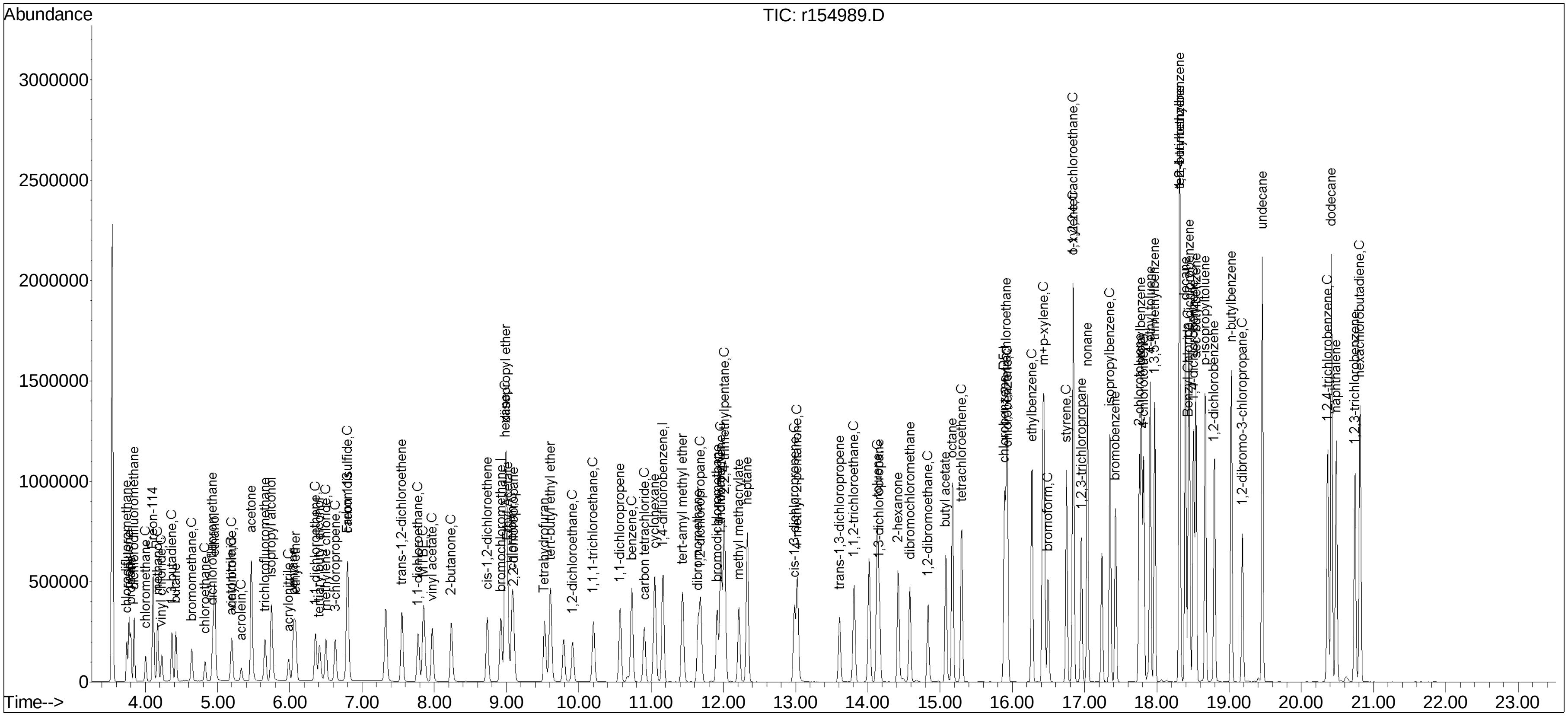
        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
 --------------------------------------------------------------------------
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

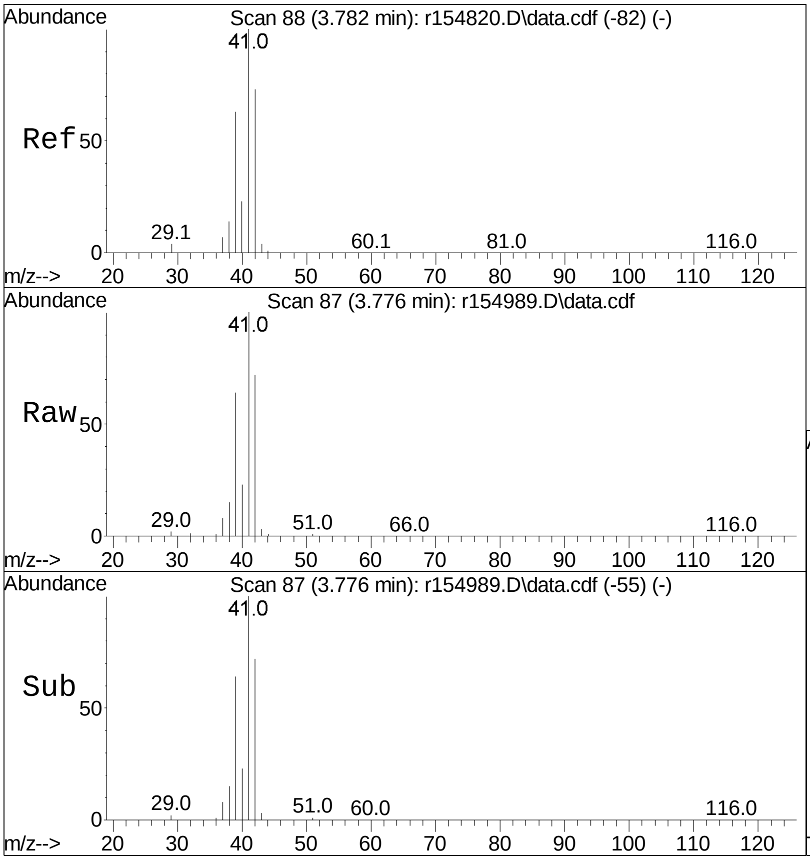
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154989.D
Acq On    :  2 Jan 2018  11:33 AM
Operator  : AIRLAB15:RY
Sample    : WG1078148-3,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 12:28:16 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

Sub List     : Default-LCS-AP2 - All compounds listedT\r154988.D
```

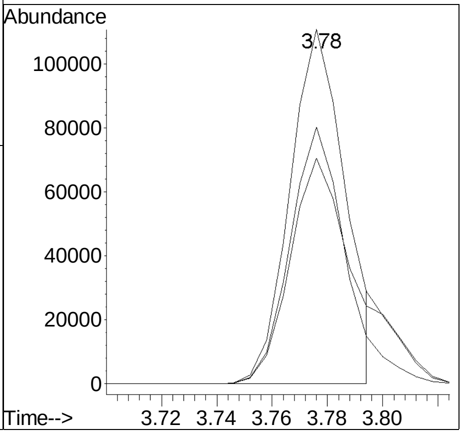


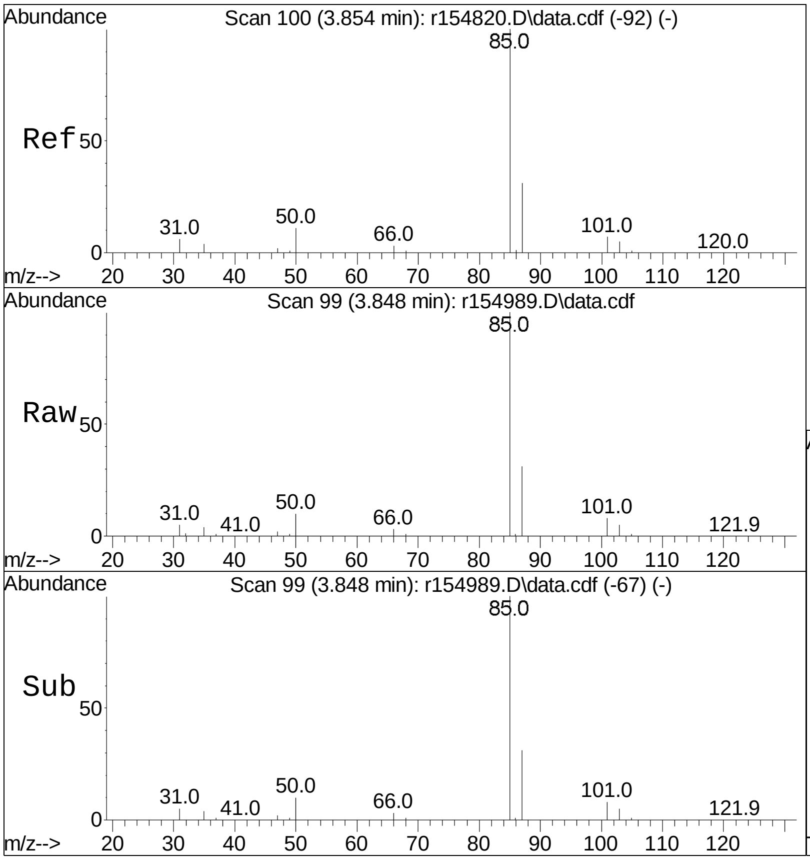
```
TALL171222.M Wed Jan 03 11:19:00 2018
```



```
#3
propylene
Concen:    9.94 ppbV m
RT:    3.78 min  Scan# 87
Delta R.T.  -0.006 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

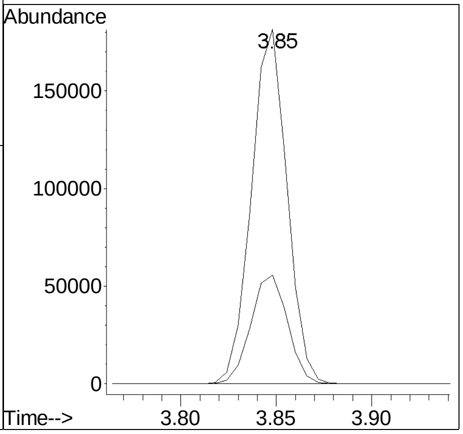
Tgt Ion: 41 Resp:  153753
Ion  Ratio  Lower  Upper
 41  100
 42   72.4   58.2   87.4
 39   63.6   50.0   75.0
```

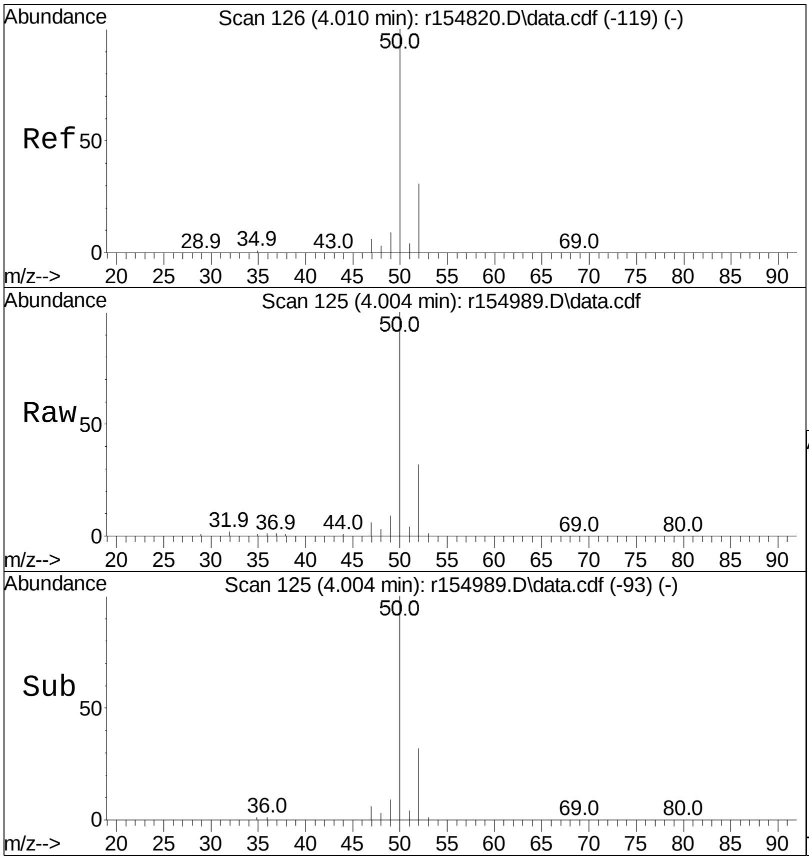




```
#5
dichlorodifluoromethane
Concen:    9.99 ppbV
RT:    3.85 min  Scan# 99
Delta R.T.  -0.006 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

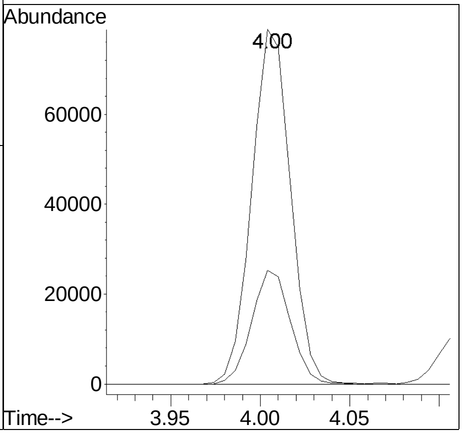
Tgt Ion: 85 Resp:  235565
Ion  Ratio  Lower  Upper
 85  100
 87   30.7   24.5   36.7
```

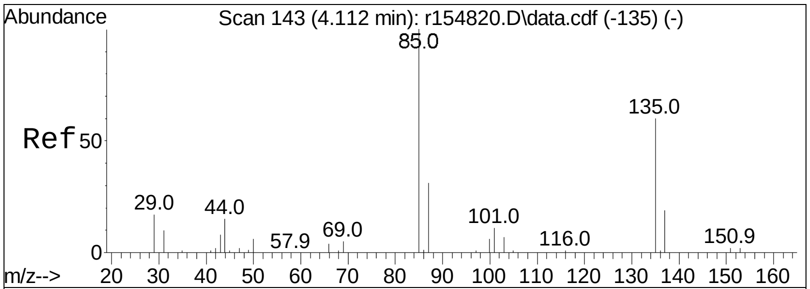


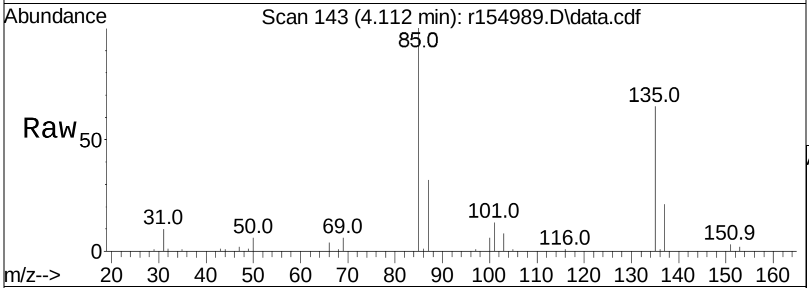


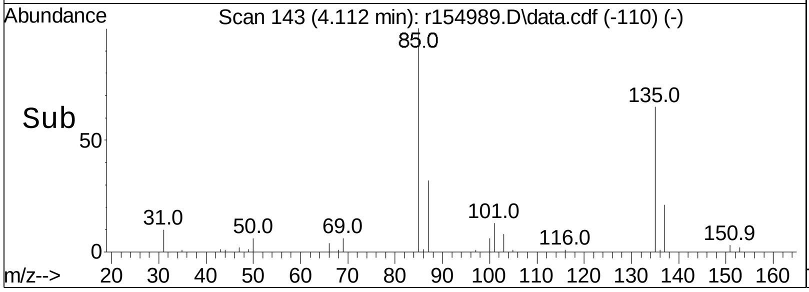
```
#6
chloromethane
Concen:    8.83 ppbV
RT:    4.00 min  Scan# 125
Delta R.T.  -0.006 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion: 50 Resp:  118642
Ion  Ratio  Lower  Upper
 50  100
 52   32.0   25.1   37.7
```



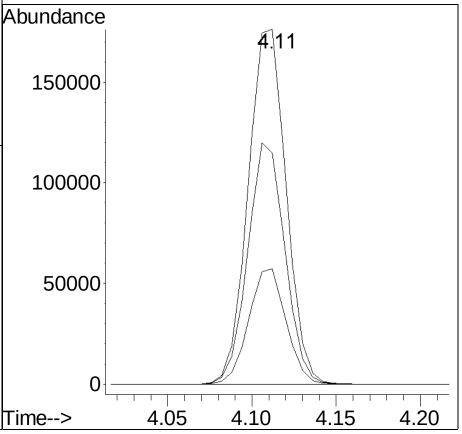


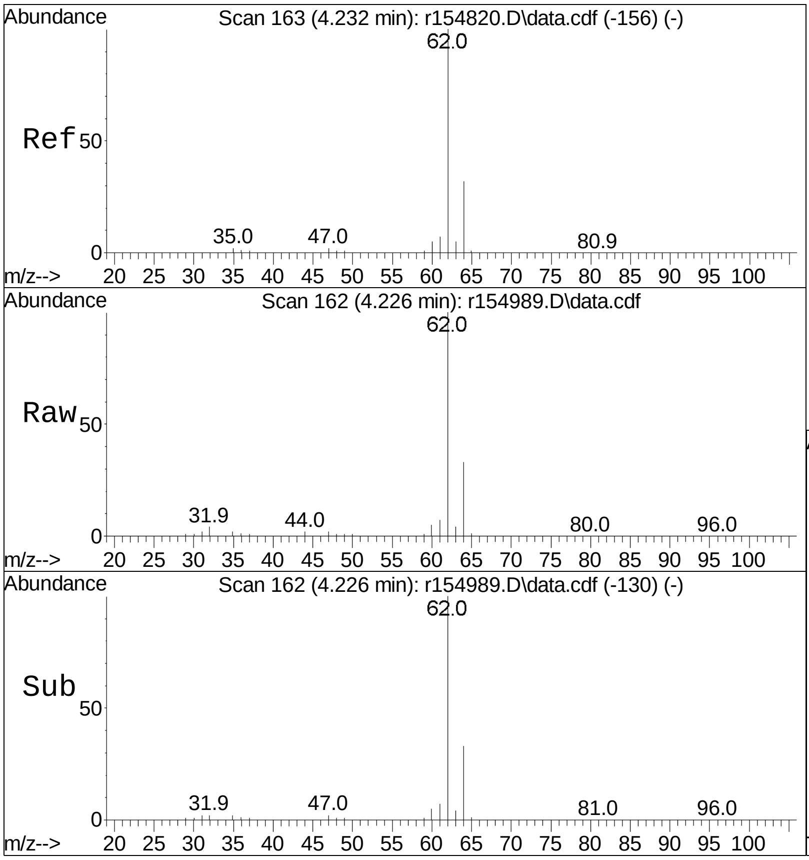




```
#7
Freon-114
Concen:    9.54 ppbV
RT:    4.11 min  Scan# 143
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

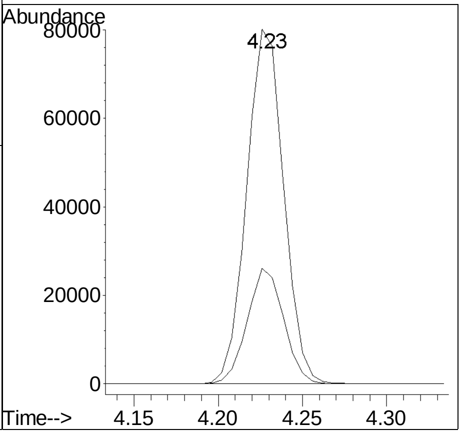
Tgt Ion: 85 Resp:  276484
Ion  Ratio   Lower   Upper
 85  100
 87   32.5   25.0   37.4
135   65.1   47.7   71.5
```

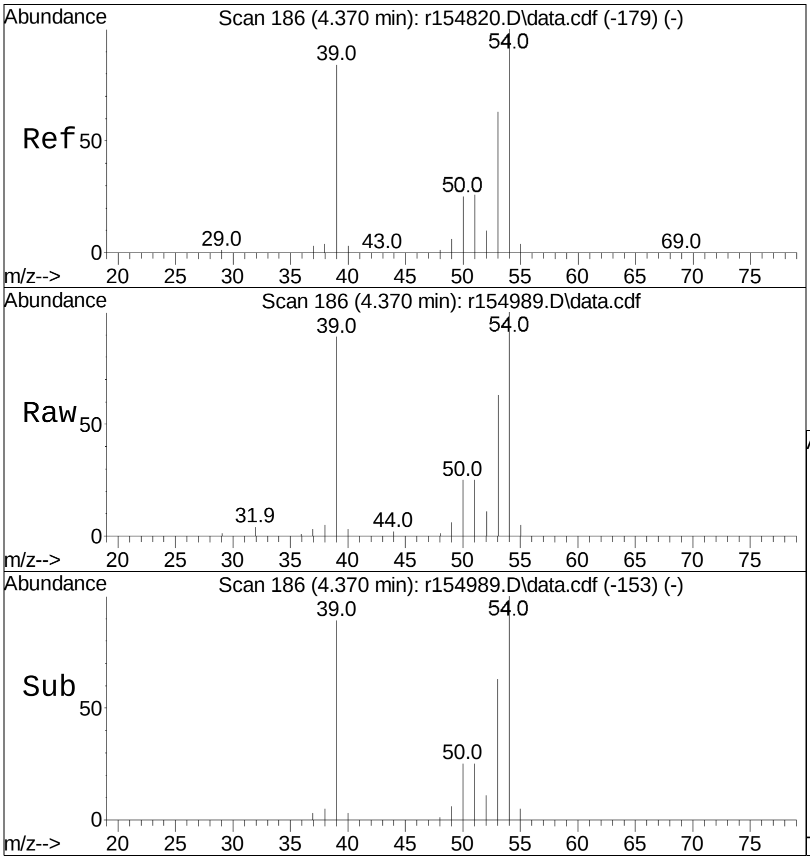




```
#9
vinyl chloride
Concen:    9.69 ppbV
RT:    4.23 min  Scan# 162
Delta R.T.  -0.006 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

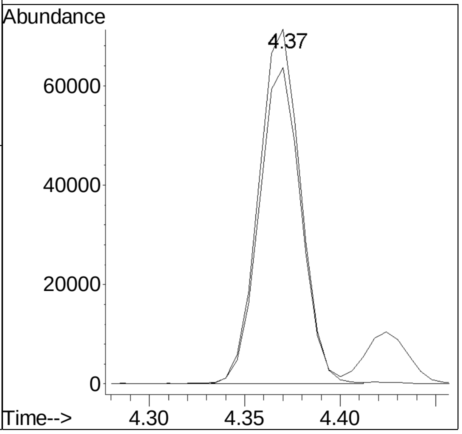
Tgt Ion: 62 Resp:  122477
Ion  Ratio  Lower  Upper
 62  100
 64   32.6   25.9   38.9
```

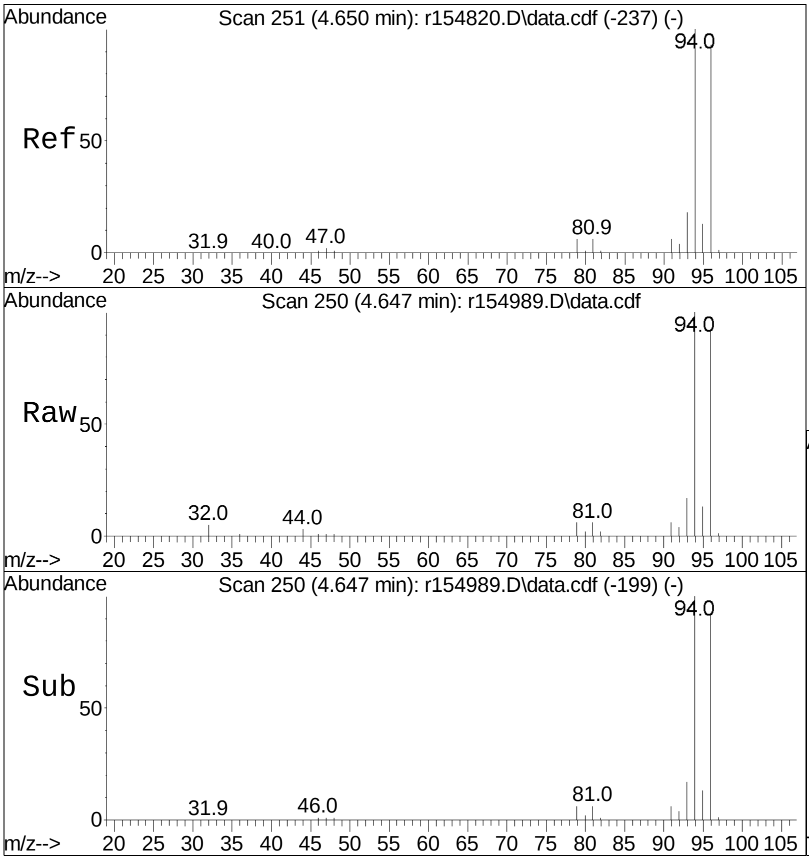




```
#10
1,3-butadiene
Concen:    9.26 ppbV
RT:    4.37 min  Scan# 186
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

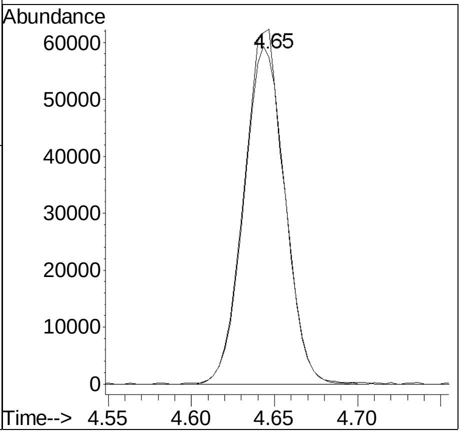
Tgt Ion: 54 Resp:  109129
Ion  Ratio  Lower  Upper
 54  100
 39   89.2   67.8  101.6
```

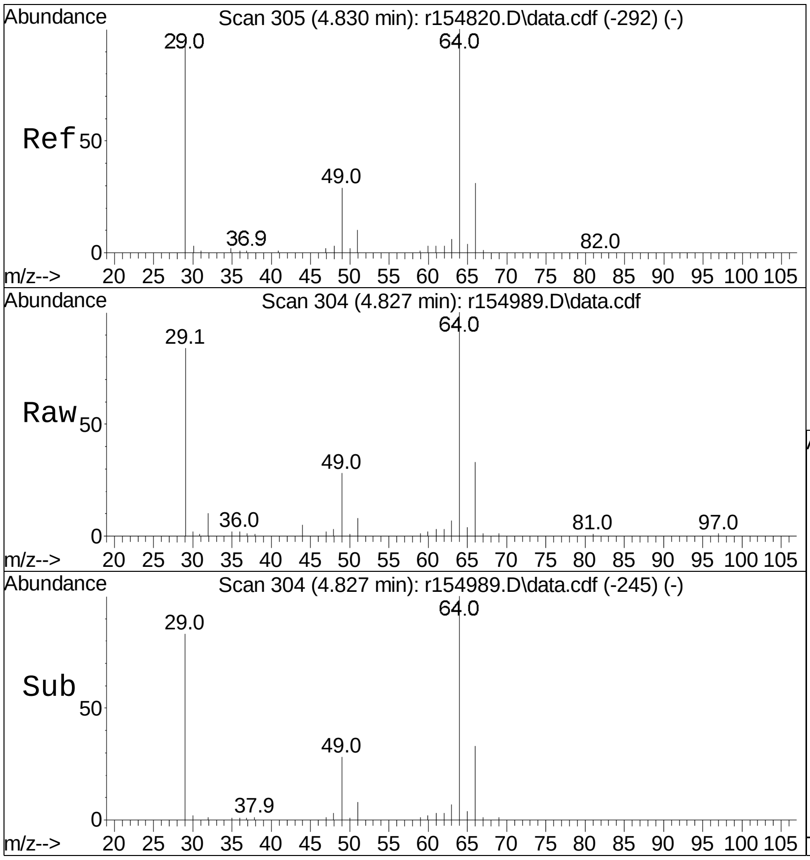




```
#13
bromomethane
Concen:    9.74 ppbV
RT:    4.65 min  Scan# 250
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

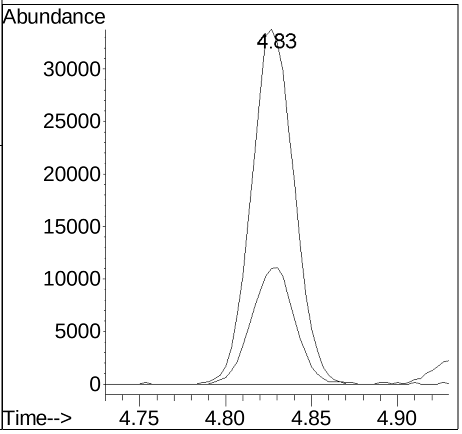
Tgt Ion: 94 Resp:  105500
Ion  Ratio  Lower  Upper
 94  100
 96   92.1   74.0  111.0
```

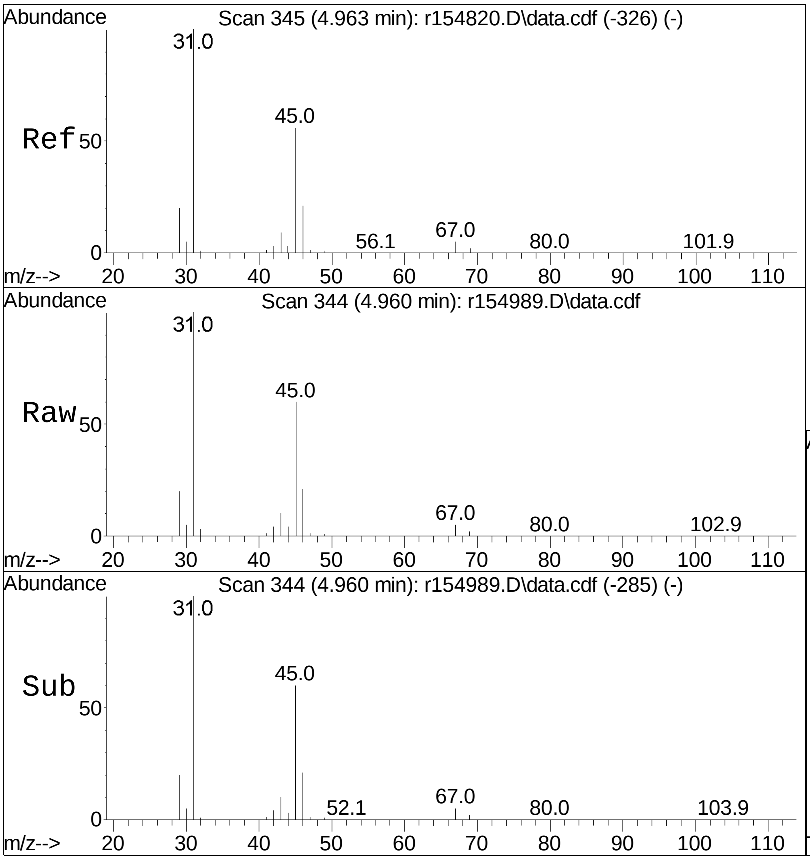




```
#14
chloroethane
Concen:    9.26 ppbV
RT:    4.83 min  Scan# 304
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

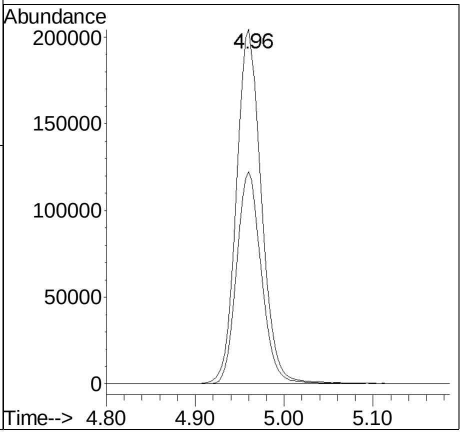
Tgt Ion: 64 Resp:   58969
Ion  Ratio  Lower  Upper
 64  100
 66   32.5   25.1   37.7
```





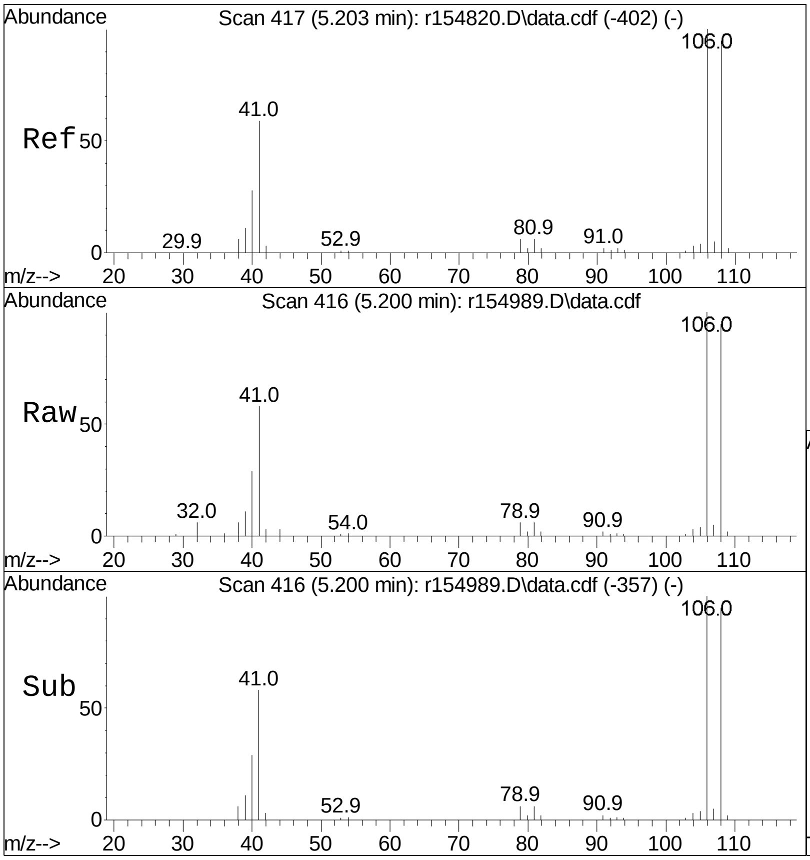
```
#15
ethanol
Concen:   41.55 ppbV
RT:    4.96 min  Scan# 344
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

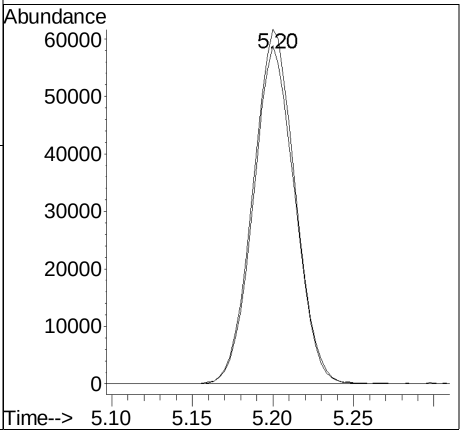
Tgt Ion: 31 Resp:  401471
Ion  Ratio  Lower  Upper
 31  100
 45   59.8   44.9   67.3
```

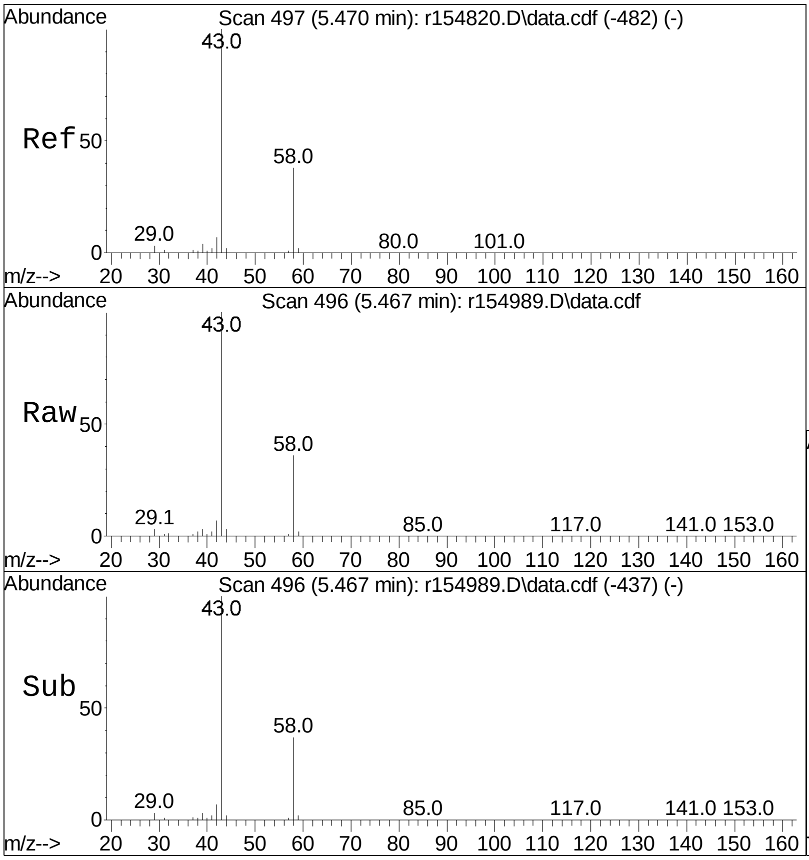


```
#17
vinyl bromide
Concen:    9.61 ppbV
RT:    5.20 min  Scan# 416
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion:106 Resp:  112351
Ion  Ratio  Lower  Upper
106  100
108   95.4   75.8  113.8
```

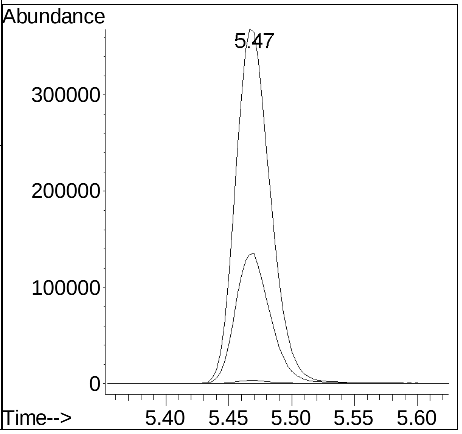


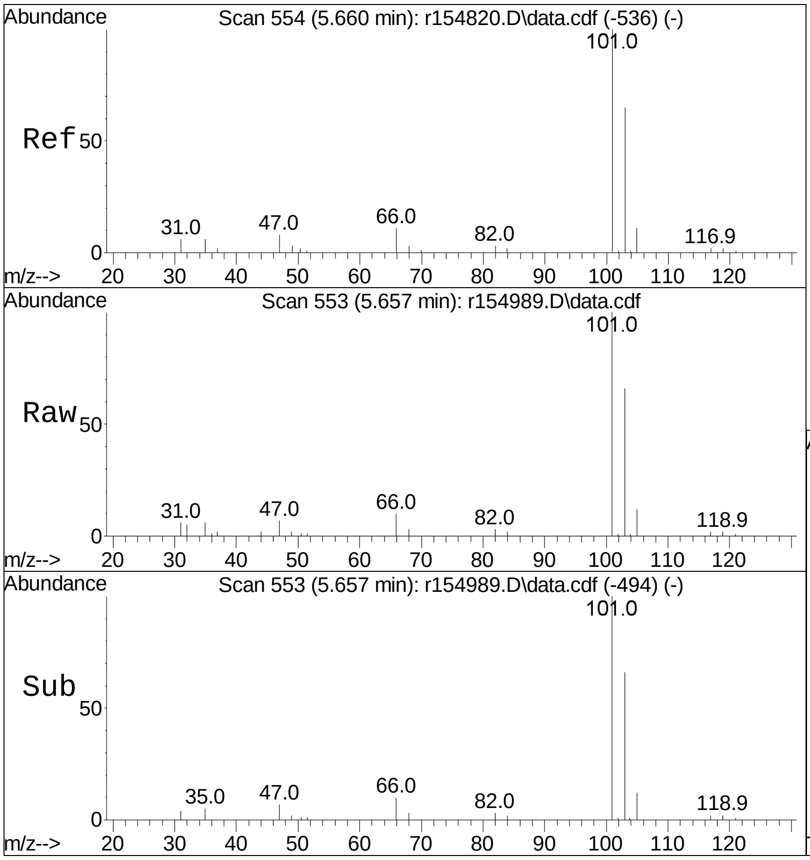




```
#19
acetone
Concen:   46.79 ppbV
RT:    5.47 min  Scan# 496
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

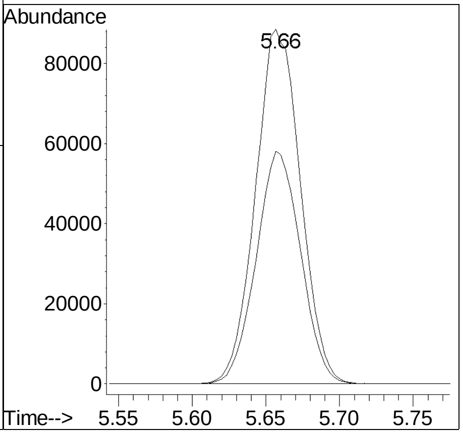
Tgt Ion: 43 Resp:  717312
Ion  Ratio  Lower  Upper
 43  100
 58   36.5   30.1   45.1
 57    1.0    0.8    1.2
```

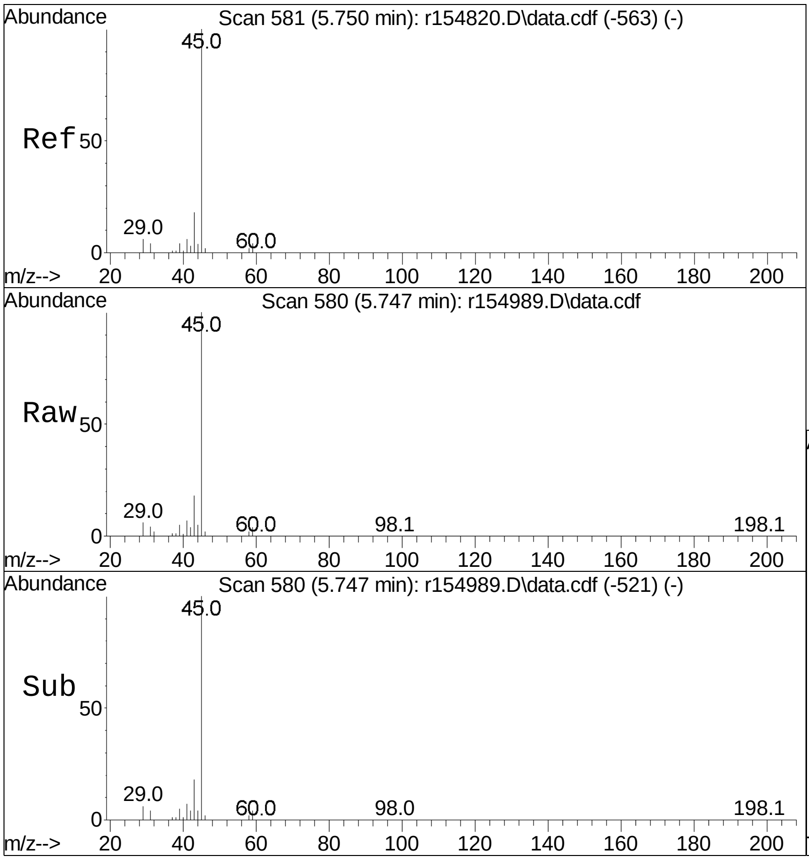




```
#21
trichlorofluoromethane
Concen:   10.38 ppbV
RT:    5.66 min  Scan# 553
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

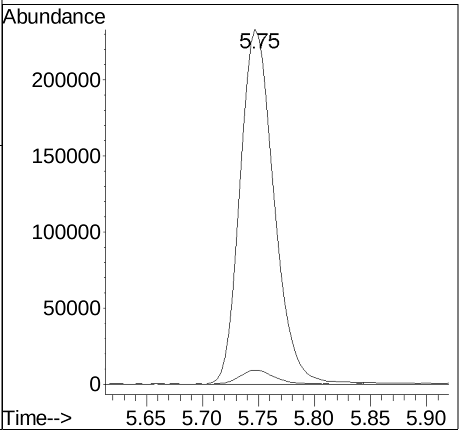
Tgt Ion:101 Resp:  188565
Ion  Ratio  Lower  Upper
101  100
103   65.6   52.2   78.2
```





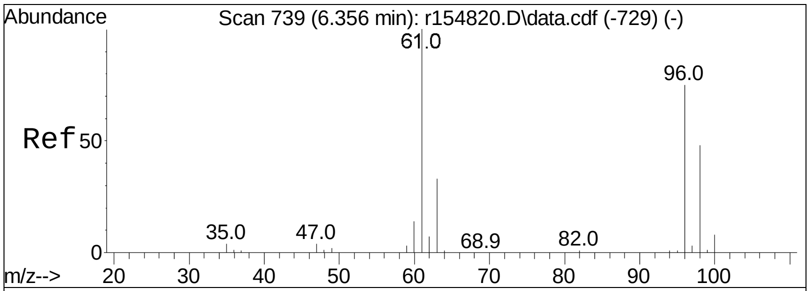
```
#22
isopropyl alcohol
Concen:   22.14 ppbV
RT:    5.75 min  Scan# 580
Delta R.T.  -0.003 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

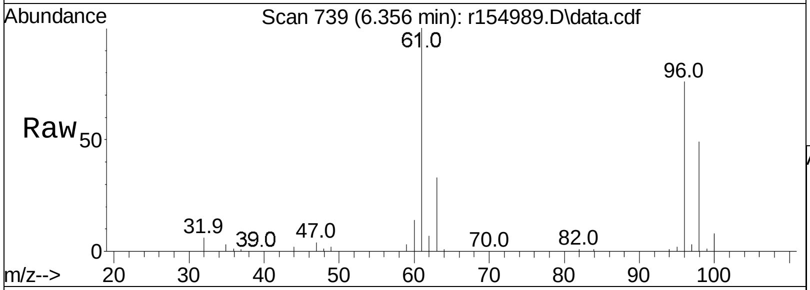
Tgt Ion: 45 Resp:  491676
Ion  Ratio  Lower  Upper
 45  100
 59    3.8    3.0    4.6
```

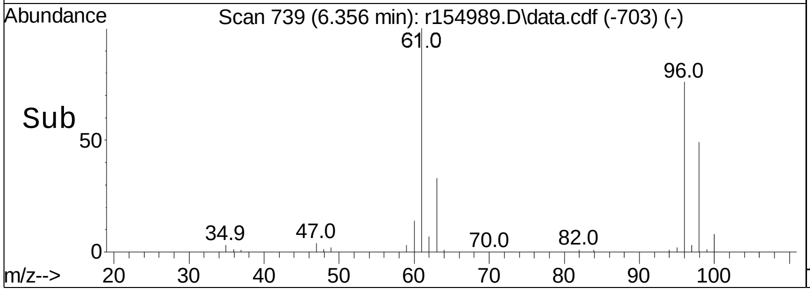


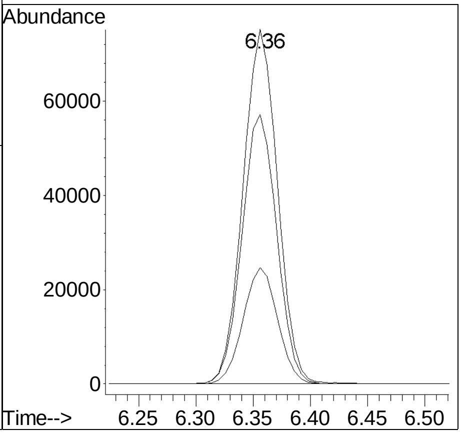
```
#26
1,1-dichloroethene
Concen:    9.65 ppbV
RT:    6.36 min  Scan# 739
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

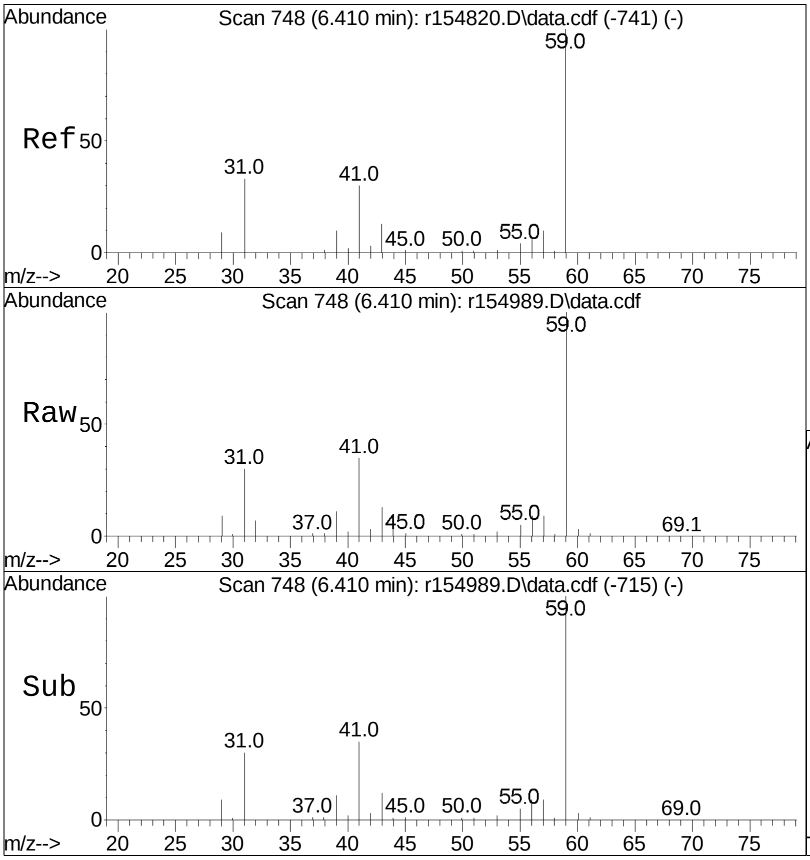
Tgt Ion: 61 Resp:  157840
Ion  Ratio  Lower  Upper
 61  100
 96   75.9   60.3   90.5
 63   32.8   26.1   39.1
```





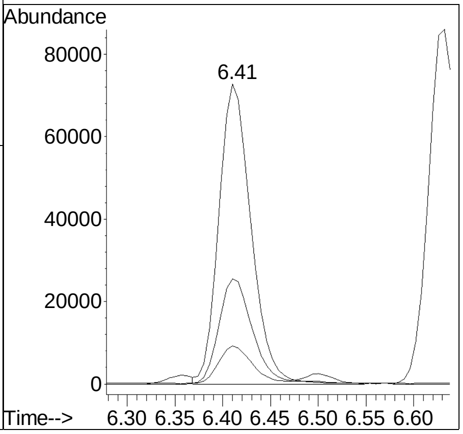


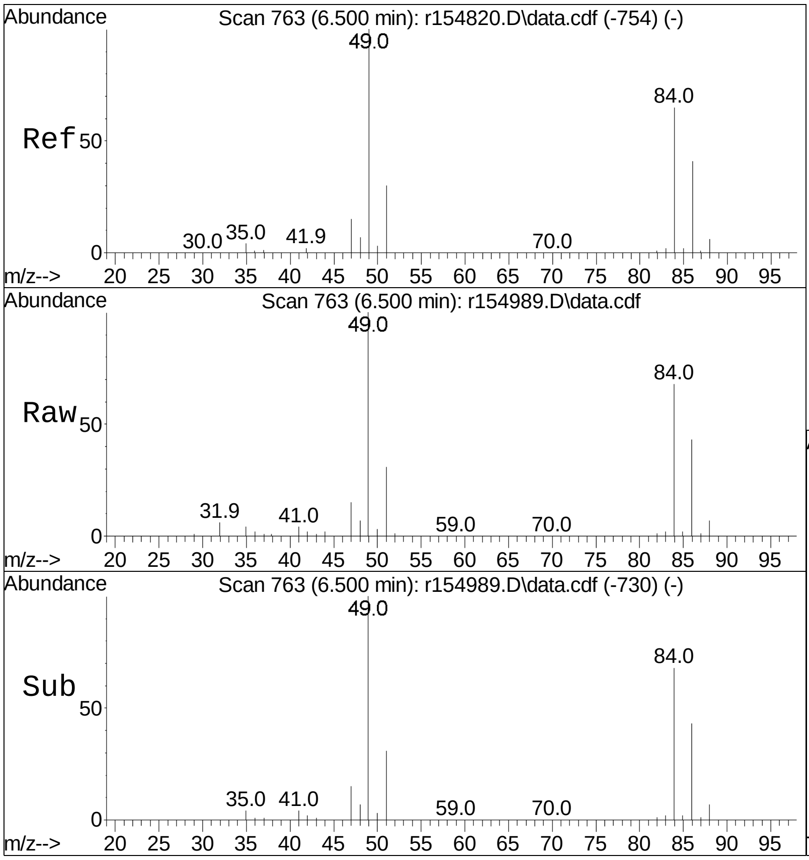




```
#27
tertiary butyl alcohol
Concen:    8.19 ppbV
RT:    6.41 min  Scan# 748
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

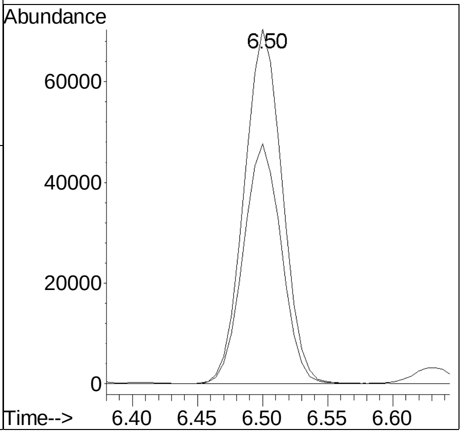
Tgt Ion: 59 Resp:  171658
Ion  Ratio  Lower  Upper
 59  100
 41   35.0   23.9   35.9
 43   12.7   10.3   15.5
```





```
#28
methylene chloride
Concen:    8.93 ppbV
RT:    6.50 min  Scan# 763
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

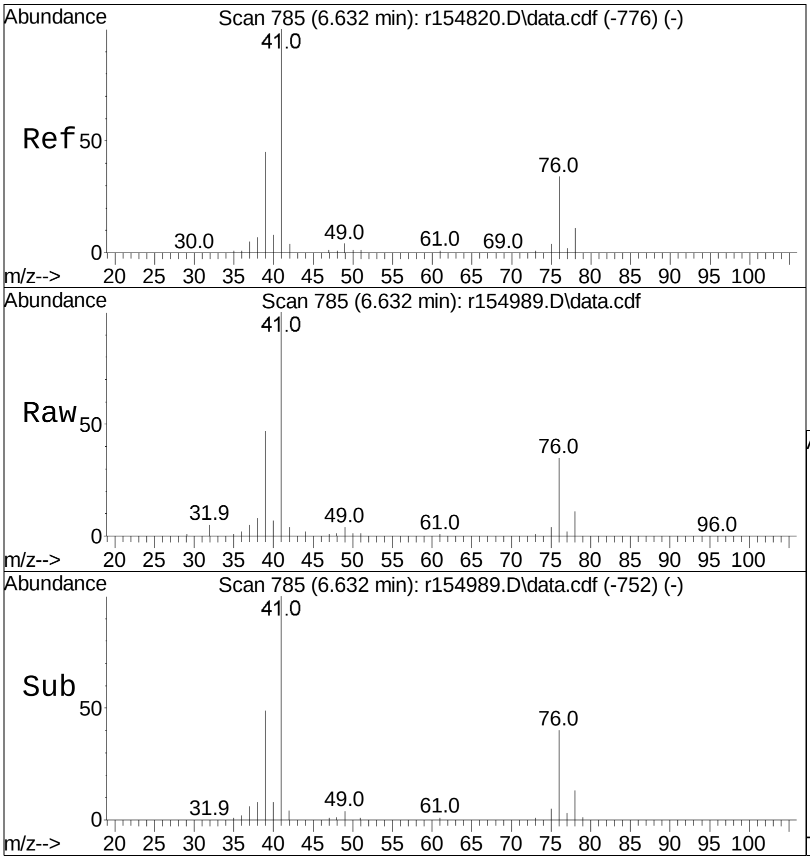
Tgt Ion: 49 Resp:  143640
Ion  Ratio  Lower  Upper
 49  100
 84   67.7   51.9   77.9
```

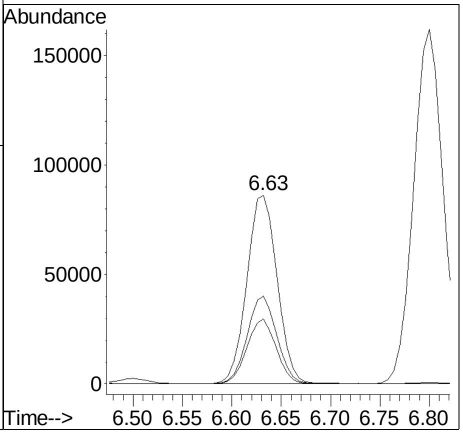


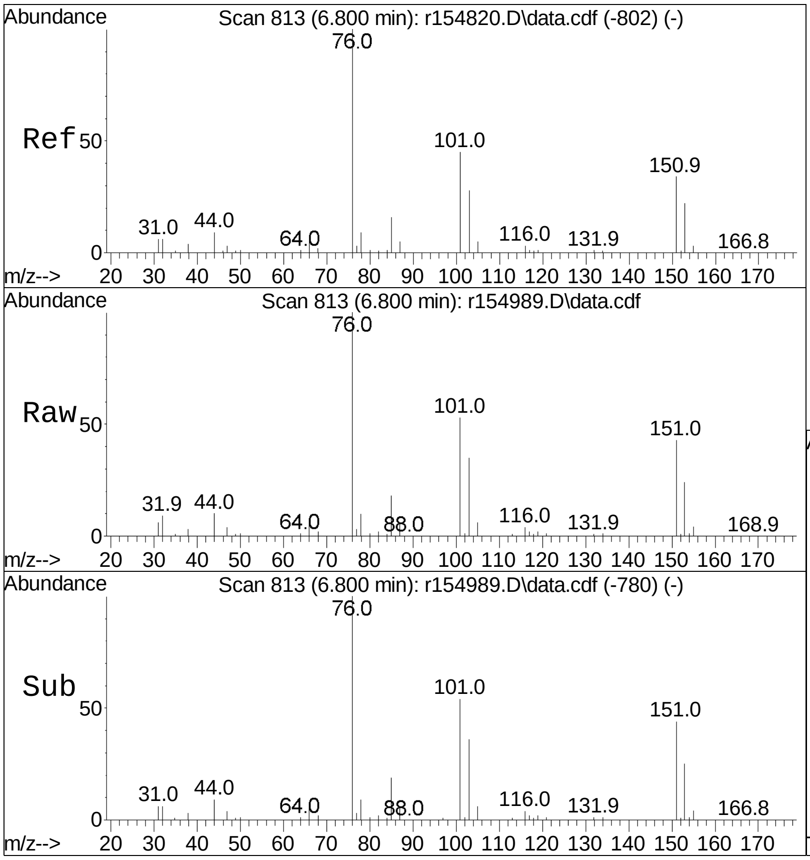
#29
3-chloropropene
Concen: 9.52 ppbV
RT: 6.63 min Scan# 785
Delta R.T. 0.000 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

Tgt Ion: 41 Resp: 184719

Ion	Ratio	Lower	Upper
41	100		
39	46.6	35.9	53.9
76	34.5	27.1	40.7

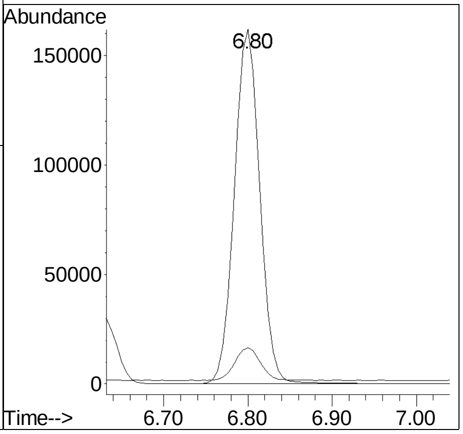


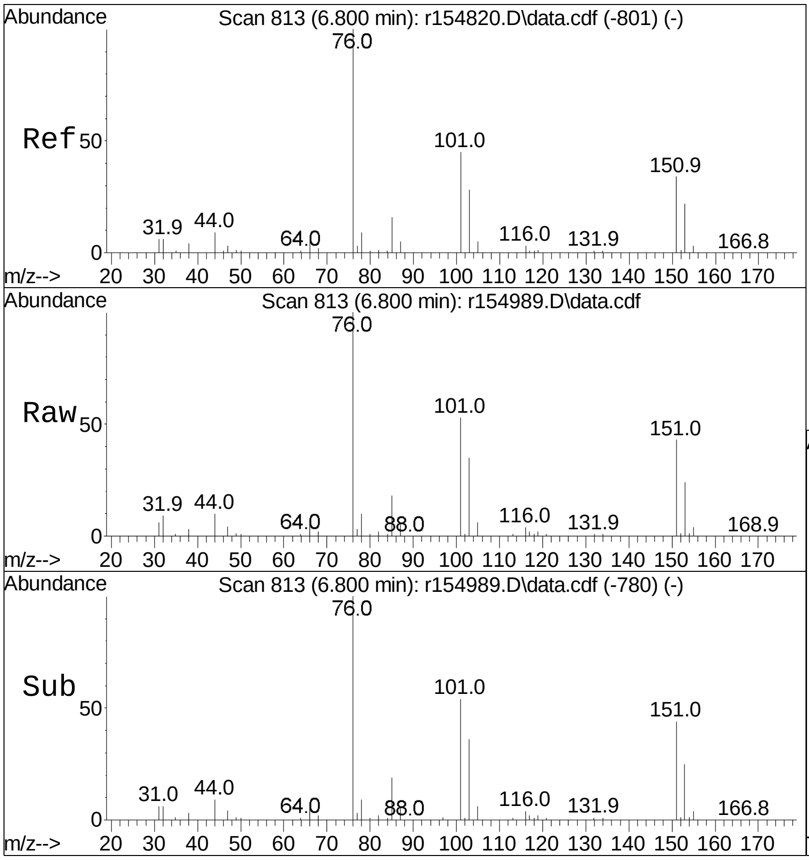




```
#30
carbon disulfide
Concen:    8.72 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

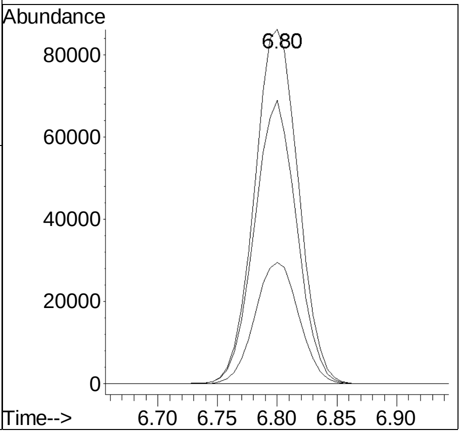
Tgt Ion: 76 Resp:  340742
Ion  Ratio  Lower  Upper
 76  100
 44   10.2    8.6   12.8
```

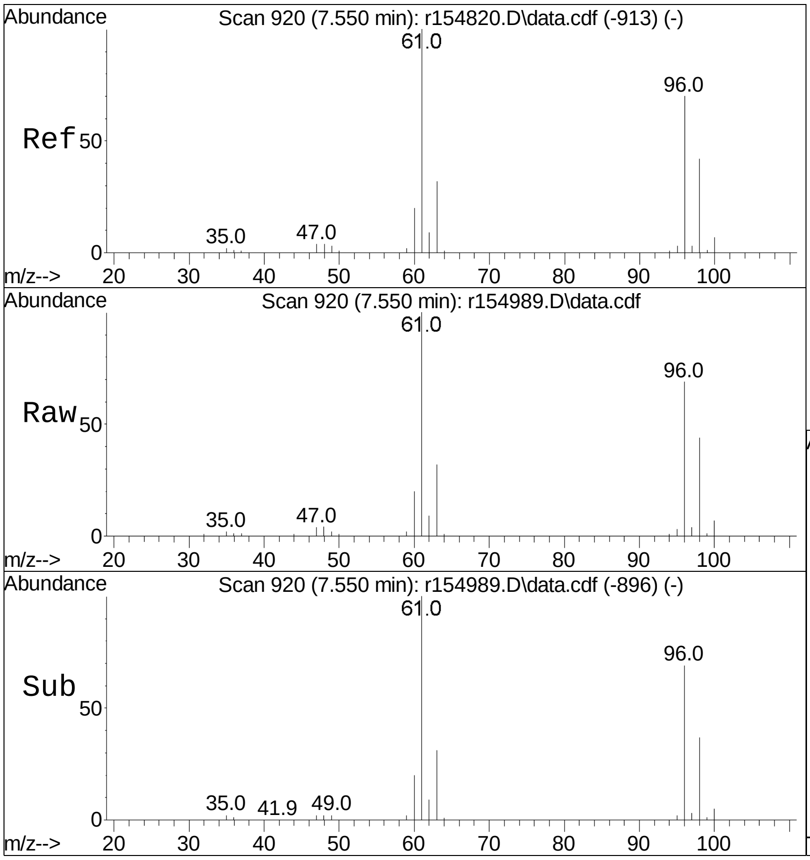




```
#31
Freon 113
Concen:   10.00 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion:101 Resp:  220890
Ion  Ratio  Lower  Upper
101  100
 85   34.3   28.8   43.2
151   80.0   60.3   90.5
```

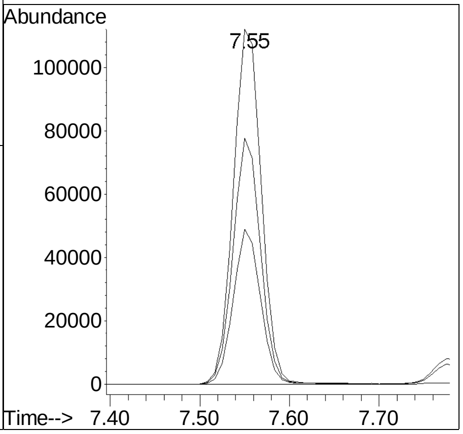


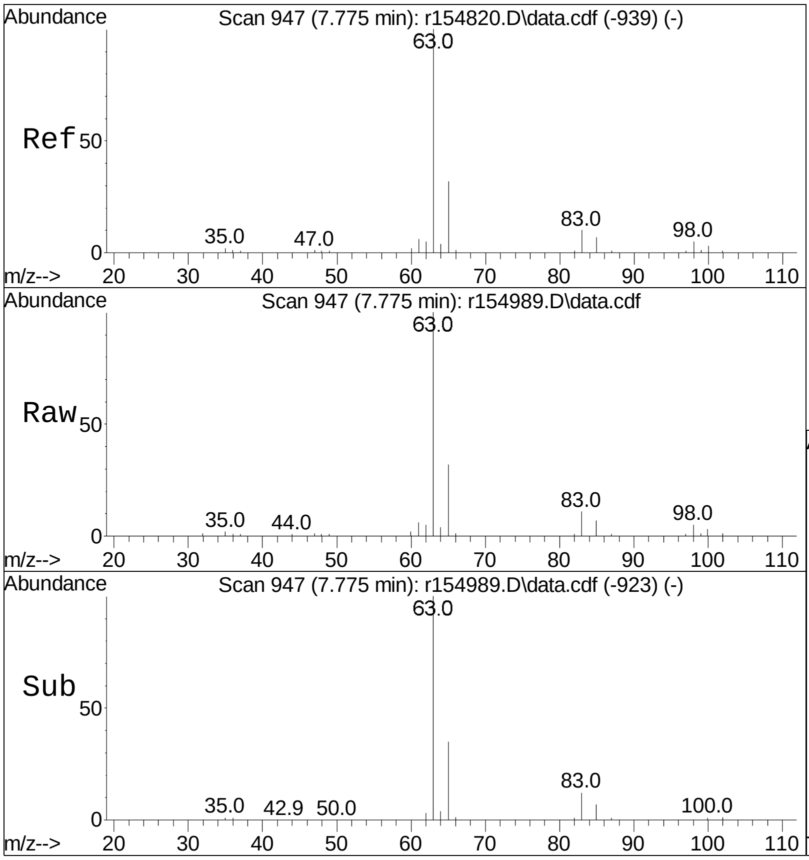


#32
trans-1,2-dichloroethene
Concen: 10.48 ppbV
RT: 7.55 min Scan# 920
Delta R.T. 0.000 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

Tgt Ion: 61 Resp: 243545

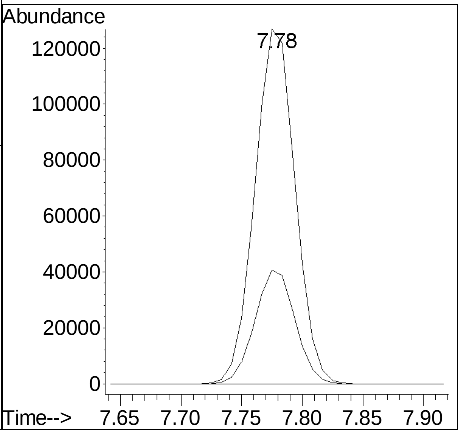
Ion	Ratio	Lower	Upper
61	100		
96	69.3	55.7	83.5
98	43.6	34.0	51.0

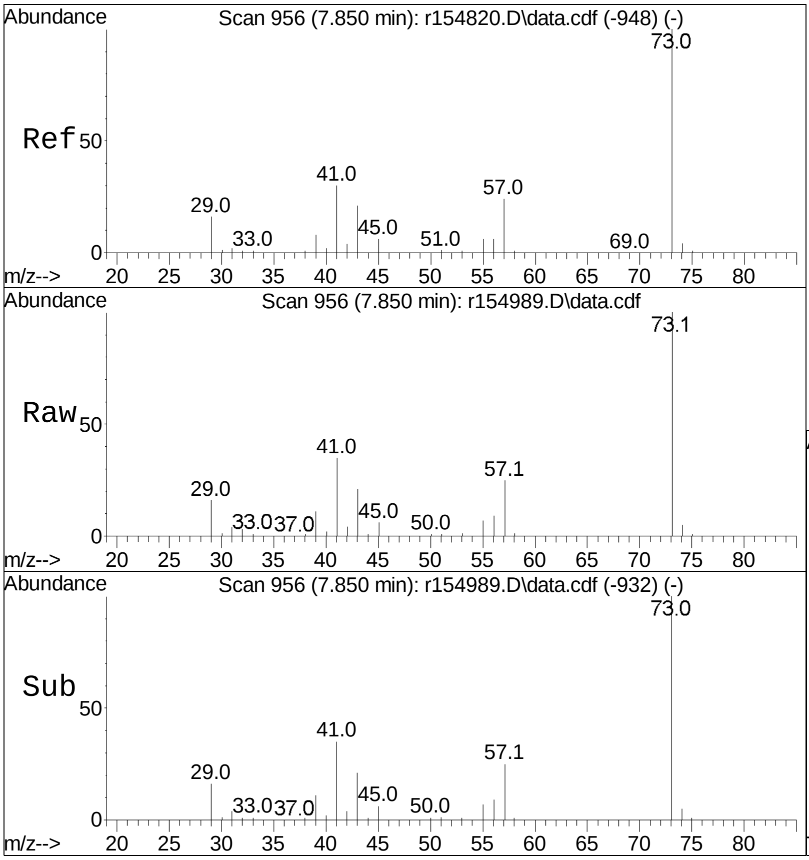




```
#33
1,1-dichloroethane
Concen:   10.44 ppbV
RT:    7.78 min  Scan# 947
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

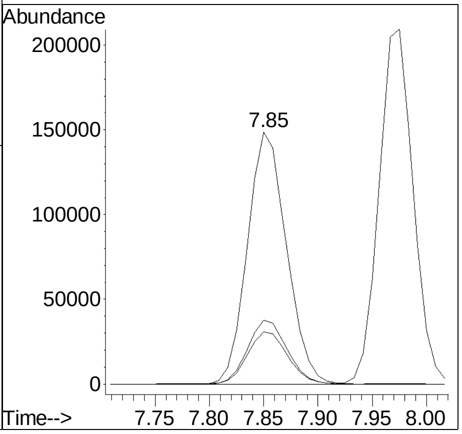
Tgt Ion: 63 Resp:  293871
Ion  Ratio  Lower  Upper
 63  100
 65   32.0   25.8   38.6
```

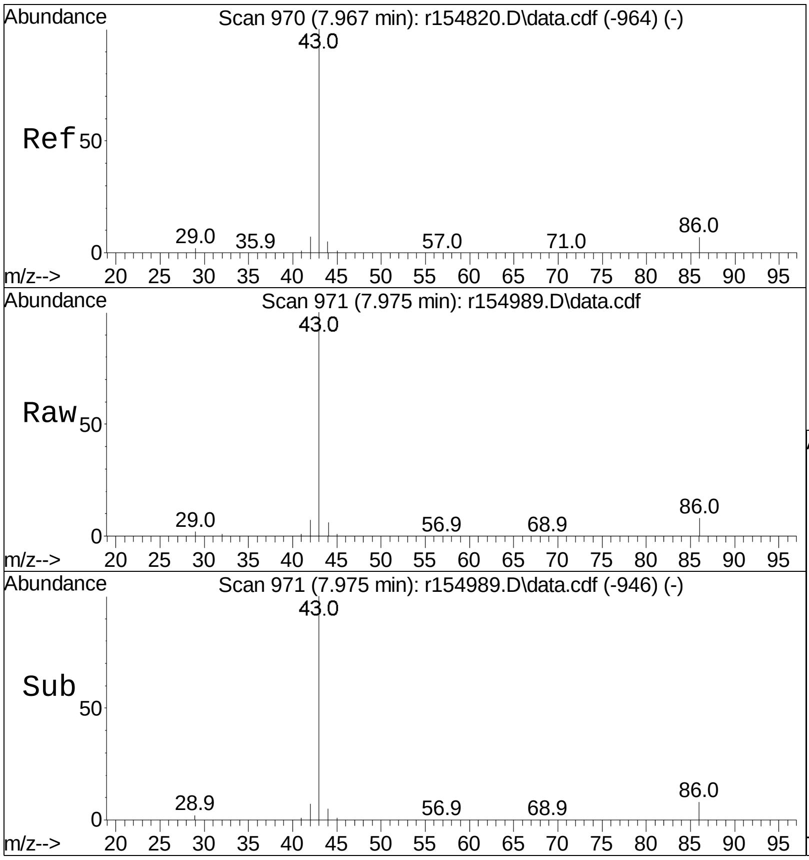




```
#34
MTBE
Concen:    9.53 ppbV
RT:    7.85 min  Scan# 956
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

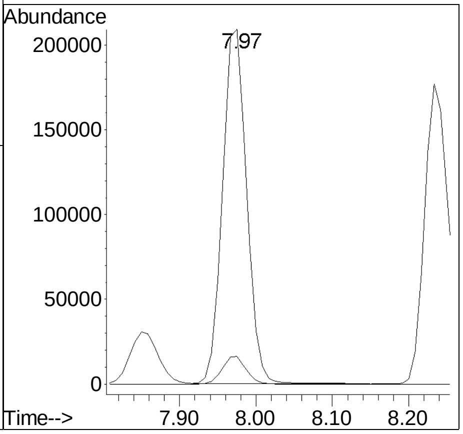
Tgt Ion: 73 Resp:  371336
Ion  Ratio  Lower  Upper
 73  100
 57   25.4   19.4   29.0
 43   20.7   17.3   25.9
```

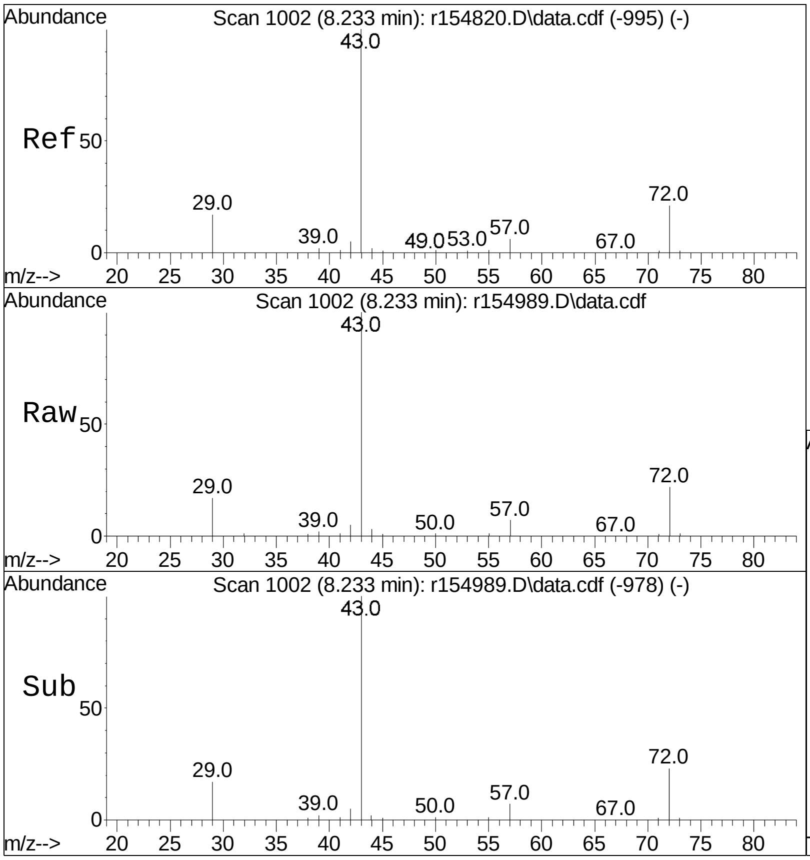




```
#35
vinyl acetate
Concen:   10.70 ppbV
RT:    7.97 min  Scan# 971
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

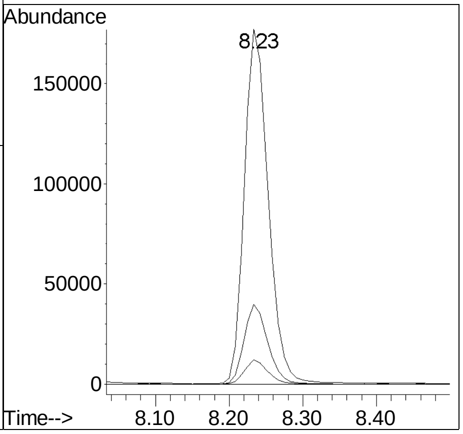
Tgt Ion: 43 Resp:  458374
Ion  Ratio  Lower  Upper
 43  100
 86    7.8    5.6    8.4
```





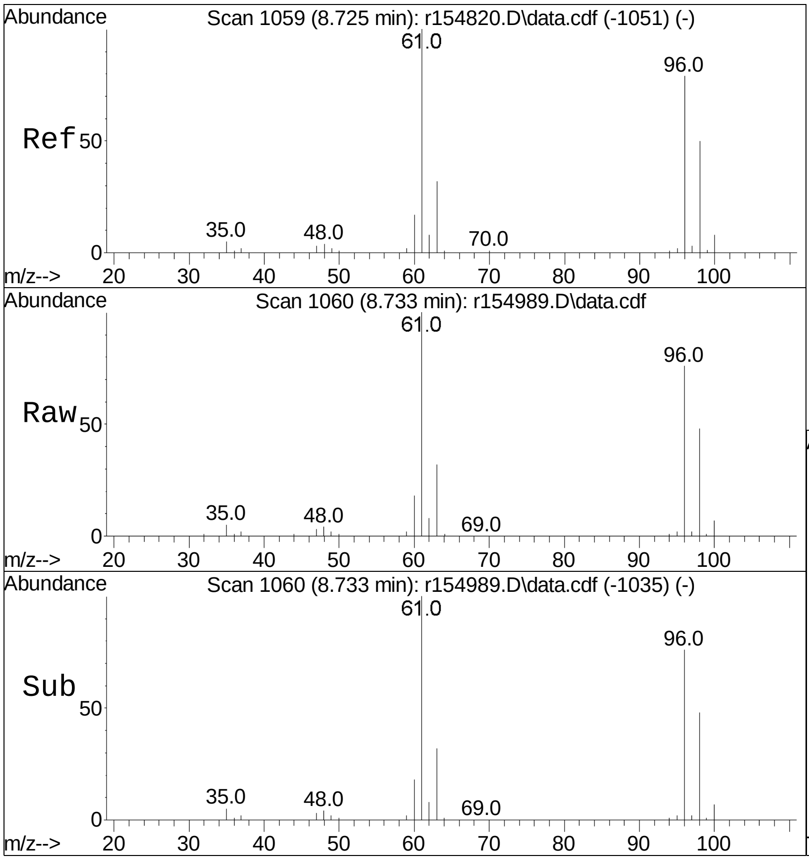
```
#36
2-butanone
Concen:    9.73 ppbV
RT:    8.23 min  Scan# 1002
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

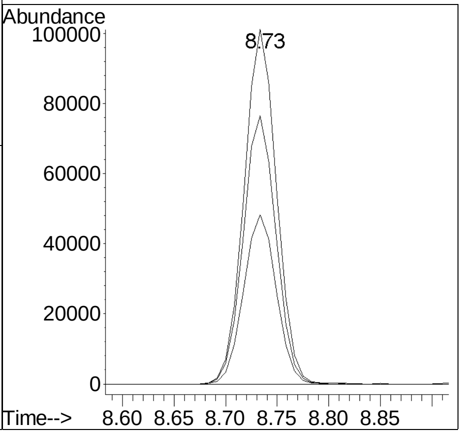
Tgt Ion: 43 Resp:  401470
Ion  Ratio  Lower  Upper
 43  100
 72   22.5   17.2   25.8
 57    6.8    4.6    7.0
```

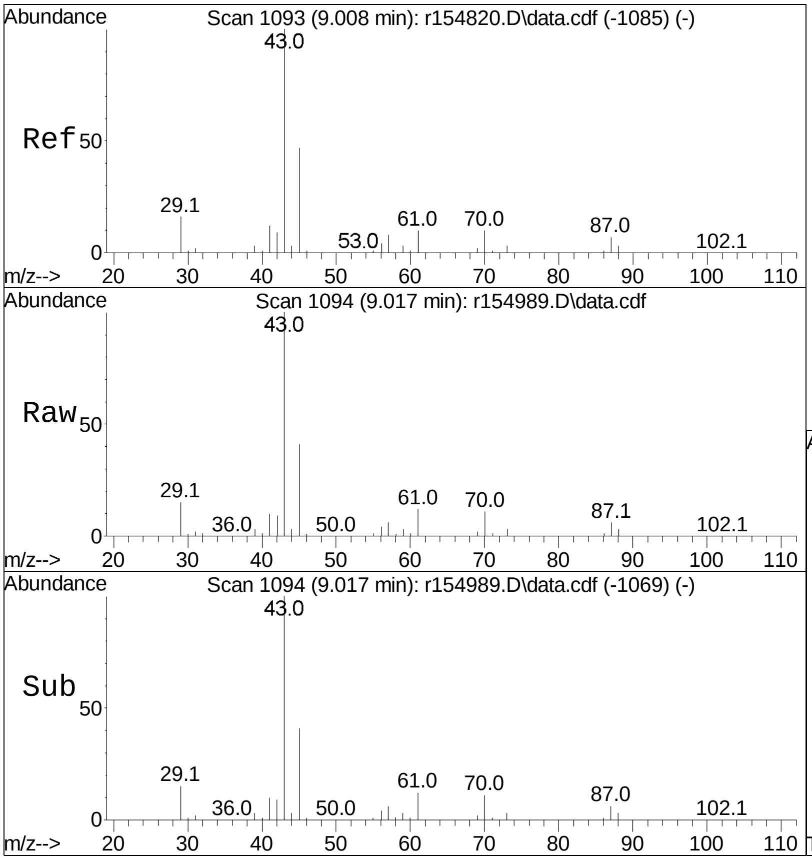


```
#37
cis-1,2-dichloroethene
Concen:   11.06 ppbV
RT:    8.73 min  Scan# 1060
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion: 61 Resp:  221720
Ion  Ratio  Lower  Upper
 61  100
 96   75.7   62.9   94.3
 98   47.8   40.0   60.0
```

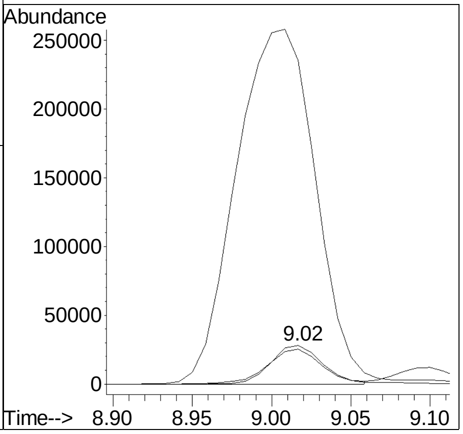


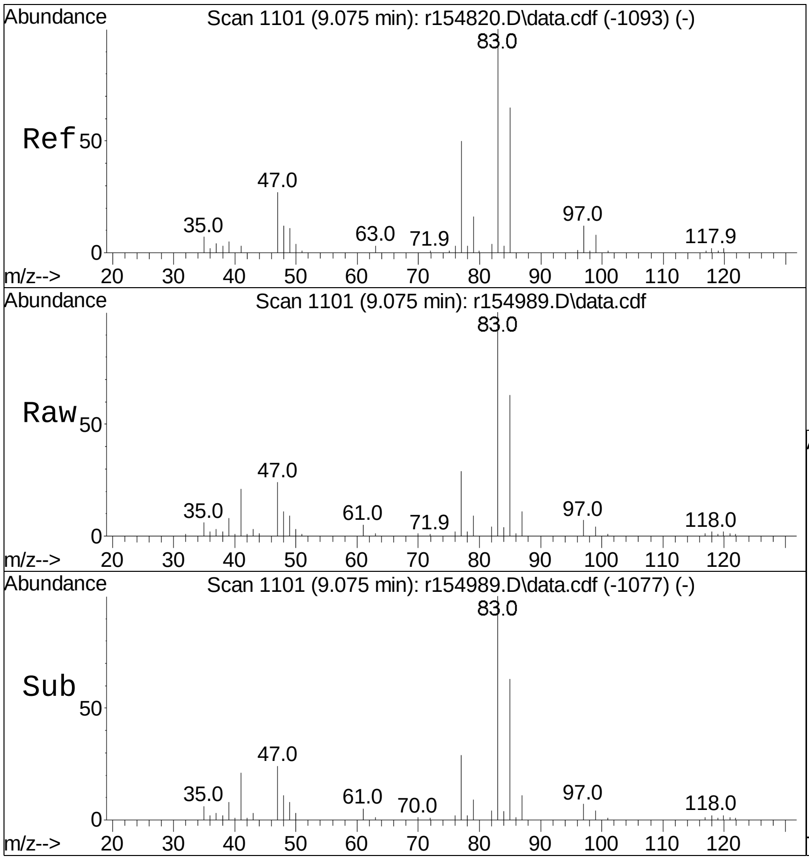




```
#38
Ethyl Acetate
Concen:   10.79 ppbV
RT:    9.02 min  Scan# 1094
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

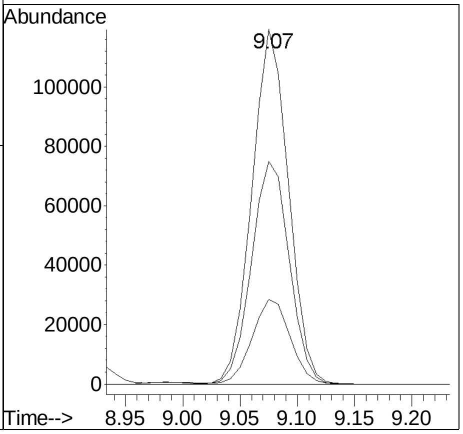
Tgt Ion: 61 Resp:   63705
Ion  Ratio  Lower  Upper
 61  100
 70   90.5   76.7  115.1
 43  839.1  782.3  1173.5
```

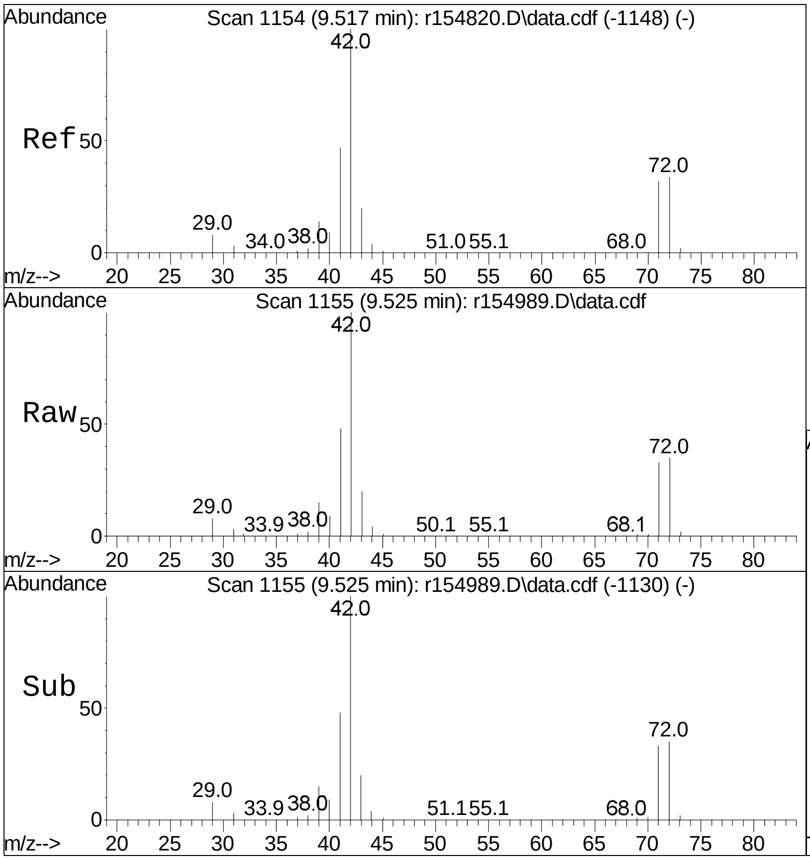




```
#39
chloroform
Concen:   10.94 ppbV
RT:    9.07 min  Scan# 1101
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

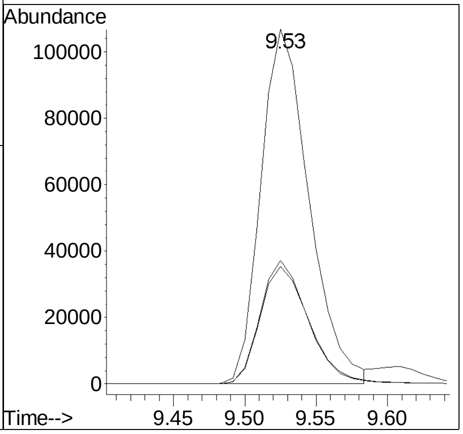
Tgt Ion: 83 Resp:  265210
Ion  Ratio  Lower  Upper
 83  100
 85   62.7   52.3   78.5
 47   23.9   21.6   32.4
```

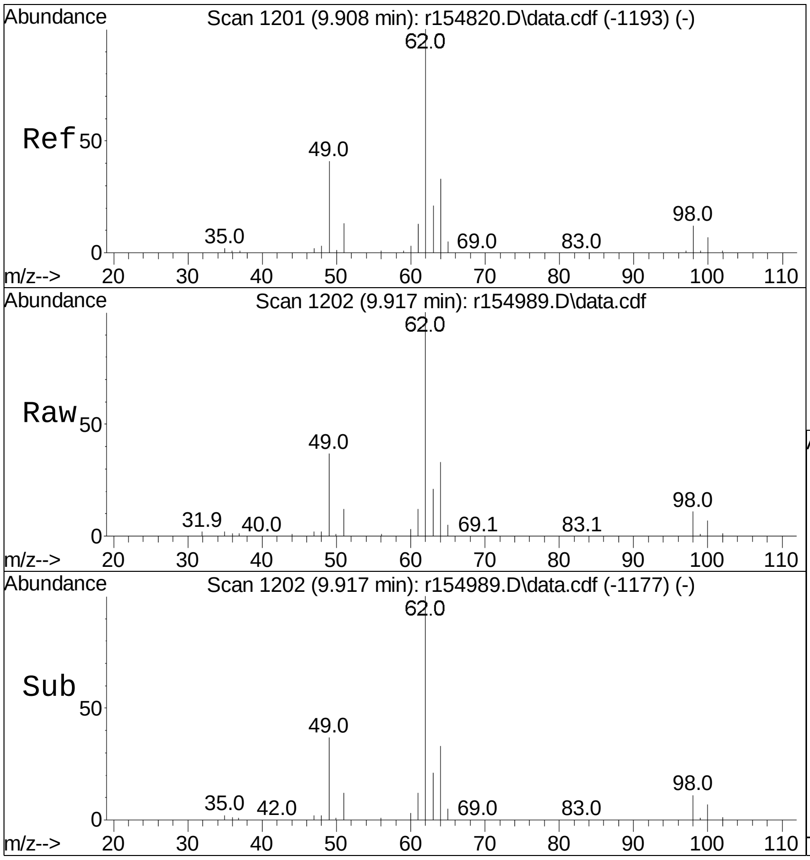




```
#40
Tetrahydrofuran
Concen:    9.76 ppbV m
RT:    9.53 min  Scan# 1155
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

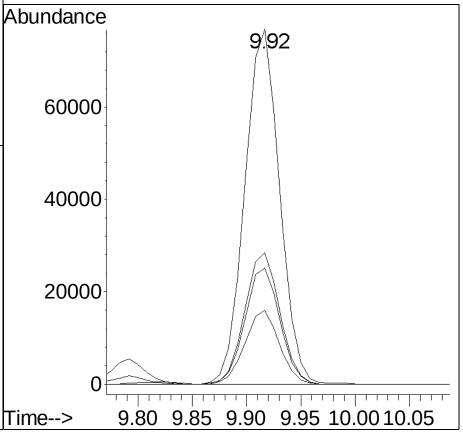
Tgt Ion: 42 Resp:  250961
Ion  Ratio  Lower  Upper
 42  100
 71   33.1   25.5   38.3
 72   34.8   27.4   41.2
```

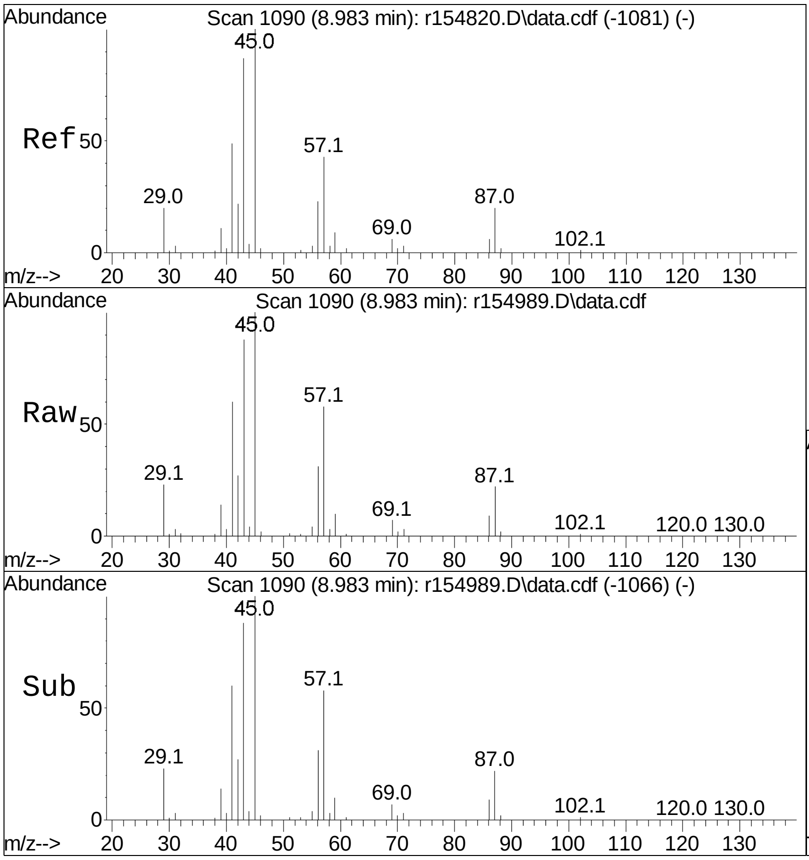




```
#42
1,2-dichloroethane
Concen:   10.91 ppbV
RT:    9.92 min  Scan# 1202
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

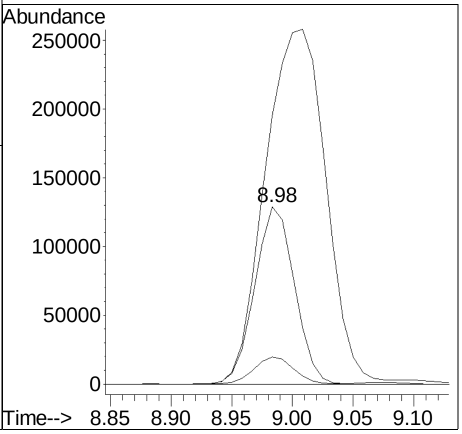
Tgt Ion: 62 Resp:  171061
Ion  Ratio  Lower  Upper
 62  100
 64   32.7   26.2   39.2
 49   37.0   33.1   49.7
 63   20.7   16.6   25.0
```

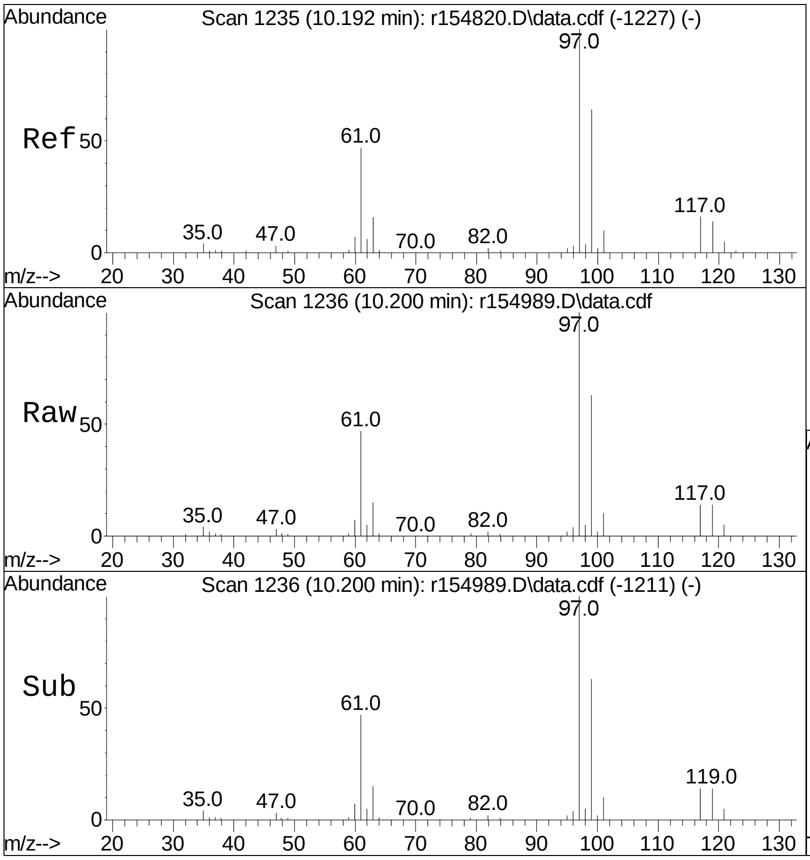




```
#44
hexane
Concen:    9.54 ppbV
RT:    8.98 min  Scan# 1090
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

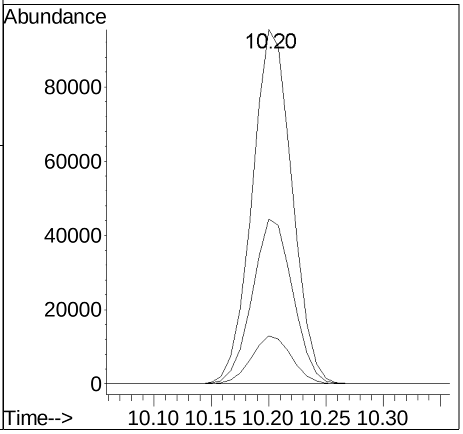
Tgt Ion: 57 Resp:  293726
Ion  Ratio  Lower  Upper
 57  100
 43  151.5  162.2  243.2#
 86   15.2   11.8   17.6
```

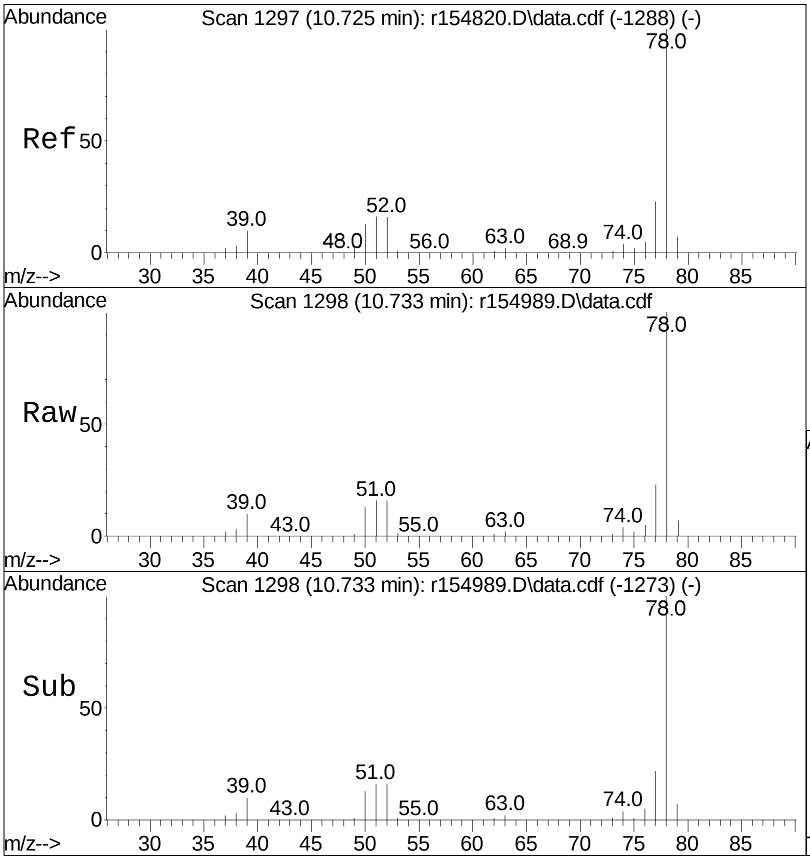




```
#48
1,1,1-trichloroethane
Concen:   10.18 ppbV
RT:   10.20 min  Scan# 1236
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

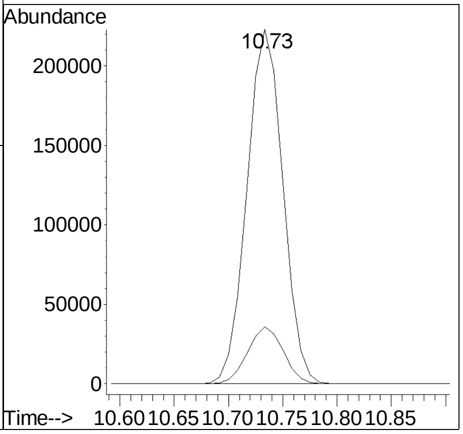
Tgt Ion: 97 Resp:  231272
Ion  Ratio  Lower  Upper
 97  100
 61   46.5   37.3   55.9
119   13.5   11.3   16.9
```

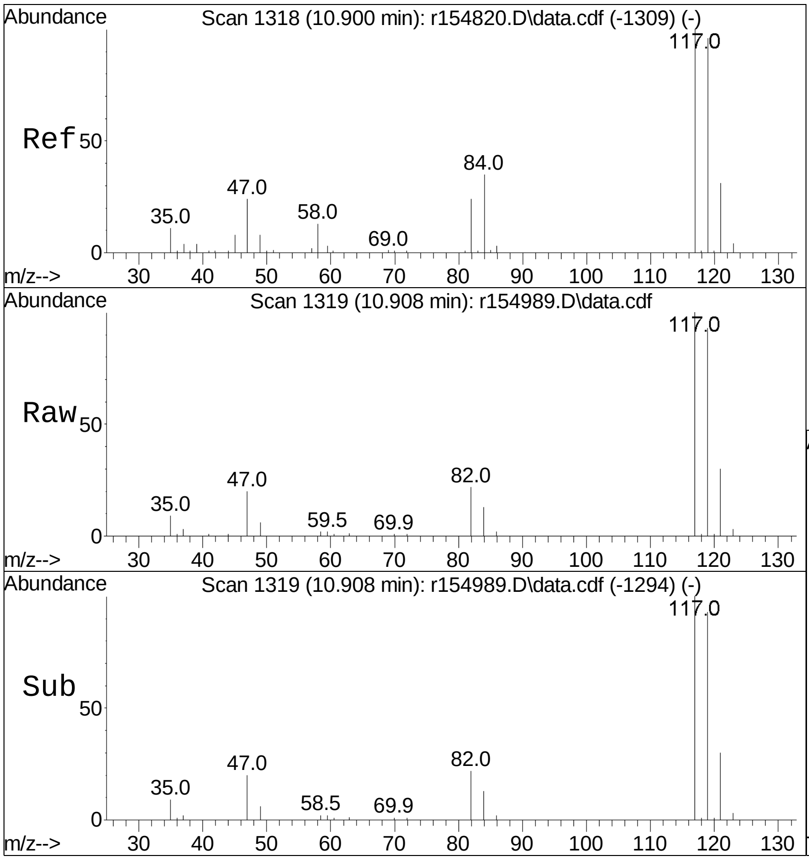




```
#50
benzene
Concen:    9.04 ppbV
RT:   10.73 min  Scan# 1298
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

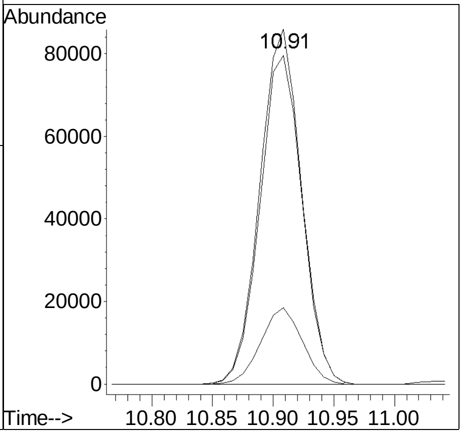
Tgt Ion: 78 Resp:  513718
Ion  Ratio  Lower  Upper
 78  100
 52   16.2   13.0   19.4
```

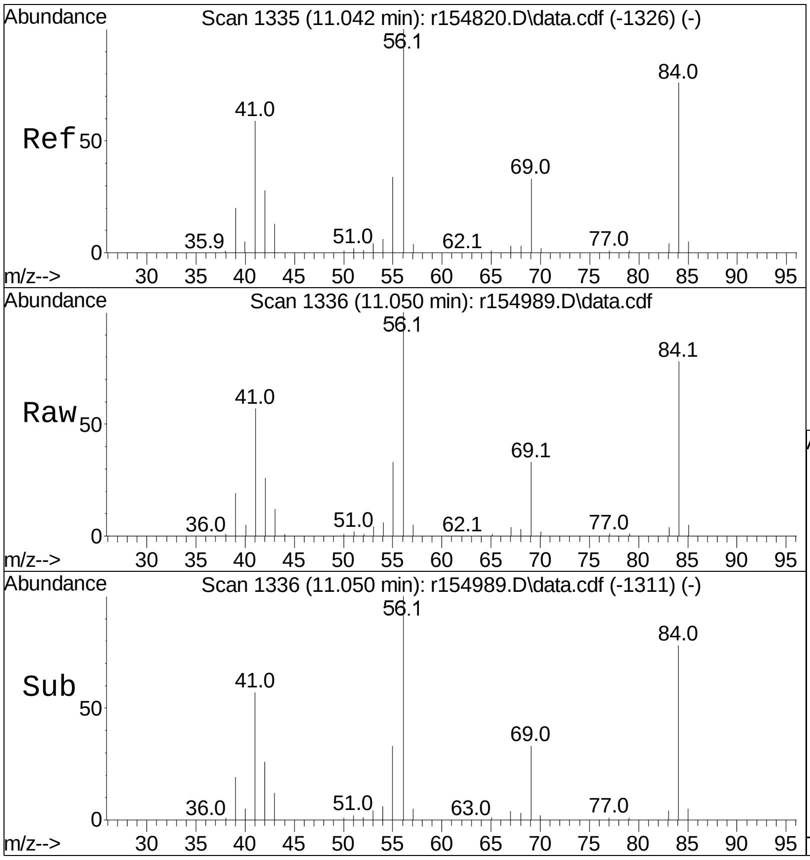




```
#52
carbon tetrachloride
Concen:   10.52 ppbV
RT:   10.91 min  Scan# 1319
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion:117 Resp:  205353
Ion  Ratio  Lower  Upper
117  100
119   92.6   76.8  115.2
 82   21.5   18.9   28.3
```

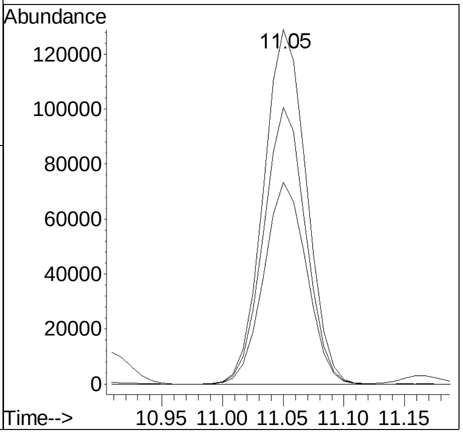


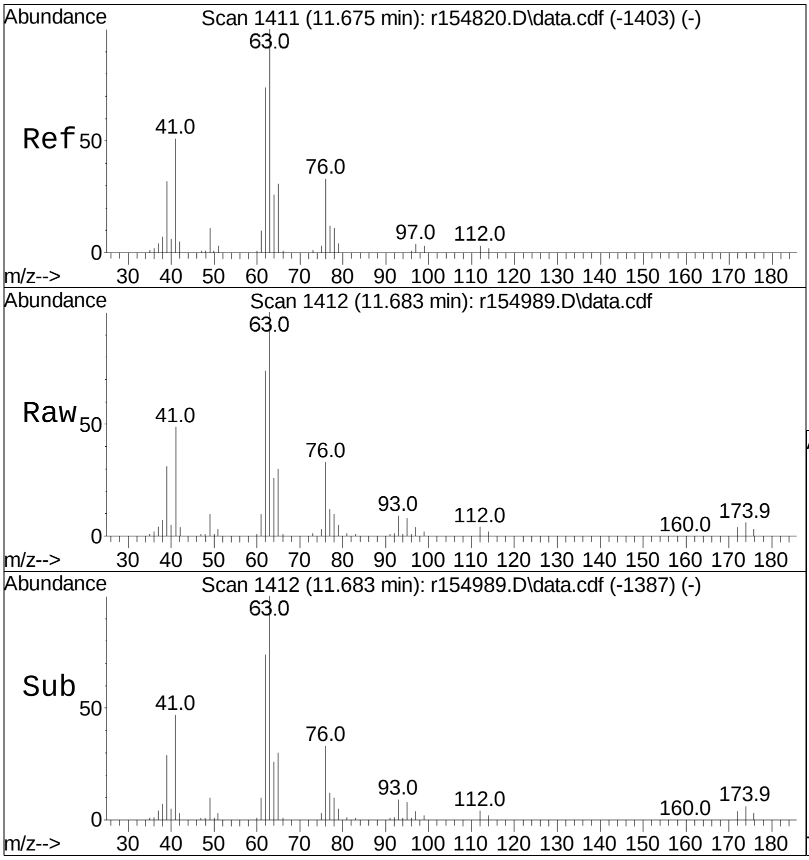


#53
cyclohexane
Concen: 9.59 ppbV
RT: 11.05 min Scan# 1336
Delta R.T. 0.008 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

Tgt Ion: 56 Resp: 317501

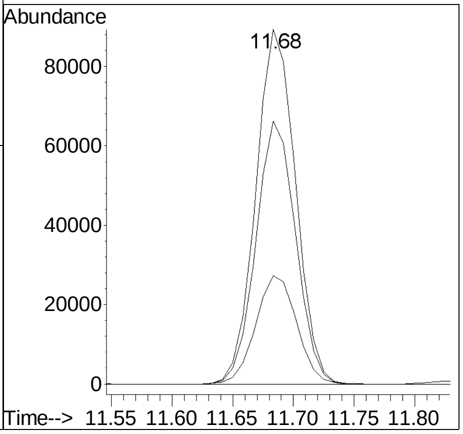
Ion	Ratio	Lower	Upper
56	100		
84	78.0	60.6	90.8
41	56.9	47.3	70.9

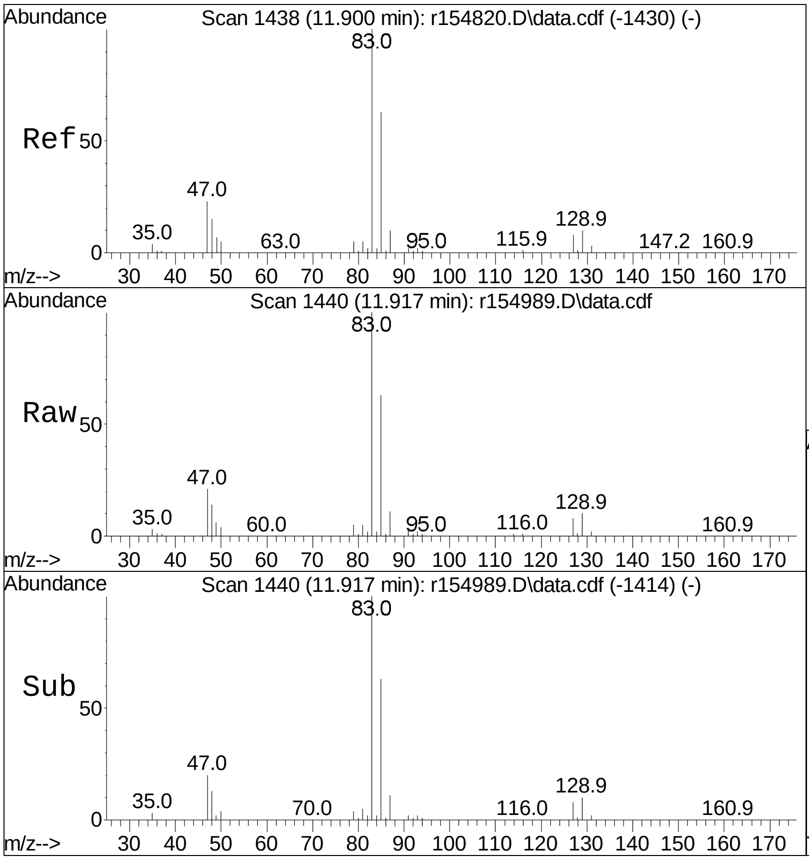




```
#56
1,2-dichloropropane
Concen:    9.60 ppbV
RT:   11.68 min  Scan# 1412
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

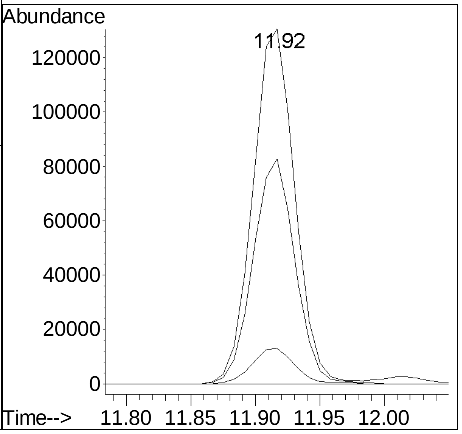
Tgt Ion: 63 Resp:  203374
Ion  Ratio  Lower  Upper
 63  100
 62   74.1   58.9   88.3
 39   30.5   25.5   38.3
```

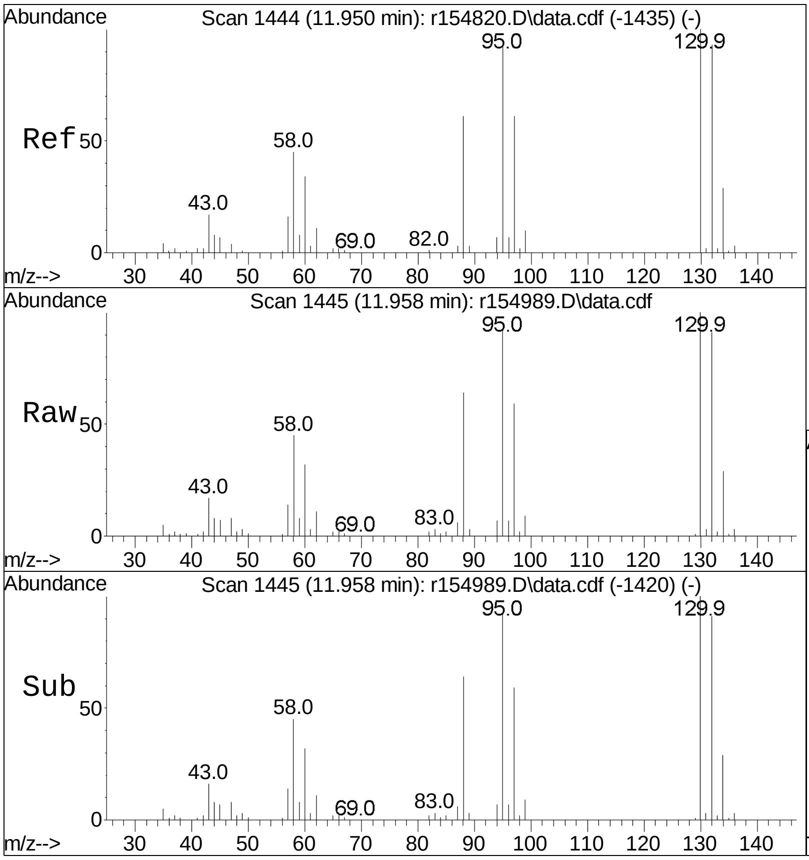




```
#57
bromodichloromethane
Concen:   10.26 ppbV
RT:   11.92 min  Scan# 1440
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

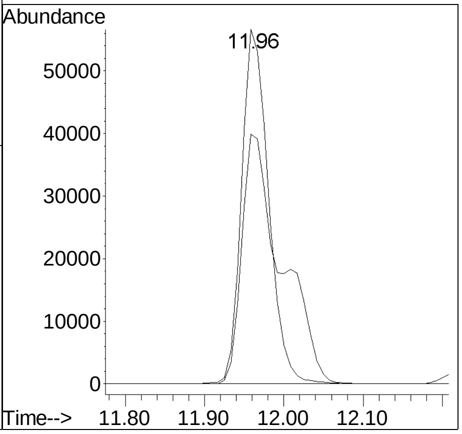
Tgt Ion: 83 Resp:  294577
Ion  Ratio  Lower  Upper
 83  100
 85   63.4   50.1   75.1
129   10.0    8.2   12.2
```

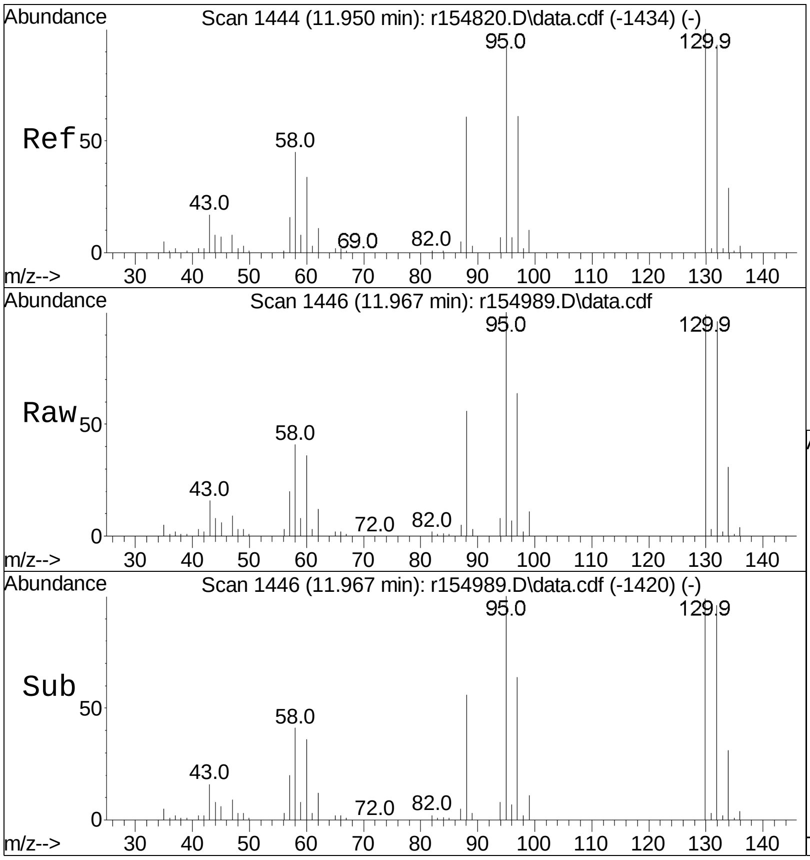




```
#58
1,4-dioxane
Concen:    9.92 ppbV
RT:   11.96 min  Scan# 1445
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

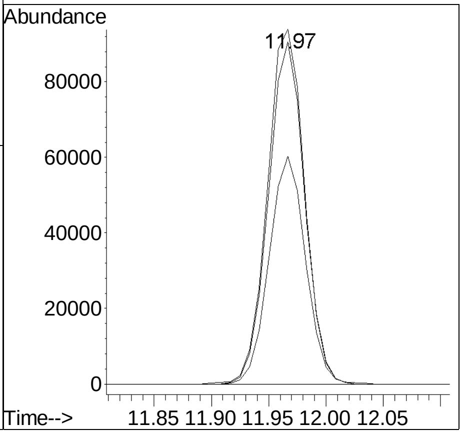
Tgt Ion: 88 Resp:  134319
Ion  Ratio  Lower  Upper
 88  100
 58   70.5   59.0   88.6
```





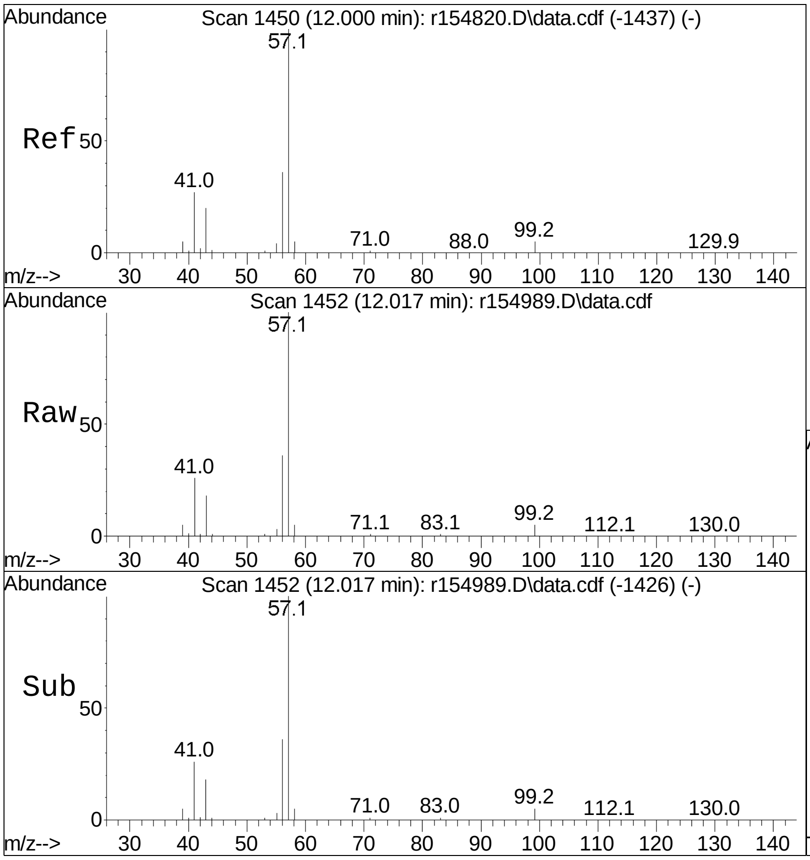
```
#59
trichloroethene
Concen:    9.89 ppbV
RT:   11.97 min  Scan# 1446
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion:130 Resp:  212190
Ion  Ratio  Lower  Upper
130  100
132   96.4   74.2  111.4
 97   64.2   48.8   73.2
```



```
#60
2,2,4-trimethylpentane
Concen:    9.76 ppbV
RT:   12.02 min  Scan# 1452
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

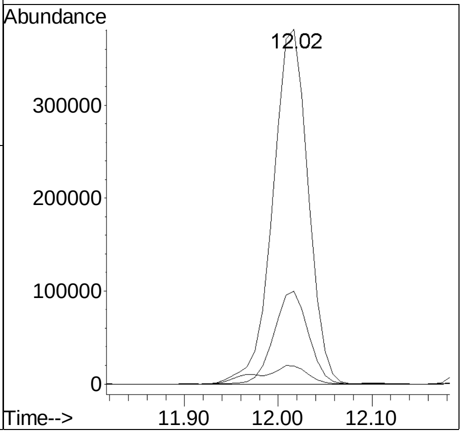
Tgt Ion: 57 Resp: 1000773
Ion  Ratio  Lower  Upper
 57  100
 99    5.1    4.2    6.2
 41   26.1   21.8   32.6
```

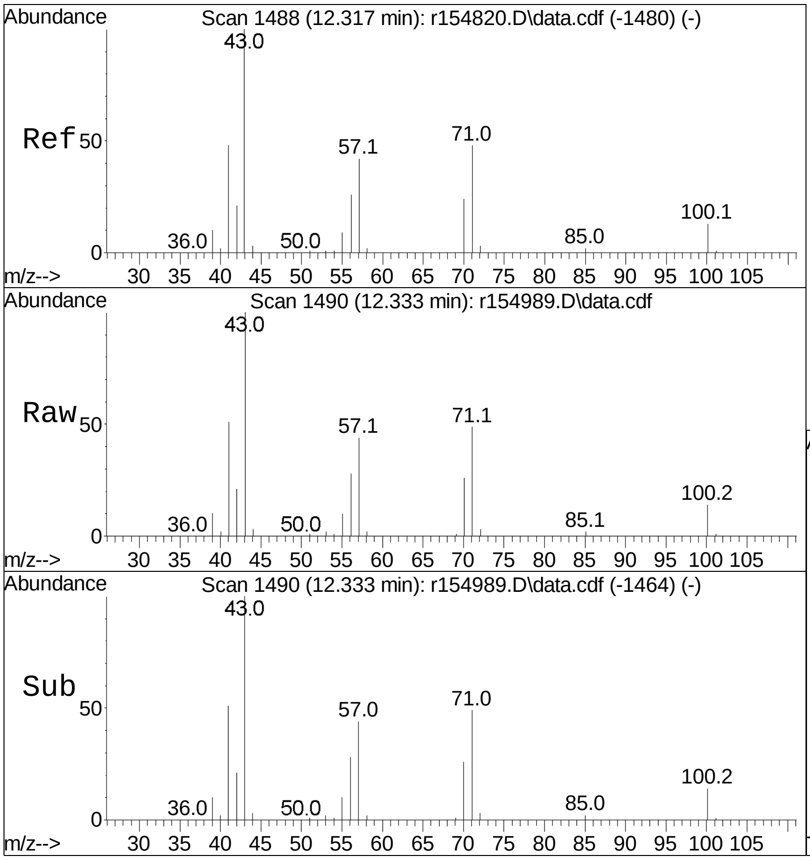


Scan 1450 (12.000 min): r154820.D\data.cdf (-1437) (-)

Scan 1452 (12.017 min): r154989.D\data.cdf

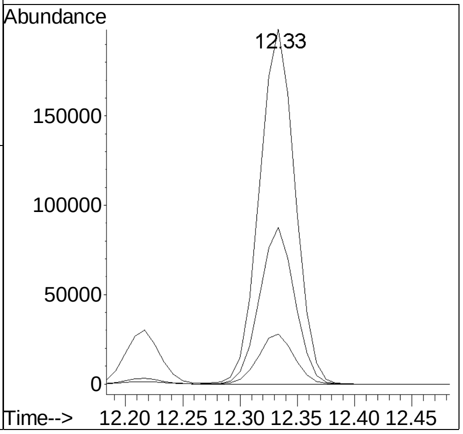
Scan 1452 (12.017 min): r154989.D\data.cdf (-1426) (-)

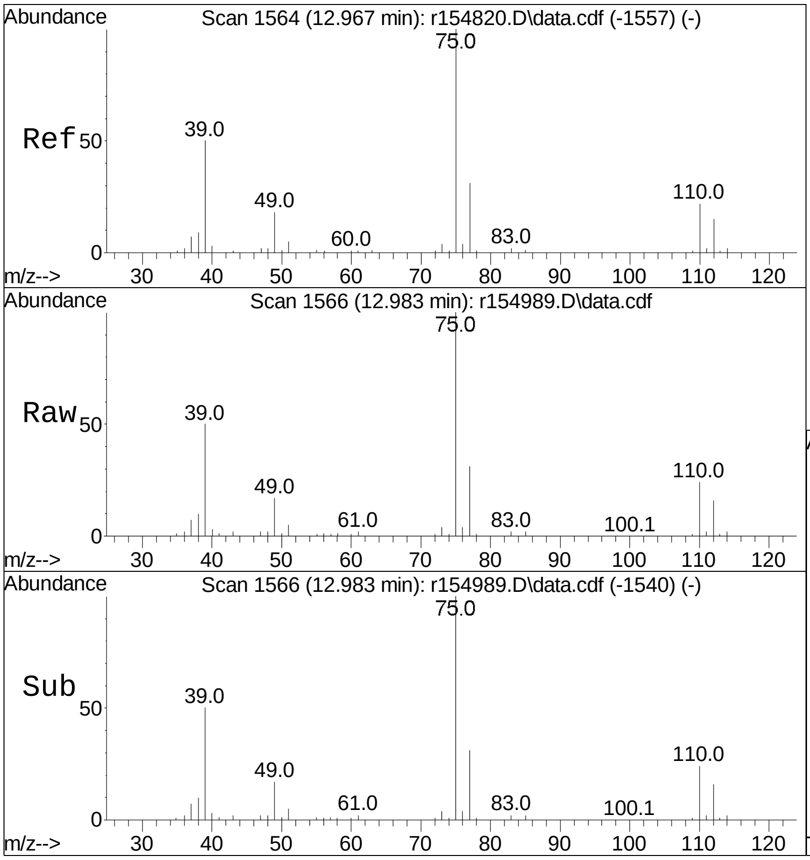




```
#62
heptane
Concen:    9.06 ppbV
RT:   12.33 min  Scan# 1490
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

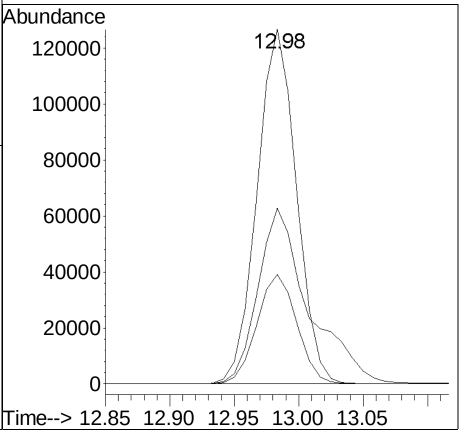
Tgt Ion: 43 Resp:  430113
Ion  Ratio  Lower  Upper
 43  100
 57   44.2   33.3   49.9
100   14.1   10.6   15.8
```

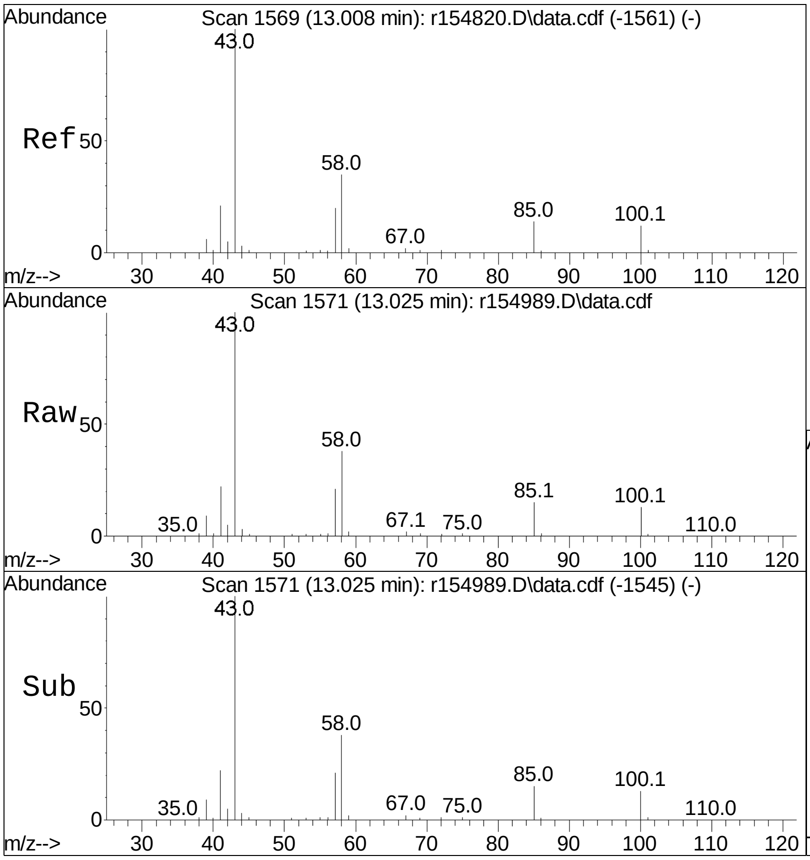




```
#63
cis-1,3-dichloropropene
Concen:    9.76 ppbV
RT:   12.98 min  Scan# 1566
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

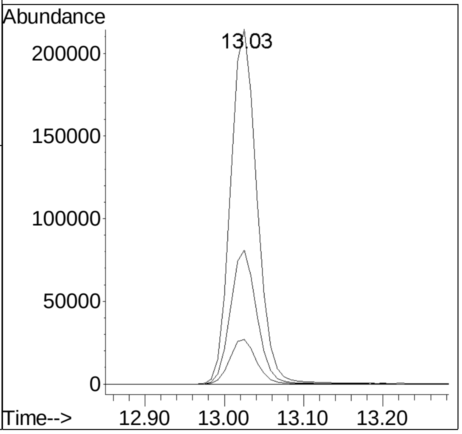
Tgt Ion: 75 Resp:  268618
Ion  Ratio  Lower  Upper
 75  100
 39   49.5   39.7   59.5
 77   30.9   25.0   37.4
```

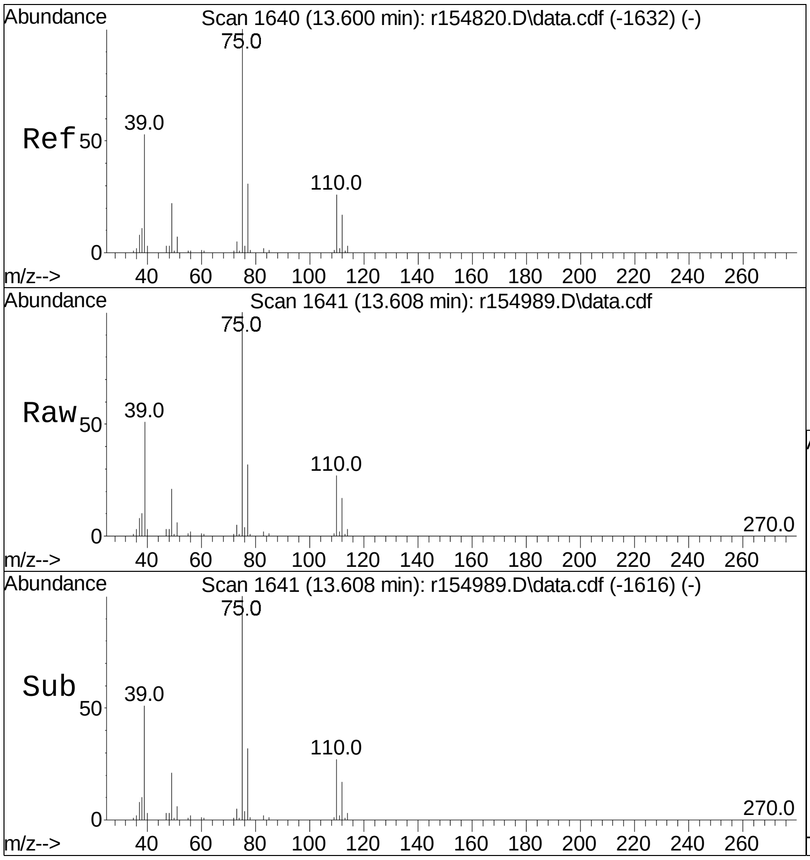




```
#64
4-methyl-2-pentanone
Concen:    9.15 ppbV
RT:   13.03 min  Scan# 1571
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

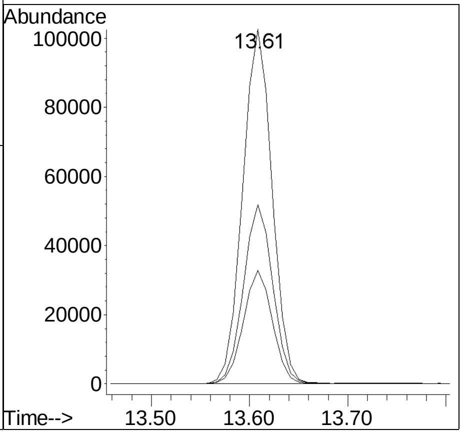
Tgt Ion: 43 Resp:  497752
Ion  Ratio  Lower  Upper
 43  100
 58   37.8   27.8   41.8
100   12.6    9.8   14.8
```

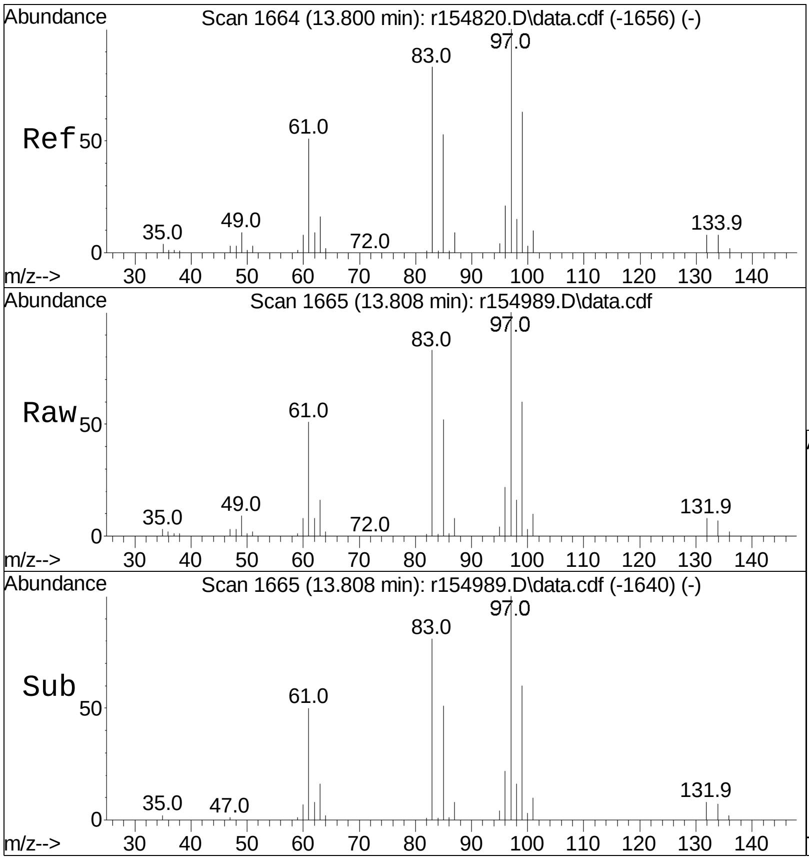




```
#65
trans-1,3-dichloropropene
Concen:    8.39 ppbV
RT:   13.61 min  Scan# 1641
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

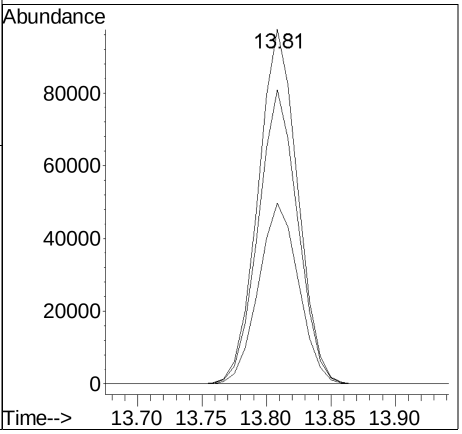
Tgt Ion: 75 Resp:  214245
Ion  Ratio  Lower  Upper
 75  100
 77   32.0   25.0   37.4
 39   50.6   42.5   63.7
```

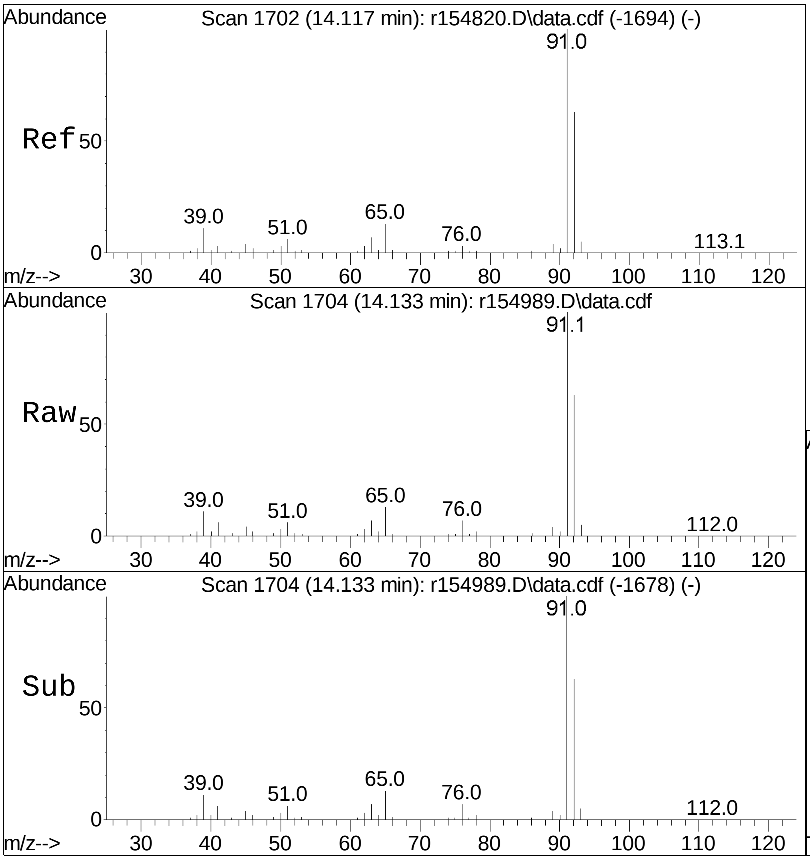




```
#66
1,1,2-trichloroethane
Concen:    9.96 ppbV
RT:   13.81 min  Scan# 1665
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

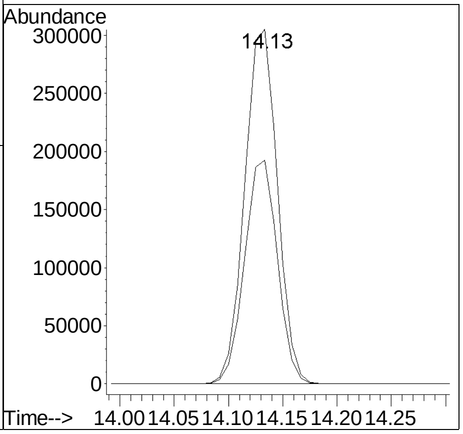
Tgt Ion: 97 Resp:  208308
Ion  Ratio  Lower  Upper
 97  100
 83   83.0   66.7  100.1
 61   51.0   41.0   61.4
```

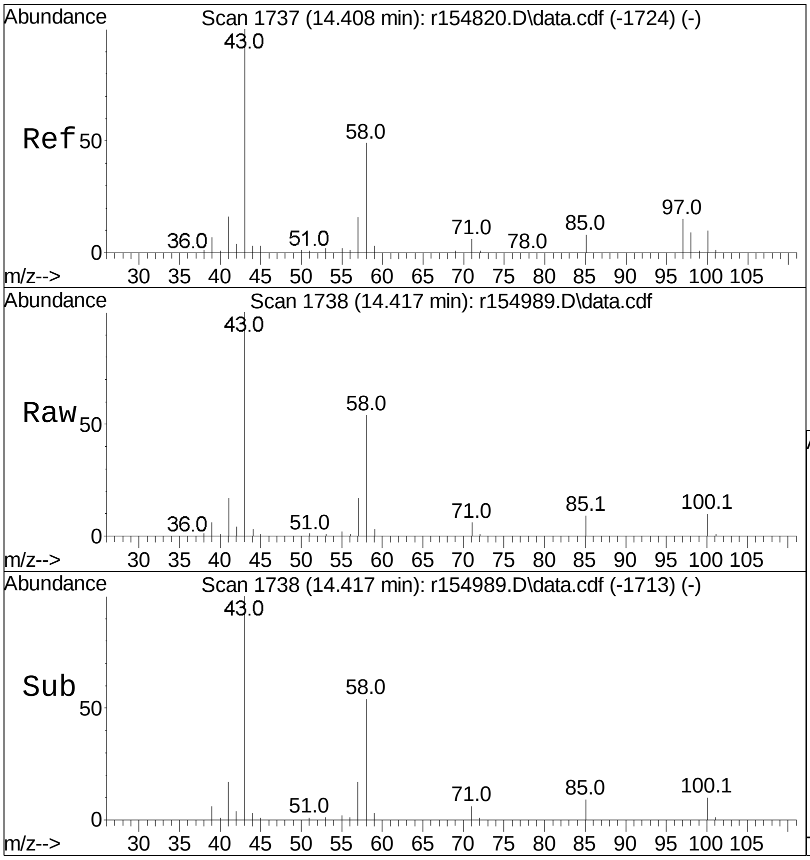




```
#68
toluene
Concen:   10.36 ppbV
RT:   14.13 min  Scan# 1704
Delta R.T.  0.017 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

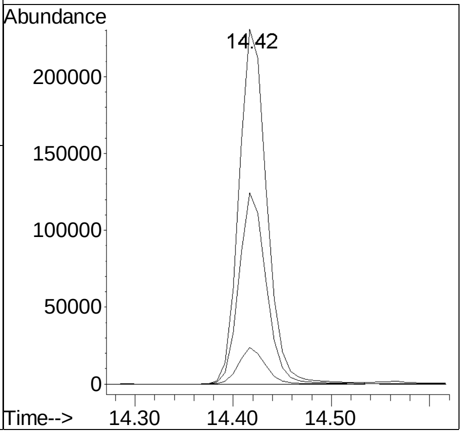
Tgt Ion: 91 Resp:  640829
Ion  Ratio  Lower  Upper
 91  100
 92   63.1   50.6   76.0
```

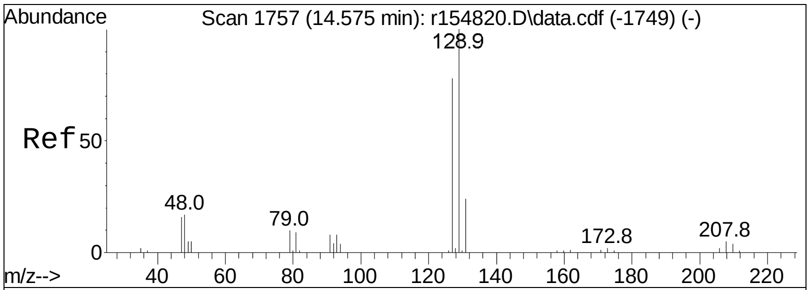


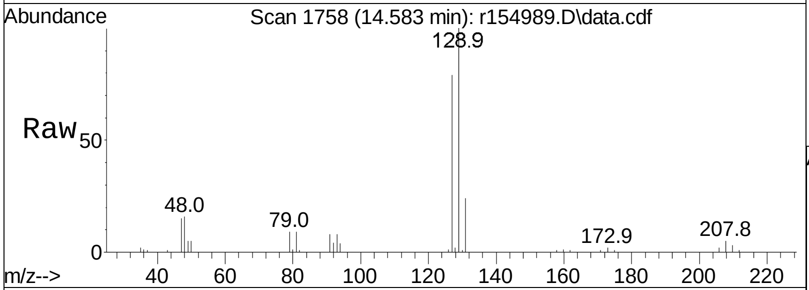


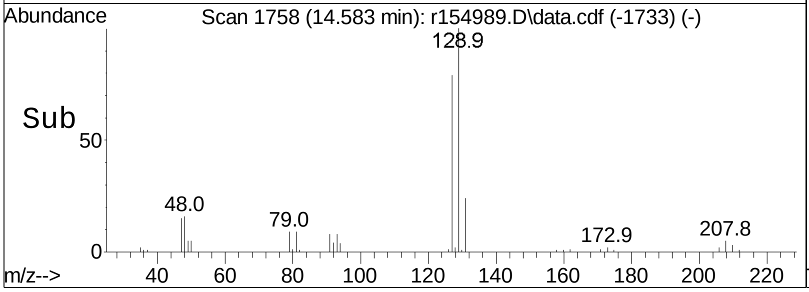
```
#72
2-hexanone
Concen:    9.35 ppbV
RT:   14.42 min  Scan# 1738
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion: 43 Resp:  454255
Ion  Ratio  Lower  Upper
 43  100
 58   53.9   38.9   58.3
100   10.3    7.9   11.9
```





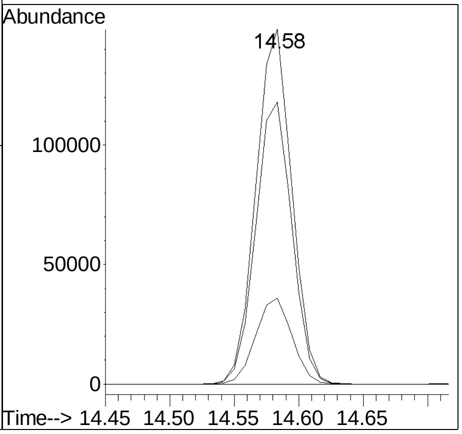


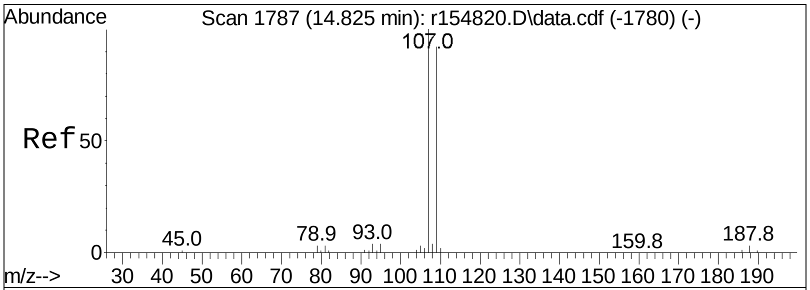


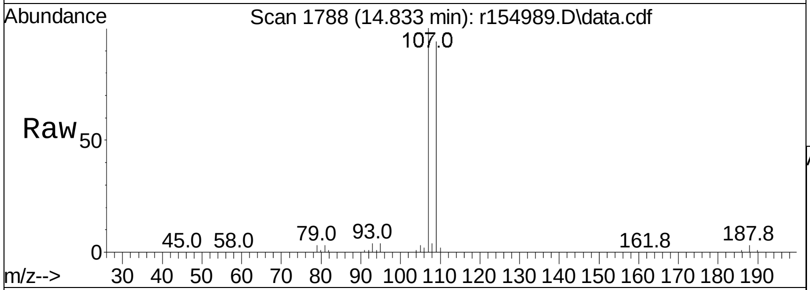
#74
dibromochloromethane
Concen: 11.32 ppbV
RT: 14.58 min Scan# 1758
Delta R.T. 0.008 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

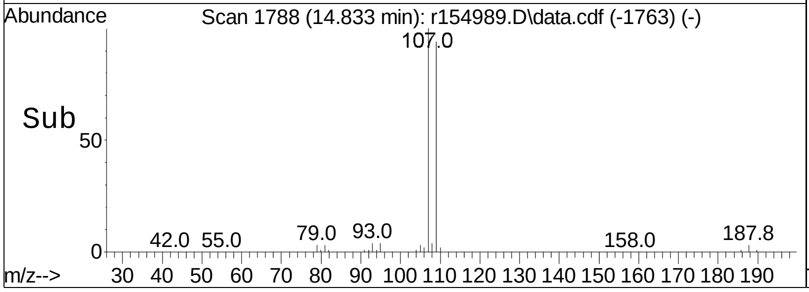
Tgt Ion:129 Resp: 287097

Ion	Ratio	Lower	Upper
129	100		
127	79.4	62.6	93.8
131	24.3	19.4	29.2





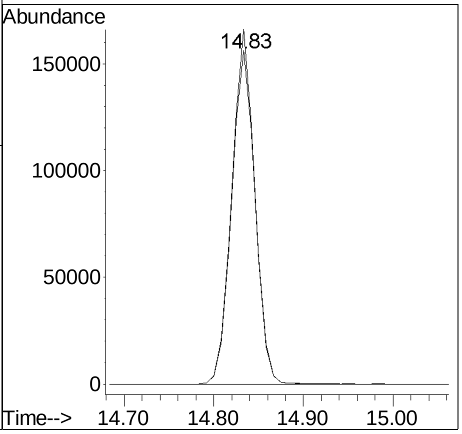


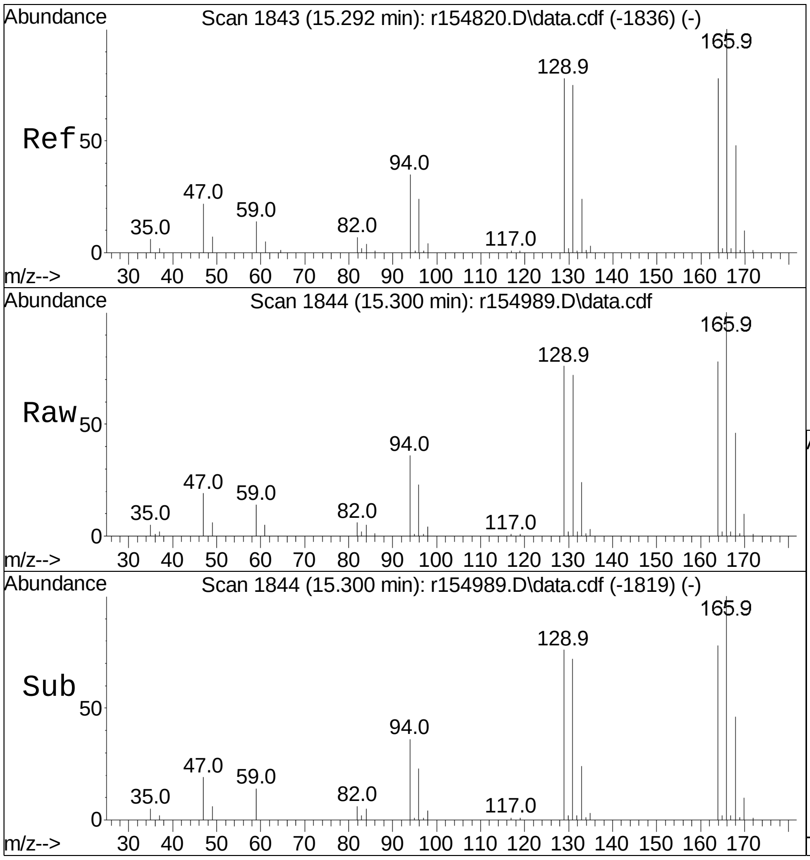


#75
1,2-dibromoethane
Concen: 10.13 ppbV
RT: 14.83 min Scan# 1788
Delta R.T. 0.008 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

Tgt Ion:107 Resp: 295266

Ion	Ratio	Lower	Upper
107	100		
109	94.0	74.0	111.0

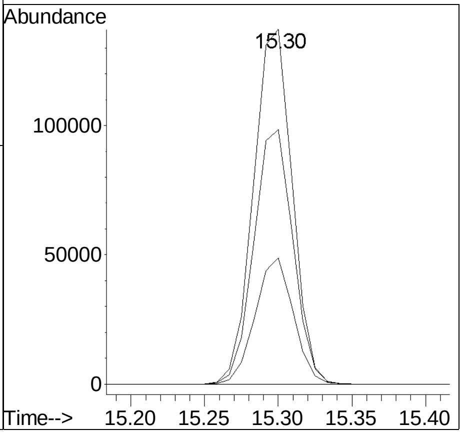


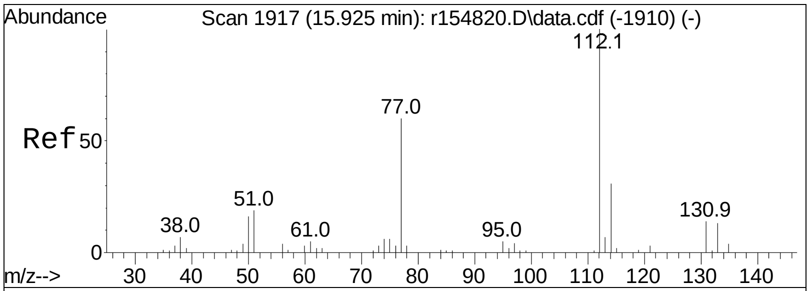


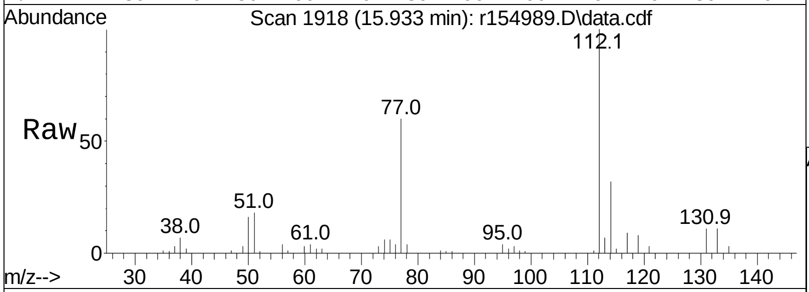
#78
tetrachloroethene
Concen: 10.70 ppbV
RT: 15.30 min Scan# 1844
Delta R.T. 0.008 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

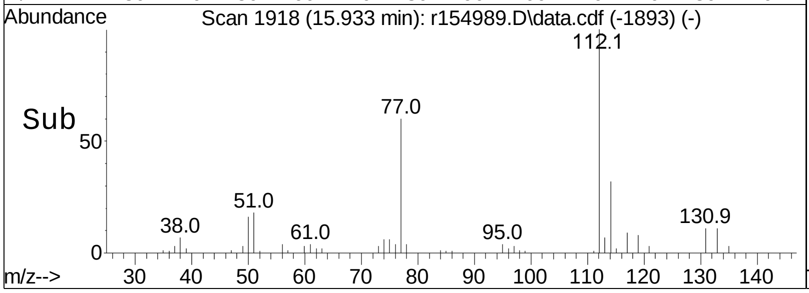
Tgt Ion:166 Resp: 251183

Ion	Ratio	Lower	Upper
166	100		
131	71.7	59.6	89.4
94	35.5	28.1	42.1



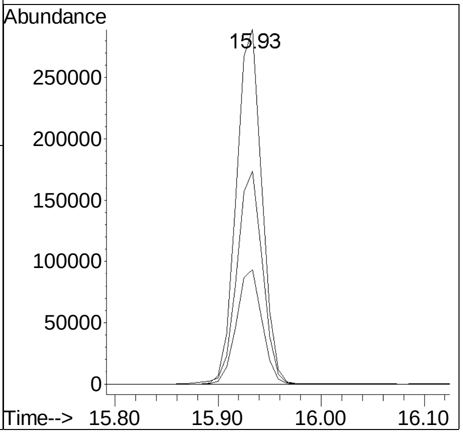


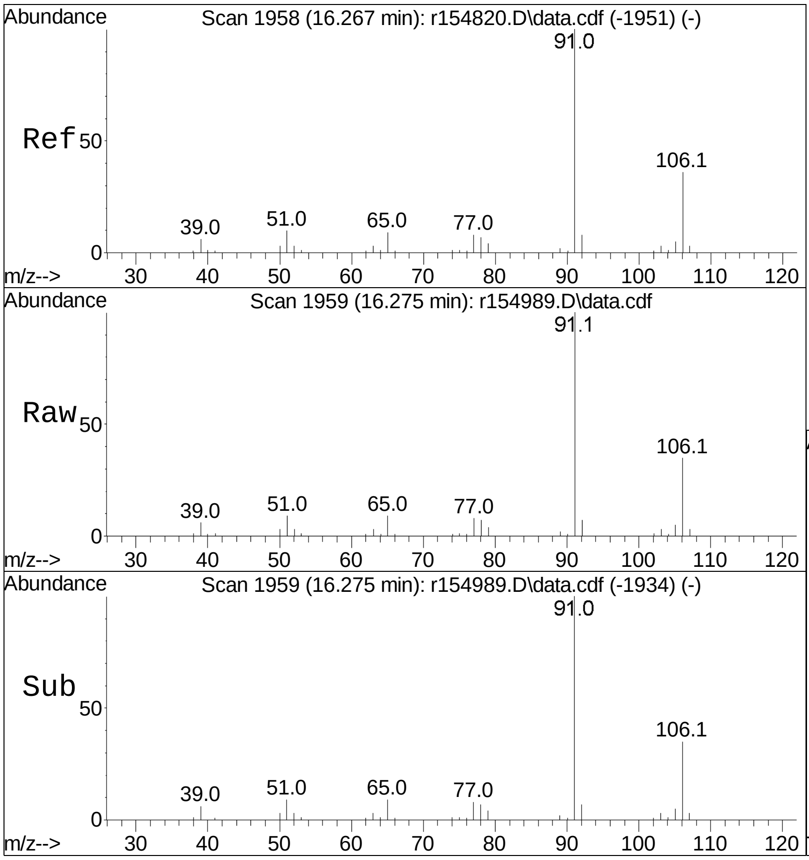




```
#80
chlorobenzene
Concen:   10.36 ppbV
RT:   15.93 min  Scan# 1918
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

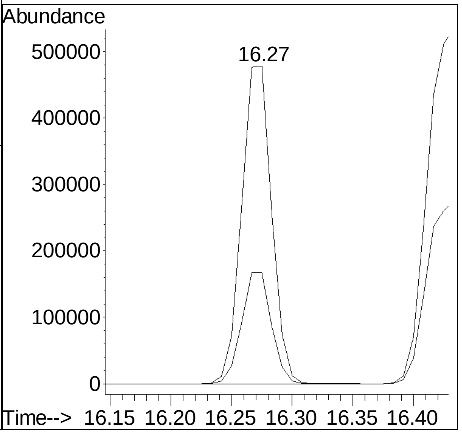
Tgt Ion:112 Resp:  498492
Ion  Ratio  Lower  Upper
112  100
114   32.2   24.8   37.2
 77   60.1   47.8   71.8
```

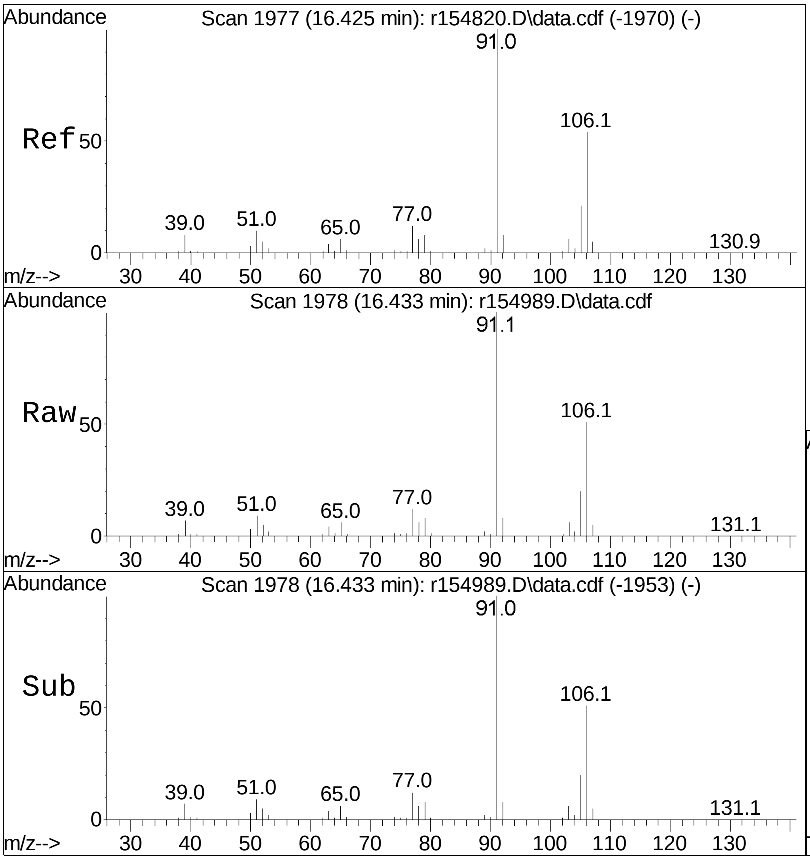




```
#81
ethylbenzene
Concen:   10.53 ppbV
RT:   16.27 min  Scan# 1959
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

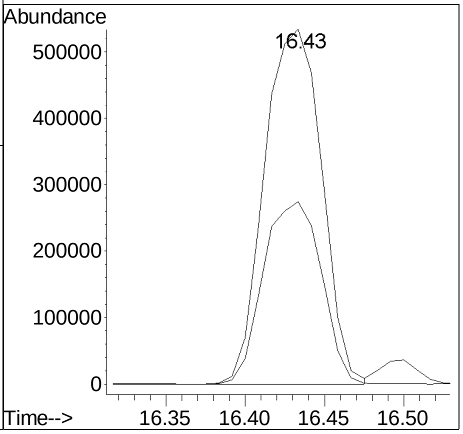
Tgt Ion: 91 Resp:  823824
Ion  Ratio  Lower  Upper
 91  100
106   34.9   28.8   43.2
```

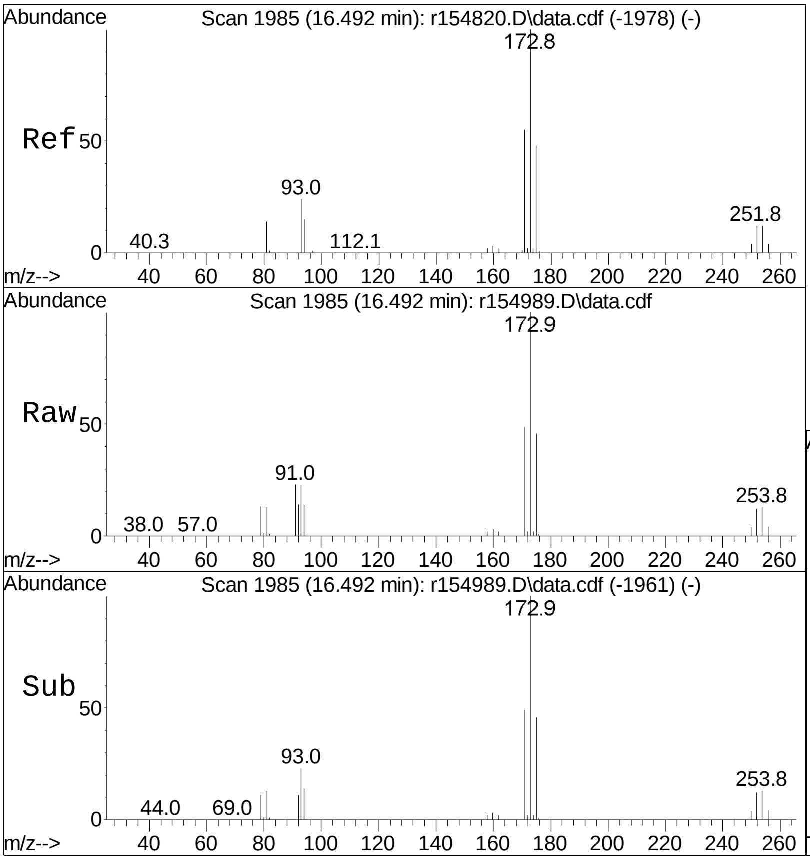




```
#83
m+p-xylene
Concen:   21.25 ppbV
RT:   16.43 min  Scan# 1978
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion: 91 Resp: 1344236
Ion  Ratio  Lower  Upper
 91  100
106   51.4   43.4   65.2
```

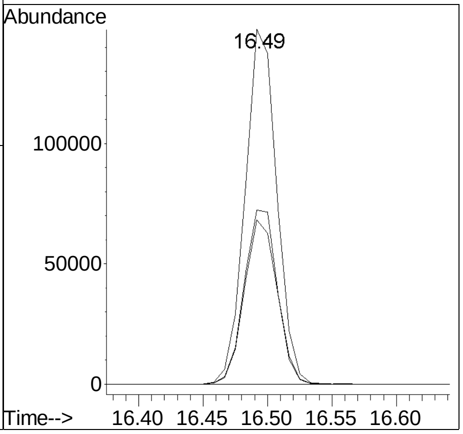


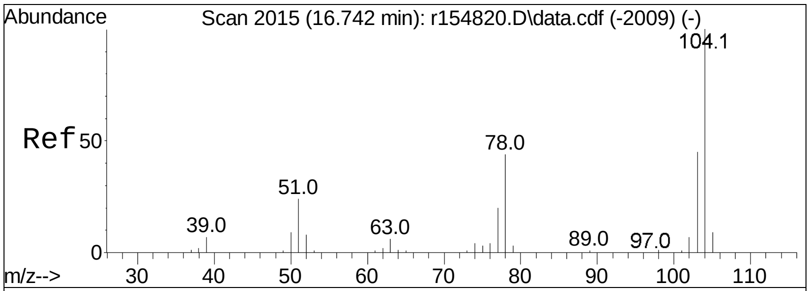


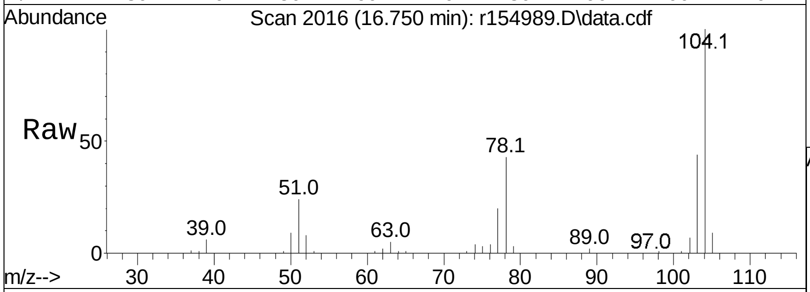
#84
bromoform
Concen: 11.44 ppbV
RT: 16.49 min Scan# 1985
Delta R.T. 0.000 min
Lab File: r154989.D
Acq: 2 Jan 2018 11:33 AM

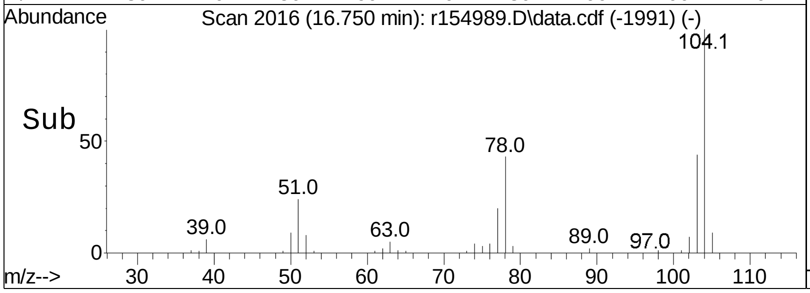
Tgt Ion:173 Resp: 252353

Ion	Ratio	Lower	Upper
173	100		
175	46.2	38.3	57.5
171	49.0	43.8	65.8



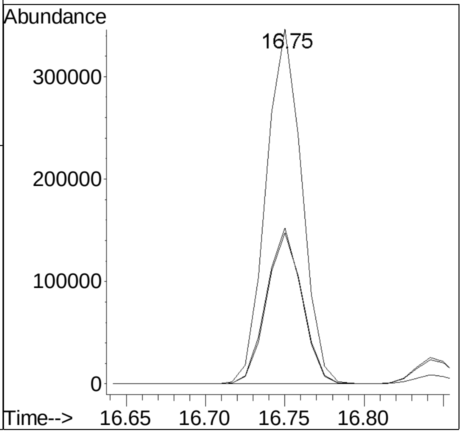


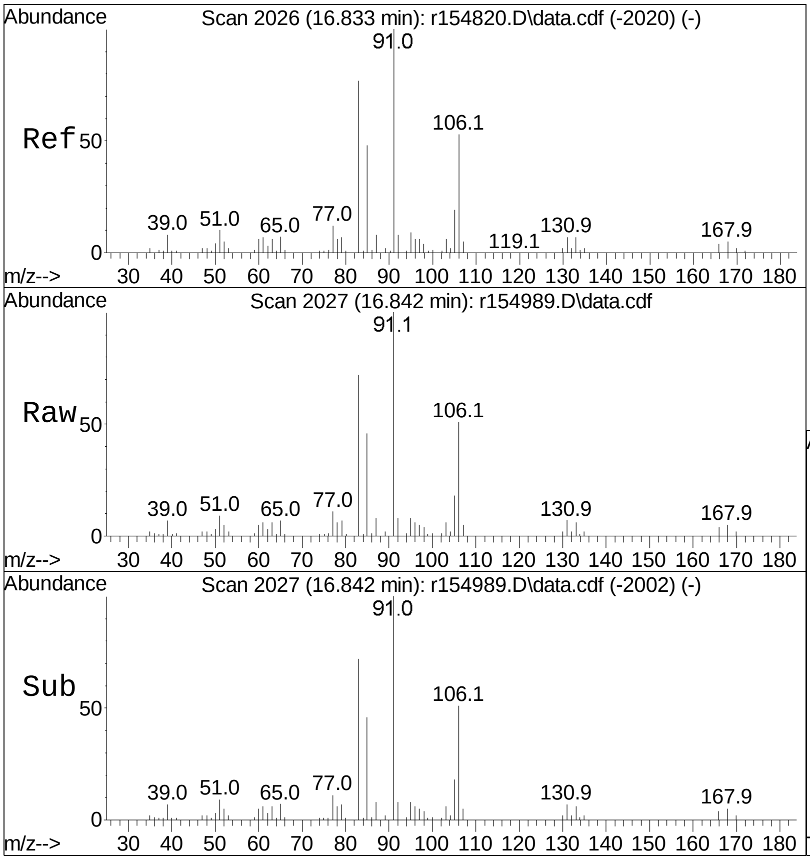




```
#85
styrene
Concen:   10.43 ppbV
RT:   16.75 min  Scan# 2016
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

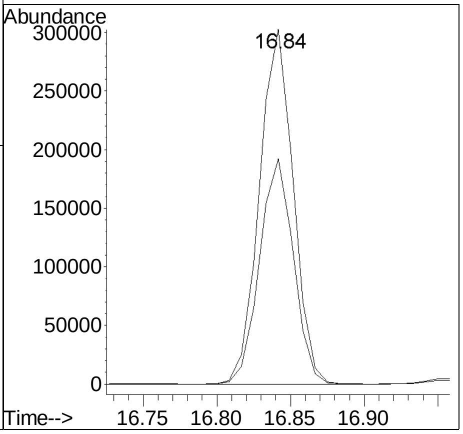
Tgt Ion:104 Resp:  543947
Ion  Ratio  Lower  Upper
104  100
103   44.0   35.9   53.9
 78   42.6   34.8   52.2
```

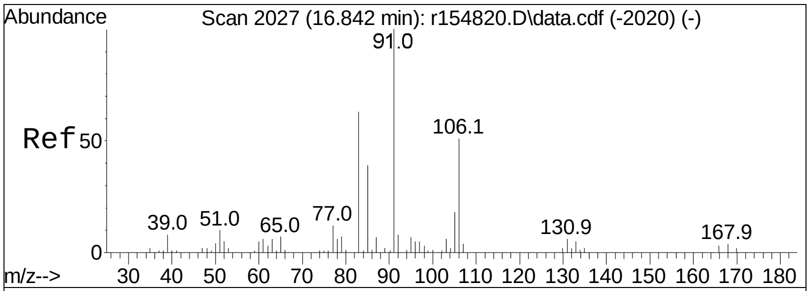


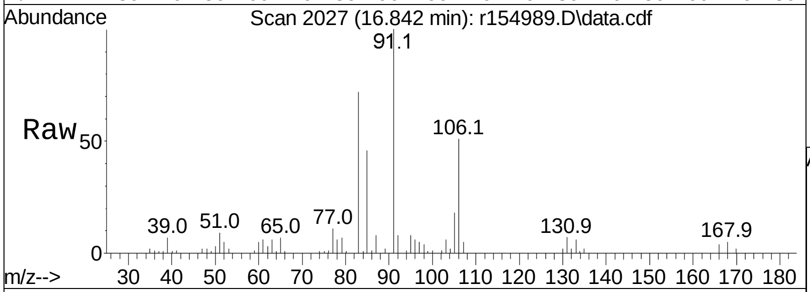


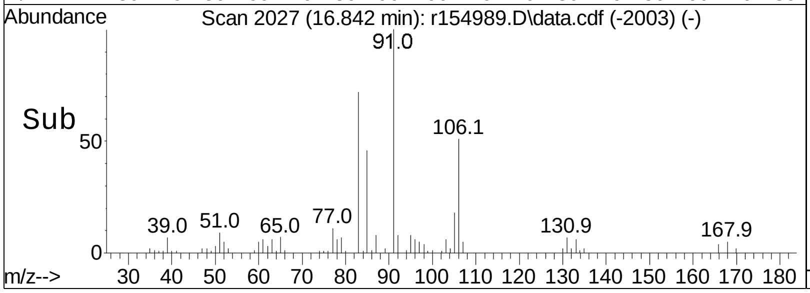
```
#86
1,1,2,2-tetrachloroethane
Concen:   10.84 ppbV
RT:   16.84 min  Scan# 2027
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

Tgt Ion: 83 Resp:  481982
Ion  Ratio  Lower  Upper
 83  100
 85   63.5   50.2   75.4
```



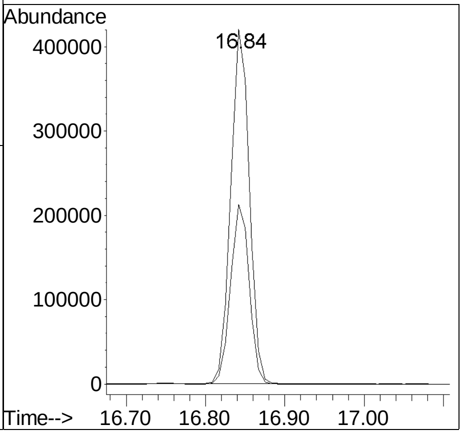


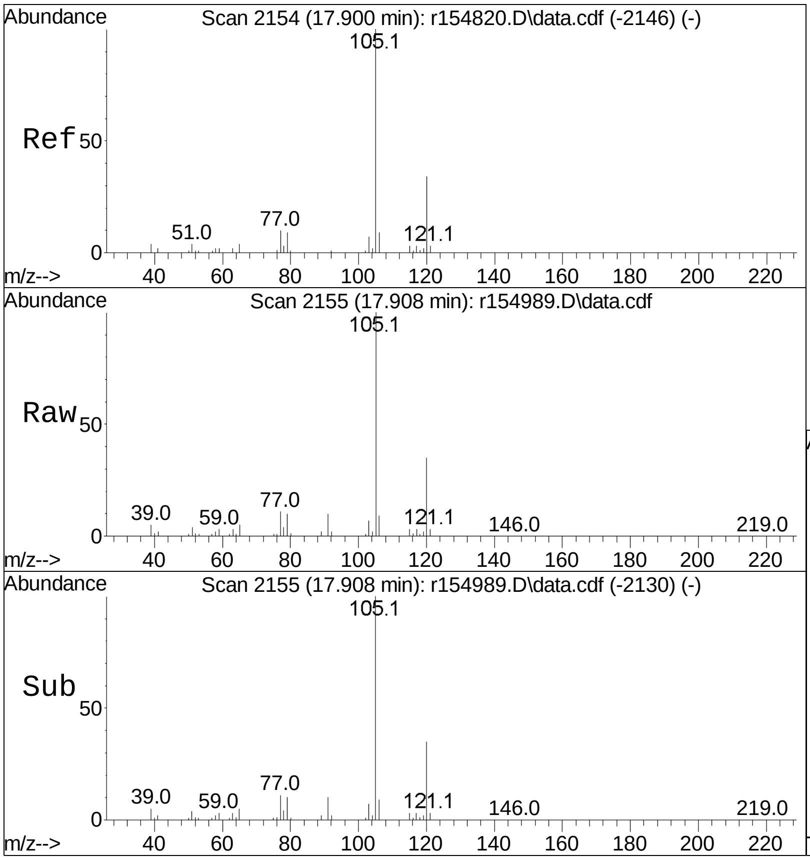




```
#87
o-xylene
Concen:   10.81 ppbV
RT:   16.84 min  Scan# 2027
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

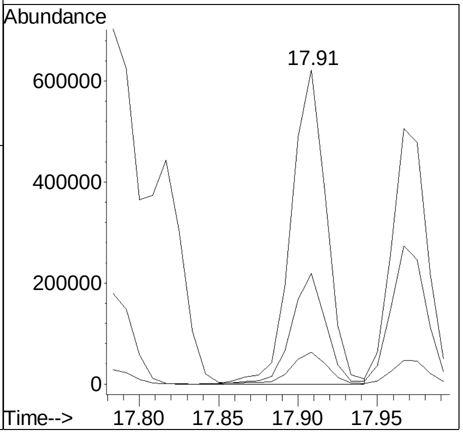
Tgt Ion: 91 Resp:  685421
Ion  Ratio  Lower  Upper
 91  100
106   50.7   40.7   61.1
```

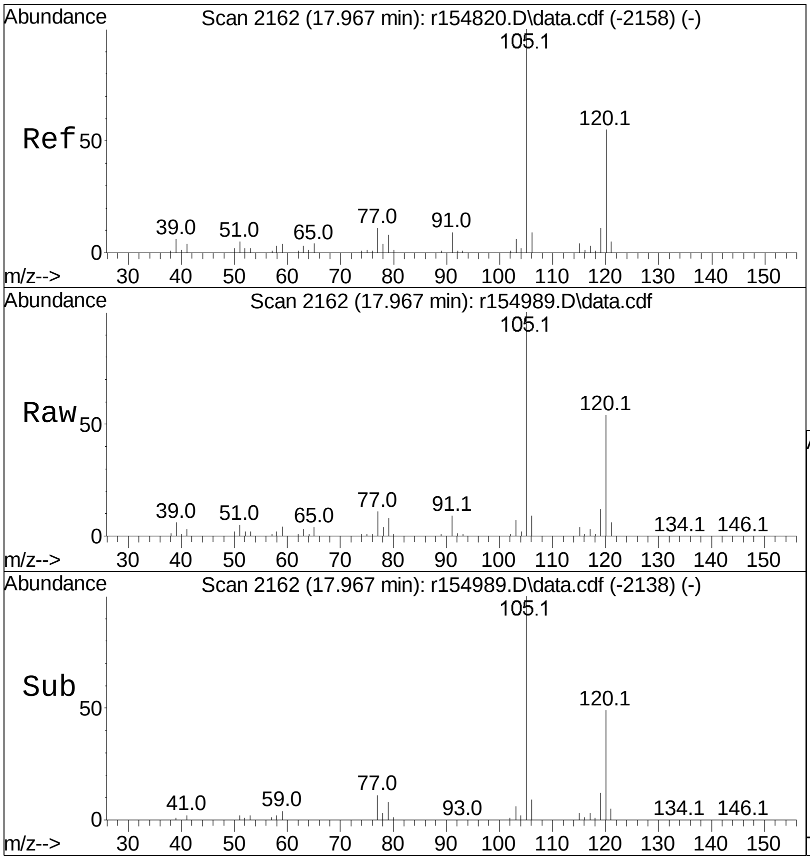




```
#96
4-ethyl toluene
Concen:   10.19 ppbV
RT:   17.91 min  Scan# 2155
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

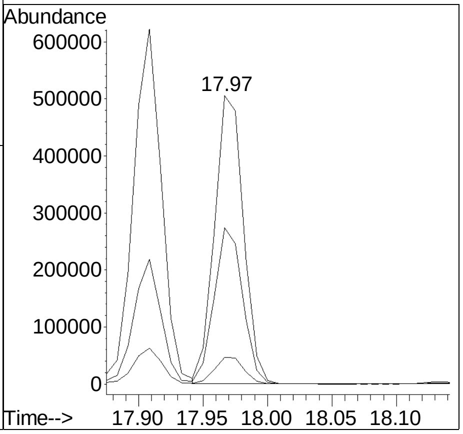
Tgt Ion:105 Resp:  958874
Ion  Ratio  Lower  Upper
105  100
120   35.2   27.4   41.0
 91   10.1    7.6   11.4
```

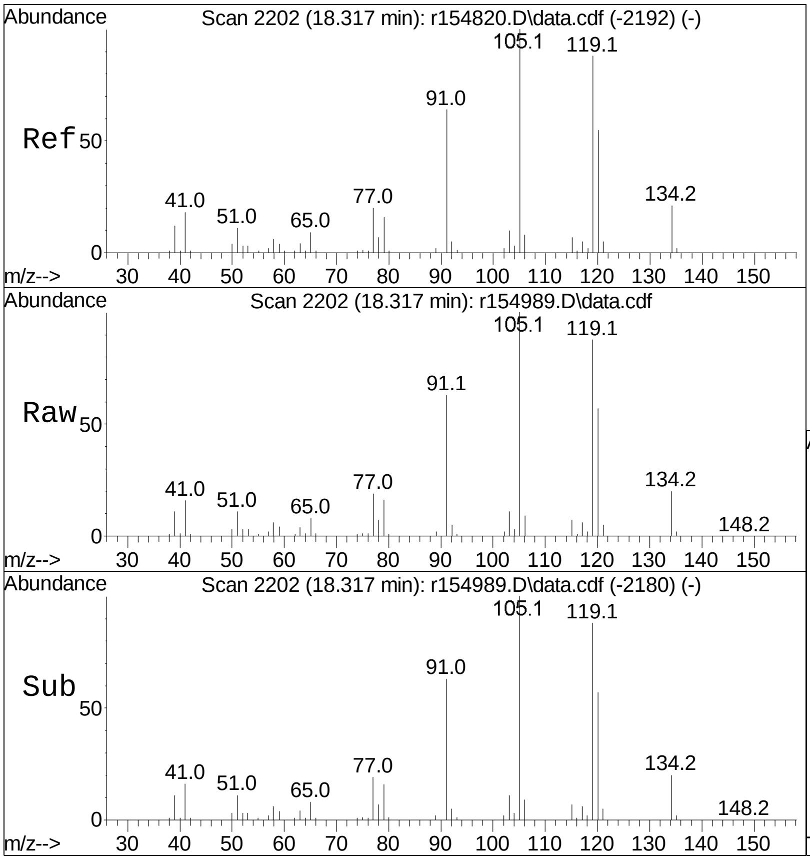




```
#97
1,3,5-trimethylbenzene
Concen:   10.39 ppbV
RT:   17.97 min  Scan# 2162
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

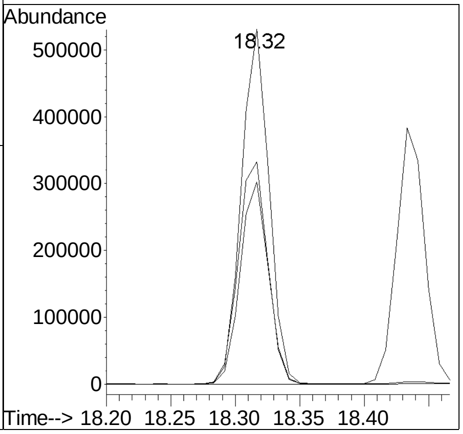
Tgt Ion:105 Resp:  790636
Ion  Ratio  Lower  Upper
105  100
120   54.1   43.4   65.0
 91    9.2    7.4   11.2
```

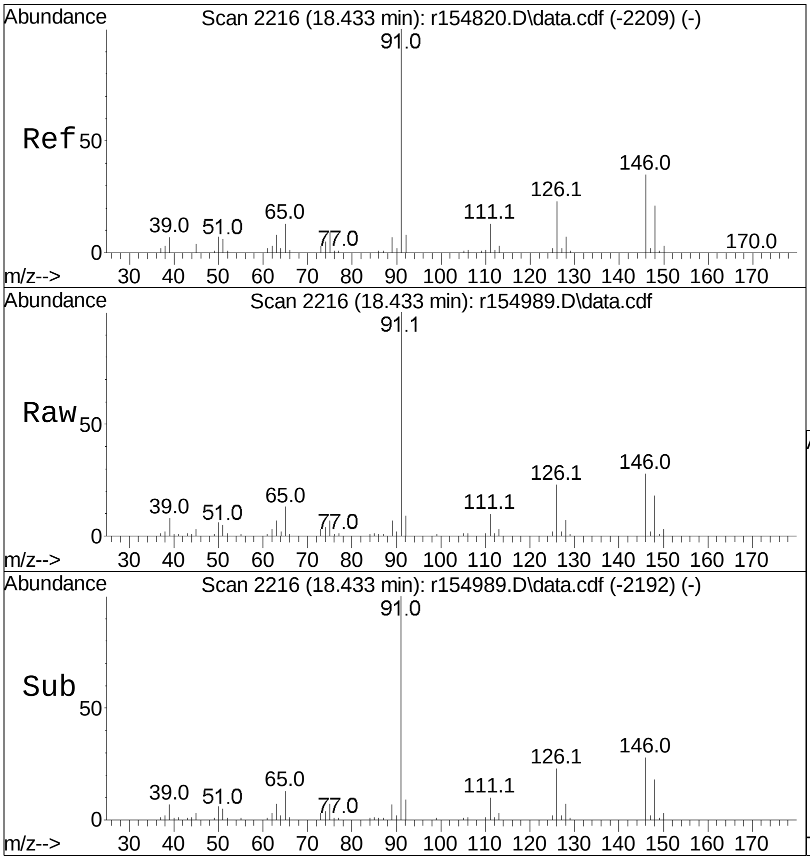




```
#99
1,2,4-trimethylbenzene
Concen:   10.82 ppbV
RT:   18.32 min  Scan# 2202
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

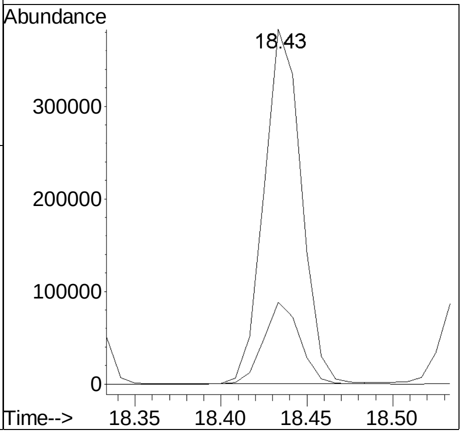
Tgt Ion:105 Resp:  792718
Ion  Ratio  Lower  Upper
105  100
120   56.9   44.2   66.2
 91   62.6   51.6   77.4
```

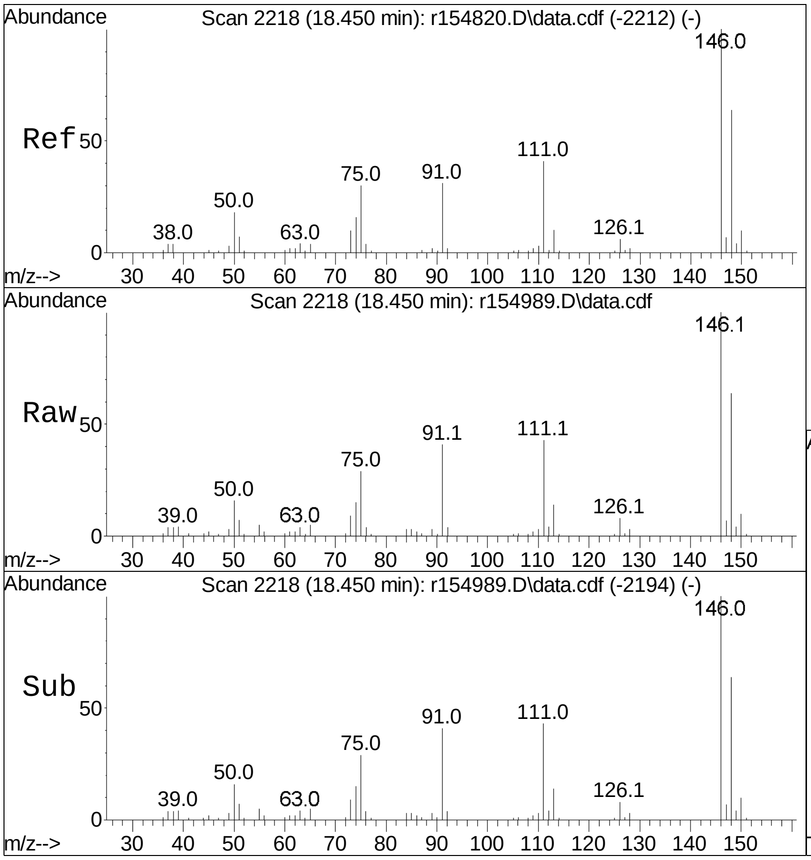




```
#101
Benzyl Chloride
Concen:   10.79 ppbV
RT:   18.43 min  Scan# 2216
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

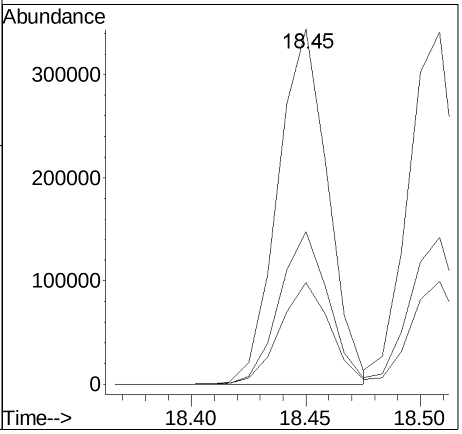
Tgt Ion: 91 Resp:  581247
Ion  Ratio  Lower  Upper
 91  100
126   23.1   18.1   27.1
```

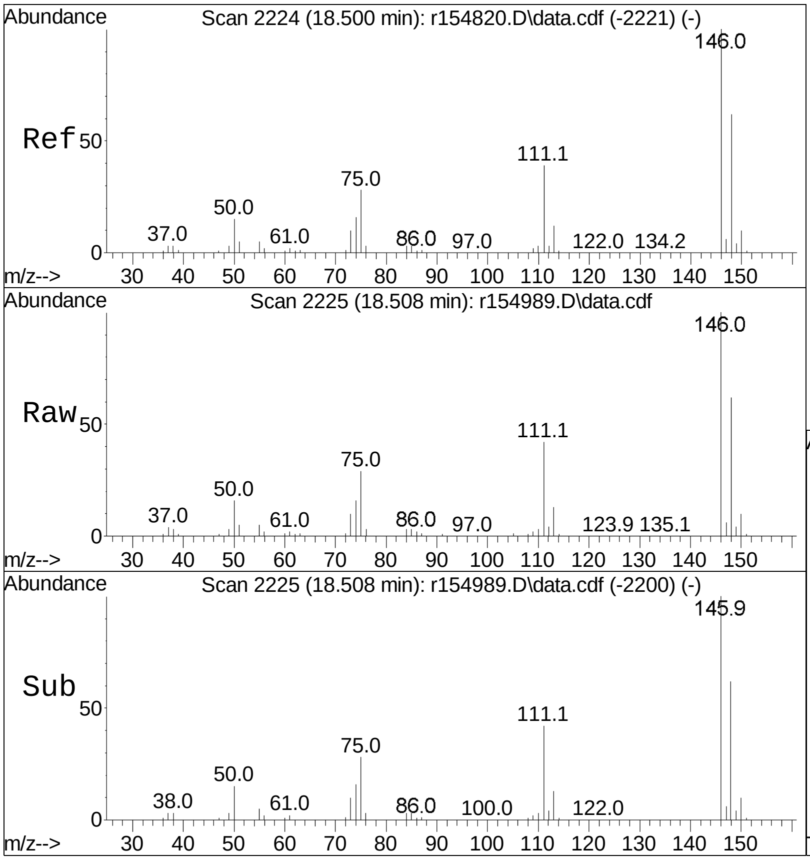




```
#102
1,3-dichlorobenzene
Concen:   10.55 ppbV
RT:   18.45 min  Scan# 2218
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

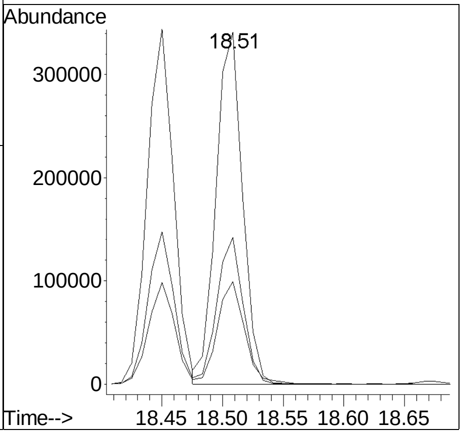
Tgt Ion:146 Resp:  521251
Ion  Ratio  Lower  Upper
146  100
111   42.9   33.1   49.7
 75   28.6   24.2   36.2
```

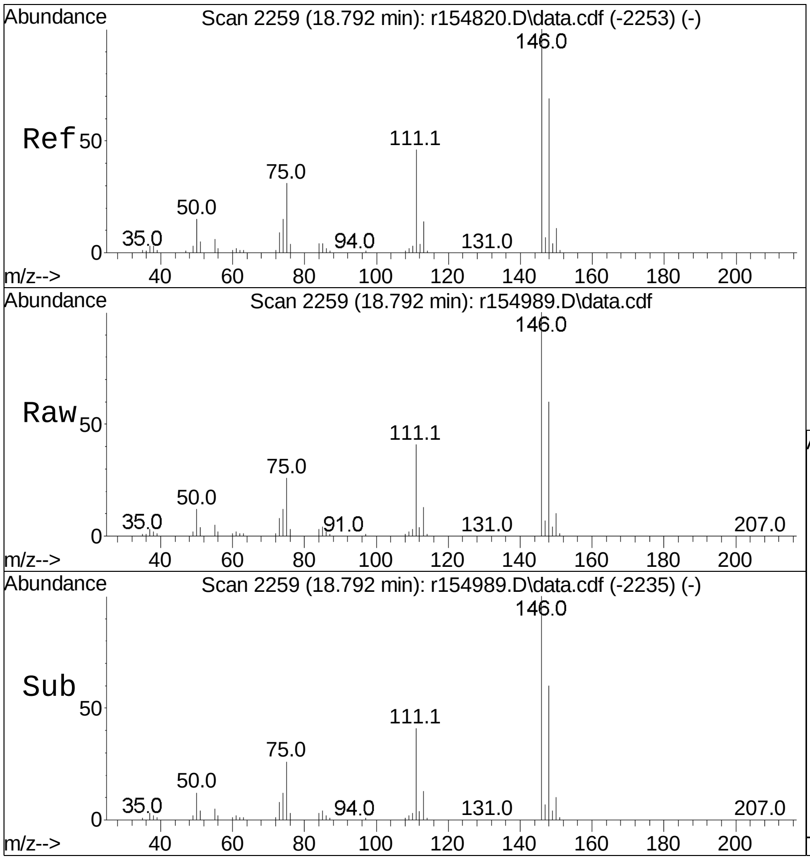




```
#103
1,4-dichlorobenzene
Concen:   10.39 ppbV
RT:   18.51 min  Scan# 2225
Delta R.T.  0.008 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

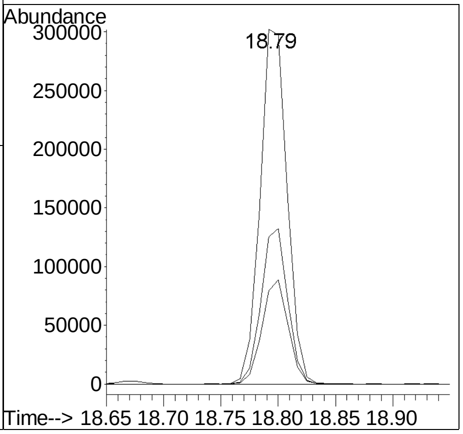
Tgt Ion:146 Resp:  518708
Ion  Ratio  Lower  Upper
146  100
111   41.7   31.5   47.3
 75   29.1   22.2   33.2
```

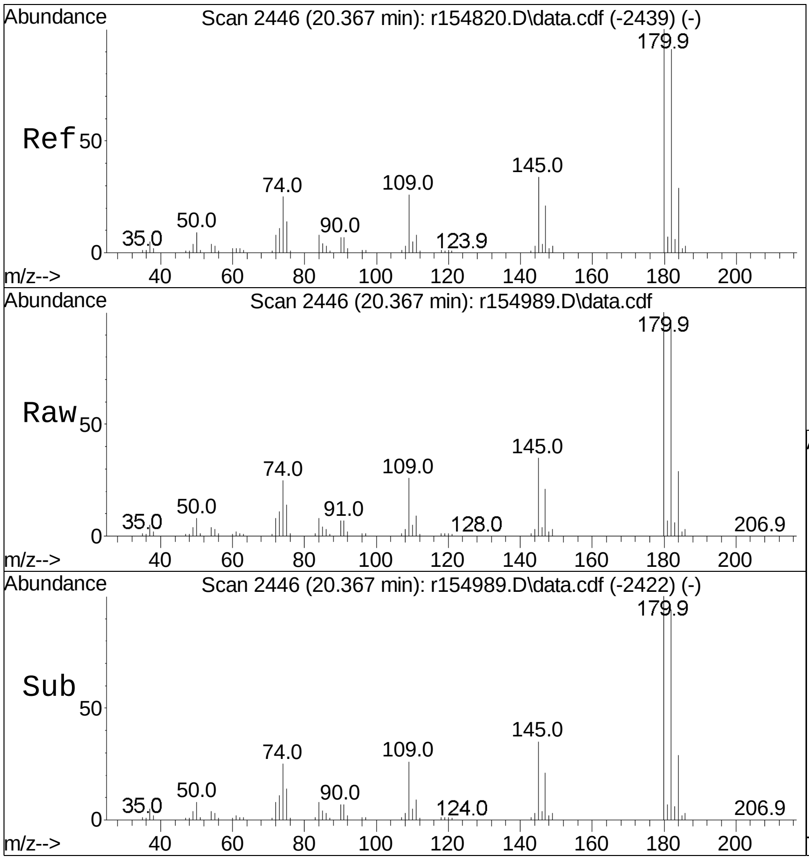




```
#107
1,2-dichlorobenzene
Concen:   10.73 ppbV
RT:    18.79 min  Scan# 2259
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

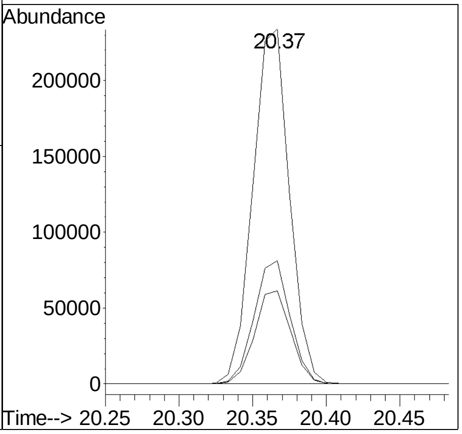
Tgt Ion:146 Resp:  496151
Ion  Ratio  Lower  Upper
146  100
111   41.4   37.0   55.6
 75   26.2   24.8   37.2
```

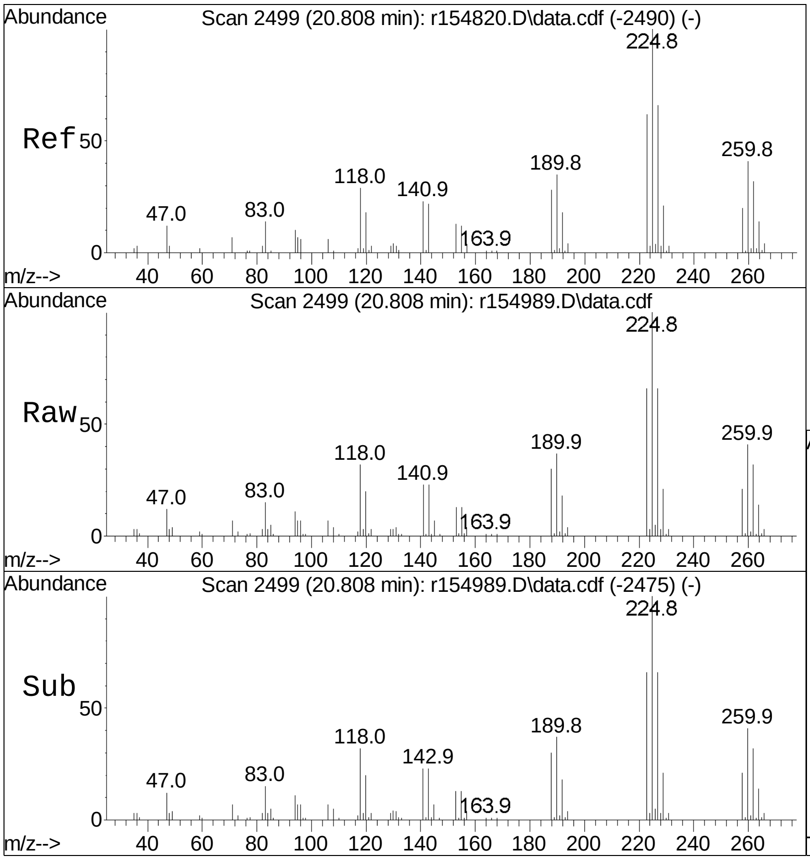




```
#115
1,2,4-trichlorobenzene
Concen:   11.28 ppbV
RT:   20.37 min  Scan# 2446
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

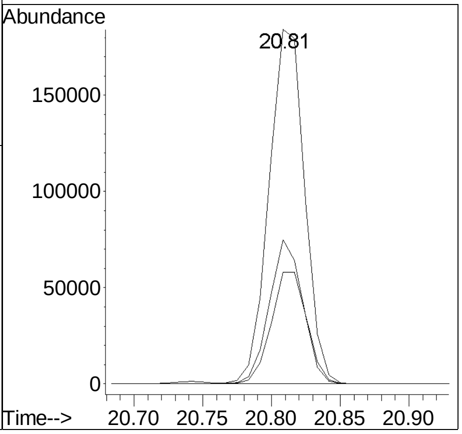
Tgt Ion:180 Resp:  404561
Ion  Ratio  Lower  Upper
180  100
145   34.7   27.1   40.7
109   26.3   21.0   31.6
```





```
#119
hexachlorobutadiene
Concen:   11.46 ppbV
RT:   20.81 min  Scan# 2499
Delta R.T.  0.000 min
Lab File:   r154989.D
Acq:  2 Jan 2018  11:33 AM

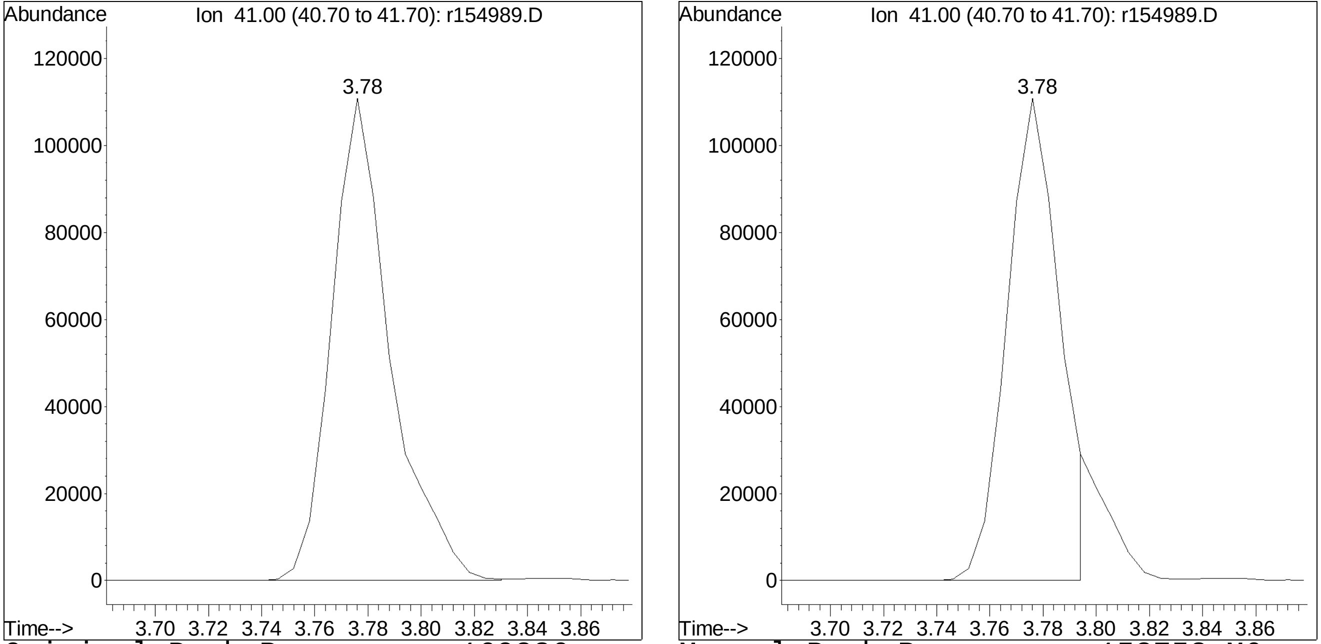
Tgt Ion:225 Resp:  332772
Ion  Ratio  Lower  Upper
225  100
260   40.7   32.5   48.7
118   31.5   23.9   35.9
```



Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154989.D
Date Inj'd : 1/2/2018 11:33 AM
Sample : WG1078148-3,3,250,250
QMethod : TALL171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 1/2/2018 12:27 pm

Compound #3: propylene

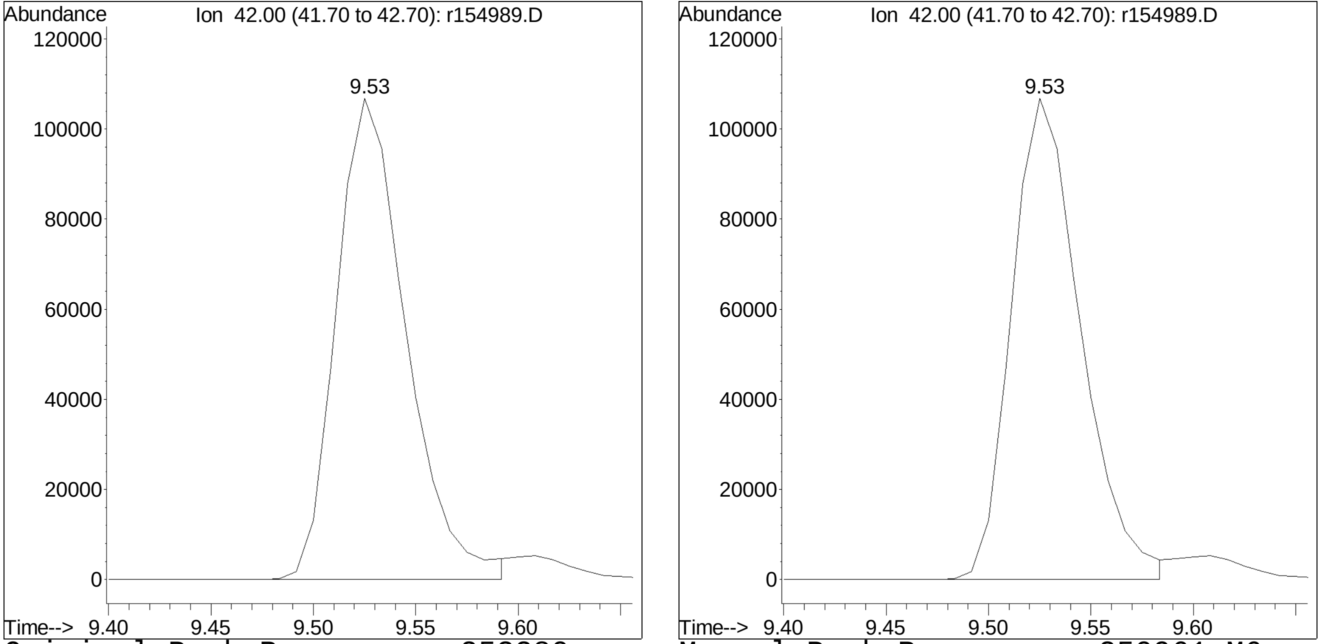


Original Peak Response = 169836 Manual Peak Response = 153753 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154989.D                   Operator   : AIRLAB15:RY
Date Inj'd  : 1/2/2018 11:33 AM           Instrument :
Sample      : WG1078148-3,3,250,250       Quant Date : 1/2/2018 12:27 pm
```

Compound #40: Tetrahydrofuran



Original Peak Response = 253280   Manual Peak Response = 250961 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
  Data File : r154995.D
  Acq On    :  2 Jan 2018   6:50 PM
  Operator  : AIRLAB15:RY
  Sample    : WG1078148-5,3,250,250
  Misc      : WG1078148,ICAL14299
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 03 11:39:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:18:16 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
  Sub List     : TO15-NY-7-SIM - .

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane            8.92   49   208518    10.000 ppbV     0.00
     Standard Area  =       220148                 Recovery   =   94.72%
    43) 1,4-difluorobenzene          11.16  114   537771    10.000 ppbV     0.00
     Standard Area  =       557225                 Recovery   =   96.51%
    67) chlorobenzene-D5             15.89   54    92788    10.000 ppbV     0.00
     Standard Area  =        97822                 Recovery   =   94.85%

   System Monitoring Compounds

   Target Compounds                                                  Qvalue
     5) dichlorodifluoromethane       3.85   85     10569      0.470 ppbV      98
     6) chloromethane                 4.01   50      6086      0.475 ppbV      99
     7) Freon-114                     4.11              0       N.D.
    10) 1,3-butadiene                 4.36              0       N.D.
    13) bromomethane                  0.00              0       N.D.
    14) chloroethane                  0.00              0       N.D.
    15) ethanol                       4.96   31     42414      4.603 ppbV      93
    17) vinyl bromide                 0.00              0       N.D.
    19) acetone                       5.47   43    599766     41.030 ppbV      99
    21) trichlorofluoromethane        5.66  101      4249      0.245 ppbV      95
    22) isopropyl alcohol             5.75   45    705858     33.341 ppbV     100
    27) tertiary butyl alcohol        6.42   59      3444      0.172 ppbV #    79
    28) methylene chloride            6.49   49      2397      0.156 ppbV      99
    29) 3-chloropropene               0.00              0       N.D. d
    30) carbon disulfide              6.81              0       N.D.
    31) Freon 113                     6.80  101      1417      0.067 ppbV #    95
    32) trans-1,2-dichloroethene      0.00              0       N.D.
    33) 1,1-dichloroethane            0.00              0       N.D.
    34) MTBE                          0.00              0       N.D.
    36) 2-butanone                    8.24   43     10948      0.278 ppbV #    99
    38) Ethyl Acetate                 9.03   61       625      0.111 ppbV #    36
    39) chloroform                    9.07   83      1220      0.053 ppbV      93
    40) Tetrahydrofuran               9.55   42      5271      0.215 ppbV      95
    42) 1,2-dichloroethane            0.00              0       N.D.
    44) hexane                        8.98   57      6616      0.224 ppbV #    27
    50) benzene                      10.73   78      9547      0.175 ppbV      98
    53) cyclohexane                  11.04   56      3571      0.112 ppbV      93
    56) 1,2-dichloropropane           0.00              0       N.D.
    57) bromodichloromethane          0.00              0       N.D. d
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154995.D
Acq On    :  2 Jan 2018   6:50 PM
Operator  : AIRLAB15:RY
Sample    : WG1078148-5,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:39:00 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102T\r154988.D
Sub List     : TO15-NY-7-SIM - .

        Compound                      R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
  58) 1,4-dioxane                     0.00              0       N.D.
  60) 2,2,4-trimethylpentane         12.01   57     31990      0.325 ppbV #    84
  62) heptane                        12.33   43    157471      3.454 ppbV      96
  63) cis-1,3-dichloropropene         0.00              0       N.D.
  64) 4-methyl-2-pentanone            0.00              0       N.D. d
  65) trans-1,3-dichloropropene       0.00              0       N.D.
  66) 1,1,2-trichloroethane           0.00              0       N.D.
  68) toluene                        14.13   91    151574      2.555 ppbV     100
  72) 2-hexanone                      0.00              0       N.D. d
  74) dibromochloromethane            0.00              0       N.D.
  75) 1,2-dibromoethane               0.00              0       N.D.
  80) chlorobenzene                   0.00              0       N.D. d
  81) ethylbenzene                   16.27   91    239879      3.199 ppbV      97
  83) m+p-xylene                     16.43   91    831870     13.716 ppbV      98
  84) bromoform                       0.00              0       N.D.
  85) styrene                        16.75  104     14622      0.292 ppbV      96
  86) 1,1,2,2-tetrachloroethane       0.00              0       N.D. d
  87) o-xylene                       16.84   91    260554      4.288 ppbV      99
  96) 4-ethyl toluene                17.91  105    148223M3    1.643 ppbV
  97) 1,3,5-trimethylbenzene         17.97  105    141725      1.943 ppbV     100
  99) 1,2,4-trimethylbenzene         18.32  105    498202      7.092 ppbV #    61
 101) Benzyl Chloride                 0.00              0       N.D. d
 102) 1,3-dichlorobenzene            18.51              0       N.D.
 103) 1,4-dichlorobenzene            18.51              0       N.D.
 107) 1,2-dichlorobenzene             0.00              0       N.D.
 115) 1,2,4-trichlorobenzene          0.00              0       N.D.
 119) hexachlorobutadiene             0.00              0       N.D.
 --------------------------------------------------------------------------

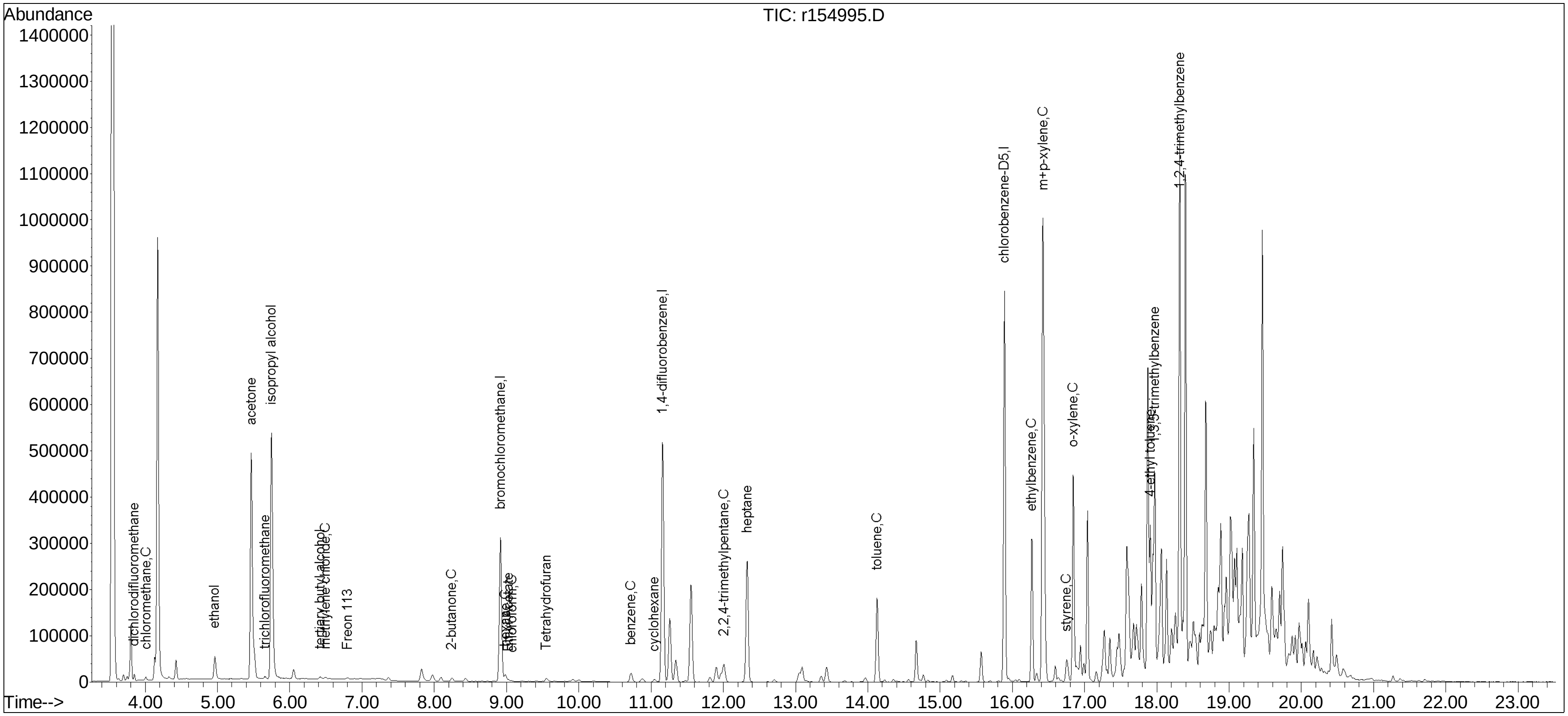
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

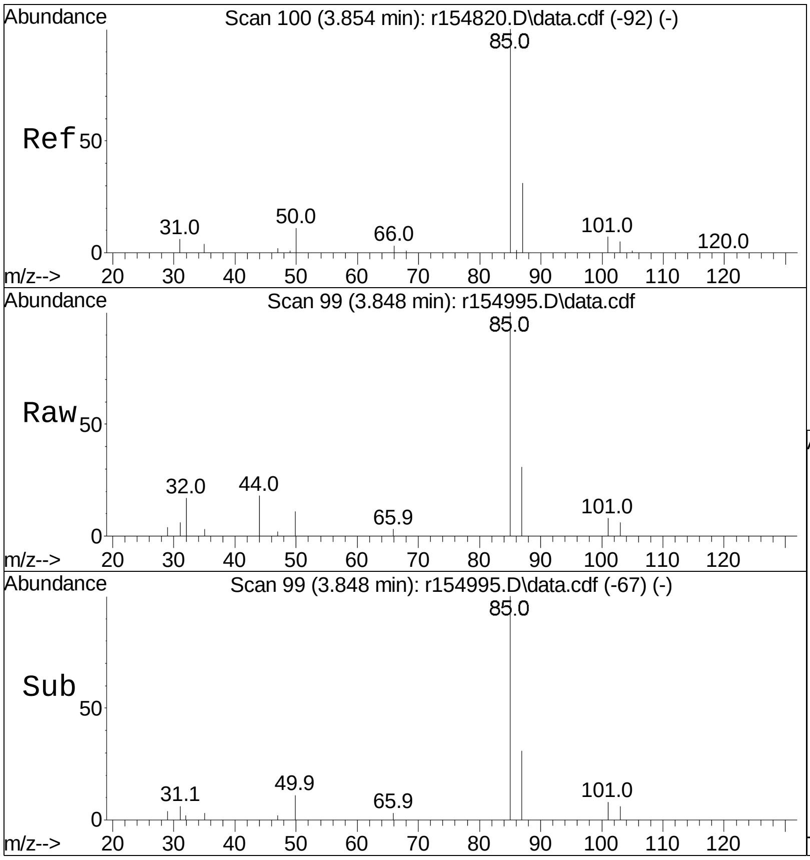
Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2018\180102T\
Data File : r154995.D
Acq On    :  2 Jan 2018   6:50 PM
Operator  : AIRLAB15:RY
Sample    : WG1078148-5,3,250,250
Misc      : WG1078148,ICAL14299
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 11:39:00 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102T\TALL171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:18:16 2017
Response via : Initial Calibration

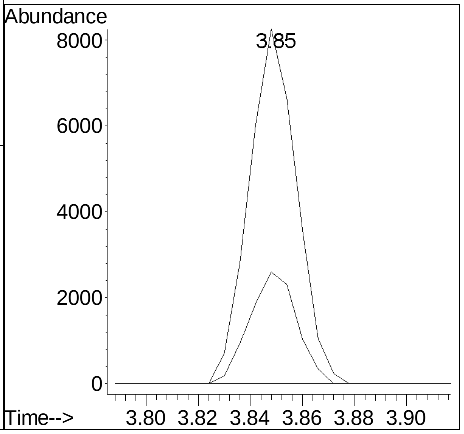
Sub List     : TO15-NY-7-SIM - .\Airlab15\2018\180102T\r154988.D
```

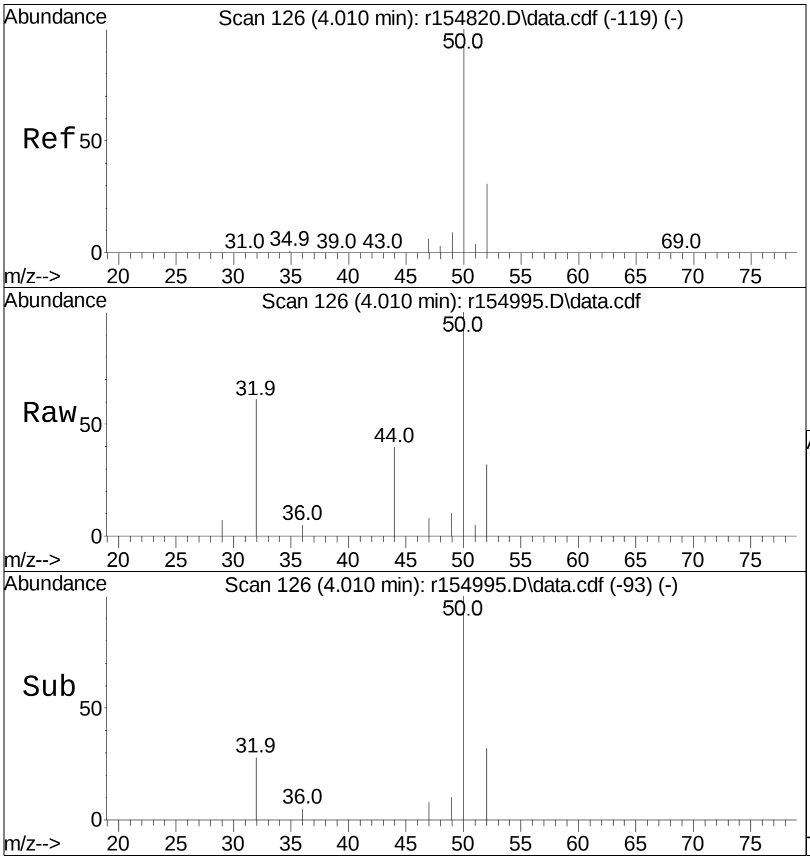




```
#5
dichlorodifluoromethane
Concen:    0.47 ppbV
RT:    3.85 min  Scan# 99
Delta R.T.  -0.006 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

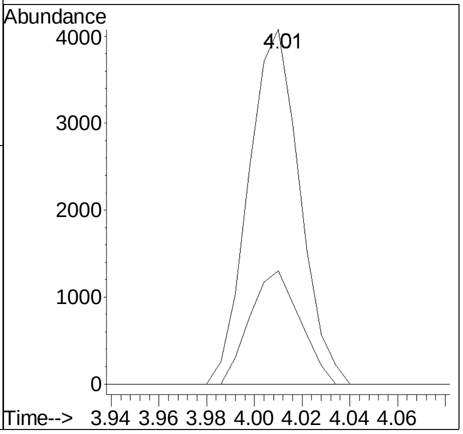
Tgt Ion: 85 Resp:   10569
Ion  Ratio  Lower  Upper
 85  100
 87   31.5   24.5   36.7
```

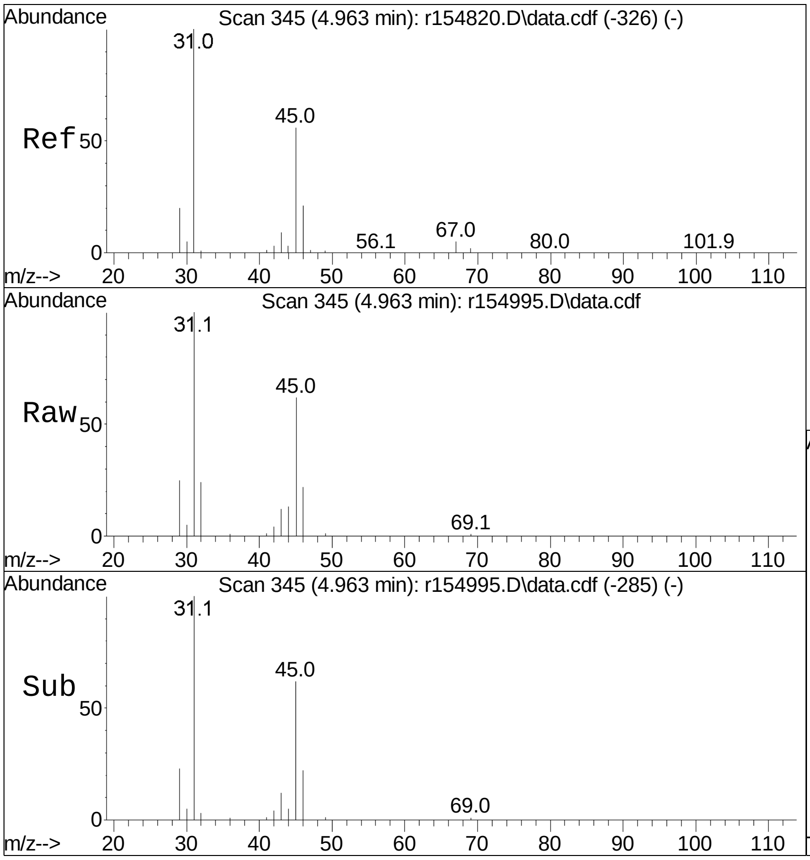




```
#6
chloromethane
Concen:    0.48 ppbV
RT:    4.01 min  Scan# 126
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

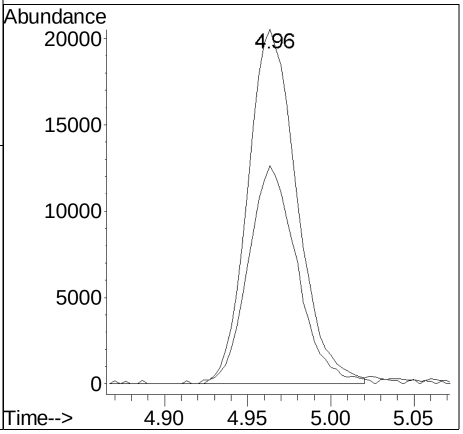
Tgt Ion: 50 Resp:    6086
Ion  Ratio  Lower  Upper
 50  100
 52   31.9   25.1   37.7
```

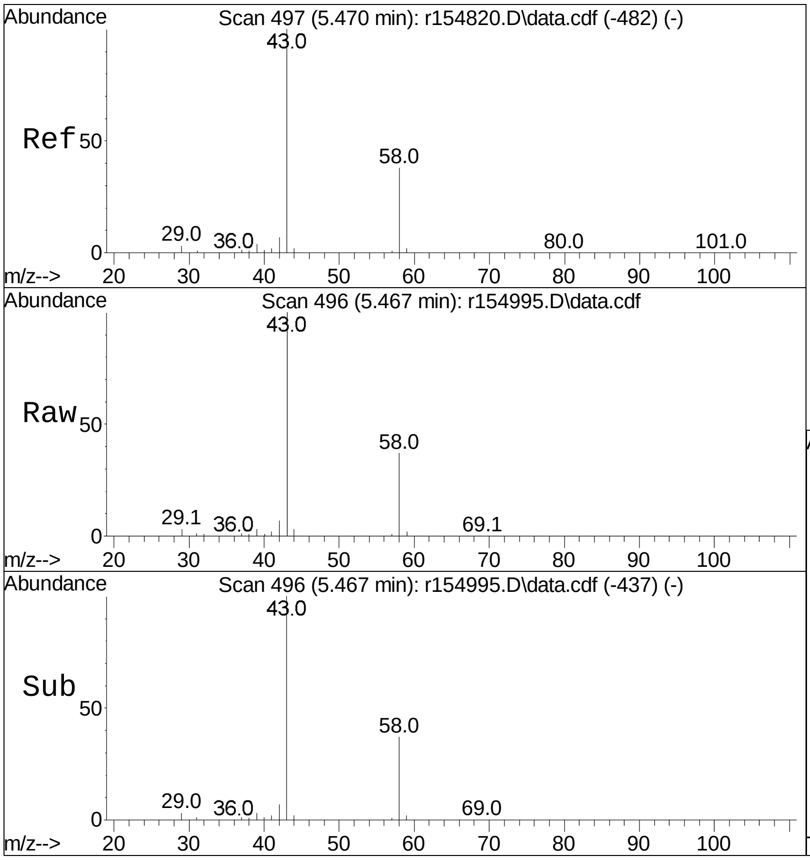




```
#15
ethanol
Concen:    4.60 ppbV
RT:    4.96 min  Scan# 345
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

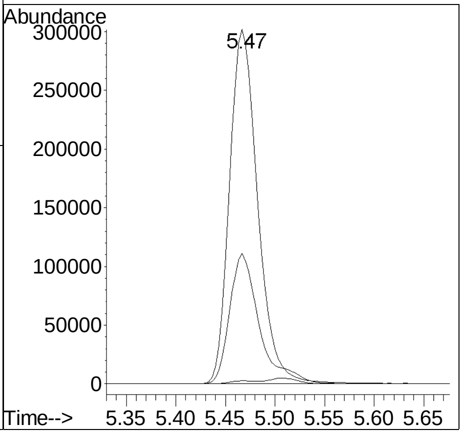
Tgt Ion: 31 Resp:   42414
Ion  Ratio  Lower  Upper
 31  100
 45   61.5   44.9   67.3
```

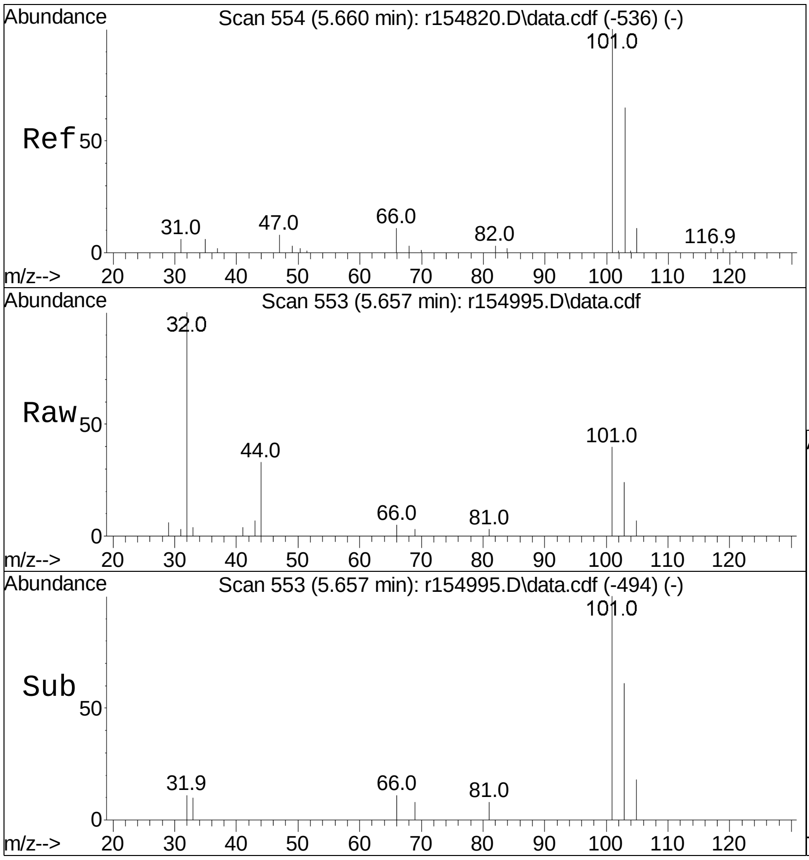




```
#19
acetone
Concen:   41.03 ppbV
RT:    5.47 min  Scan# 496
Delta R.T.  -0.003 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

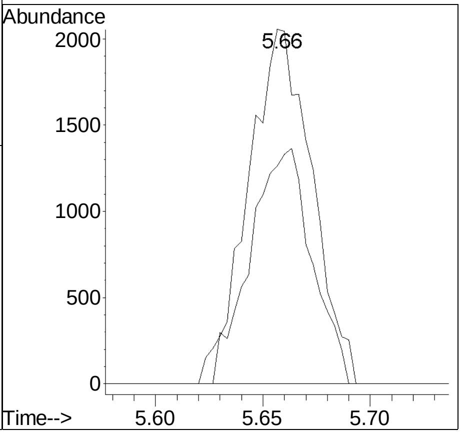
Tgt Ion: 43 Resp:  599766
Ion  Ratio  Lower  Upper
 43  100
 58   36.8   30.1   45.1
 57    0.9    0.8    1.2
```

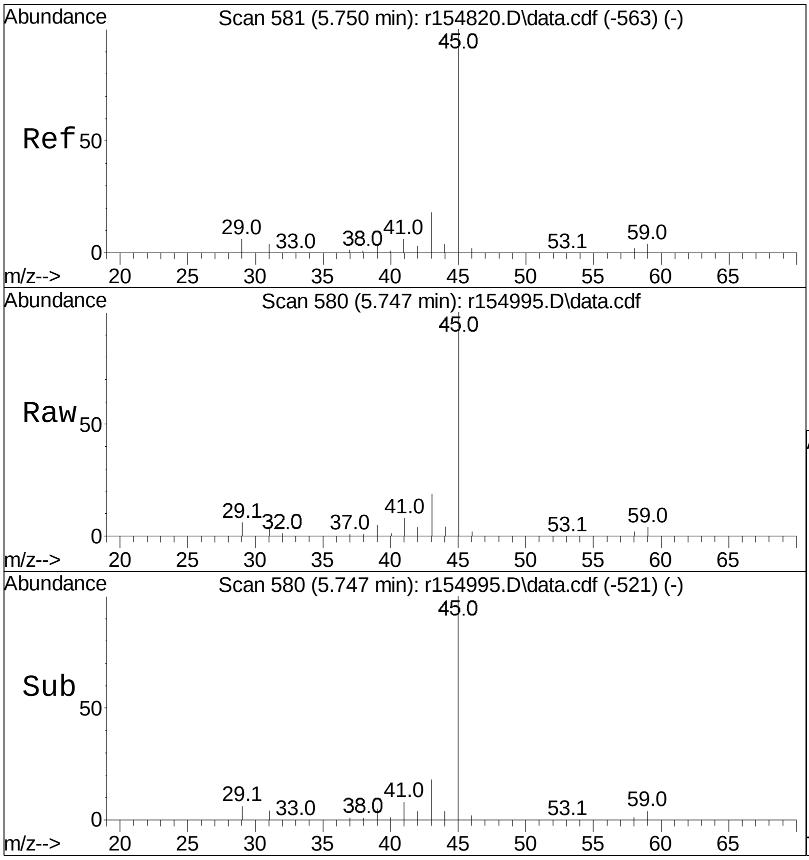




```
#21
trichlorofluoromethane
Concen:    0.25 ppbV
RT:    5.66 min  Scan# 553
Delta R.T.  -0.003 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

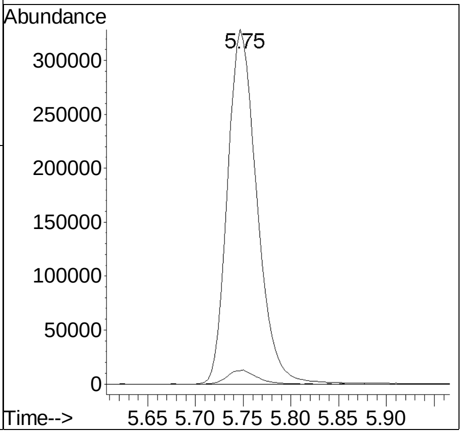
Tgt Ion:101 Resp:    4249
Ion  Ratio  Lower  Upper
101  100
103   61.4   52.2   78.2
```

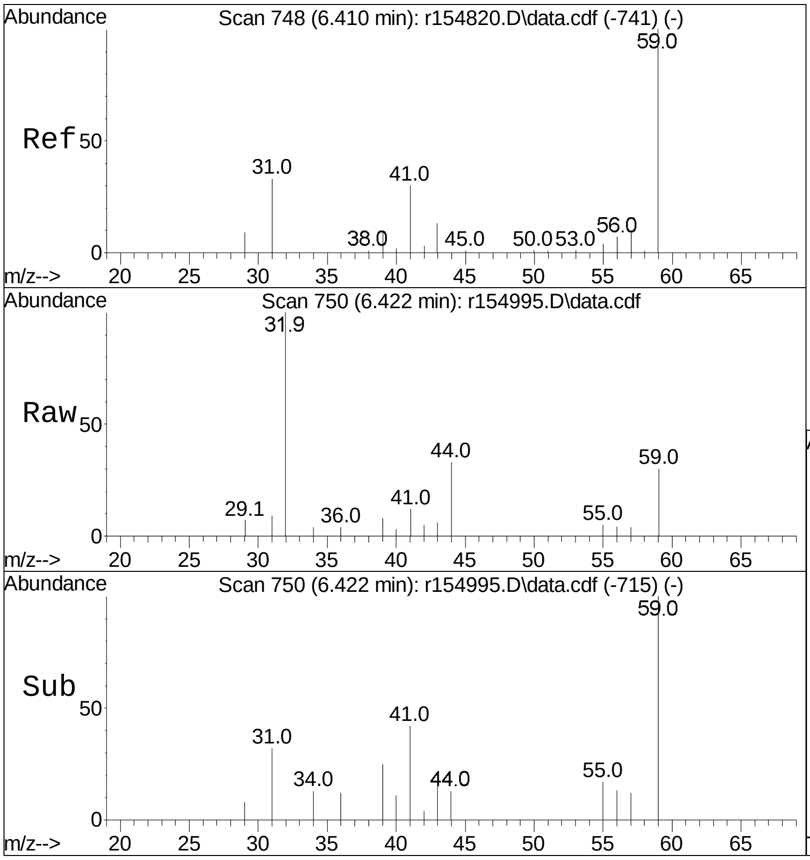




```
#22
isopropyl alcohol
Concen:   33.34 ppbV
RT:    5.75 min  Scan# 580
Delta R.T.  -0.003 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

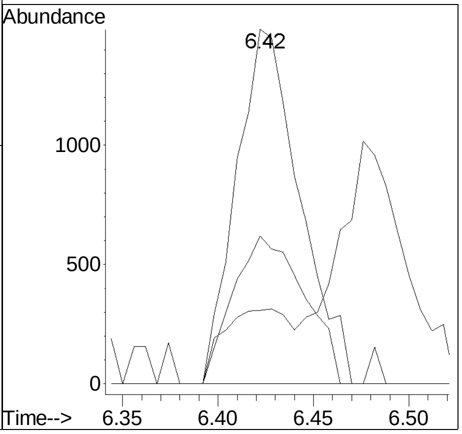
Tgt Ion: 45 Resp:  705858
Ion  Ratio  Lower  Upper
 45  100
 59    3.8    3.0    4.6
```

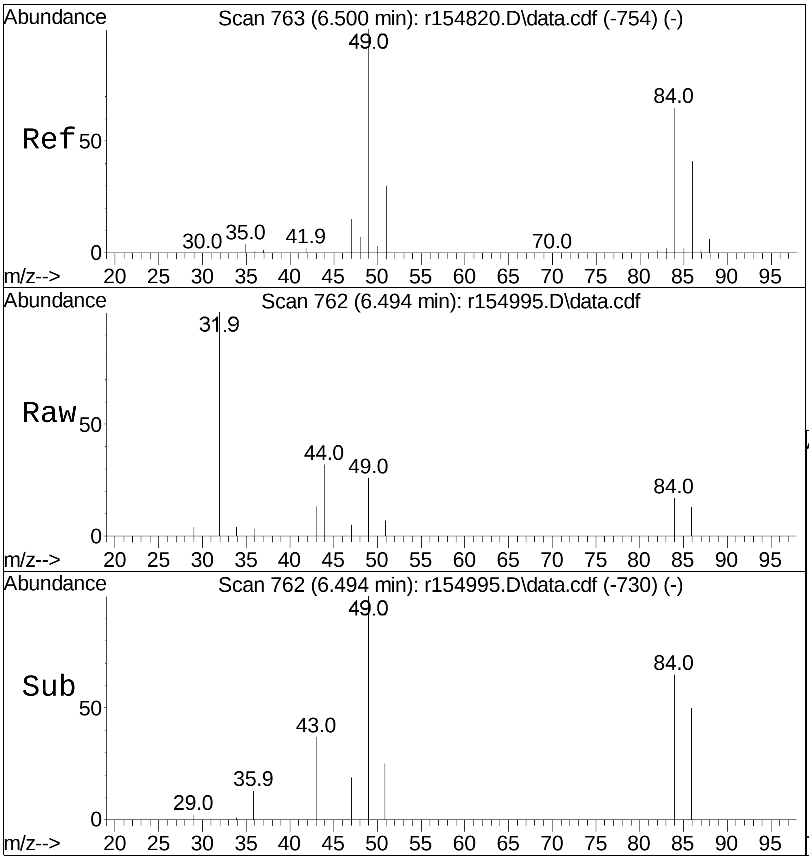




```
#27
tertiary butyl alcohol
Concen:    0.17 ppbV
RT:    6.42 min  Scan# 750
Delta R.T.  0.012 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

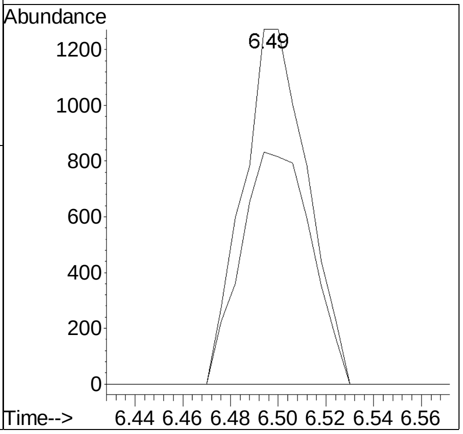
Tgt Ion: 59 Resp:    3444
Ion  Ratio  Lower  Upper
 59  100
 41   41.7   23.9   35.9#
 43   20.7   10.3   15.5#
```

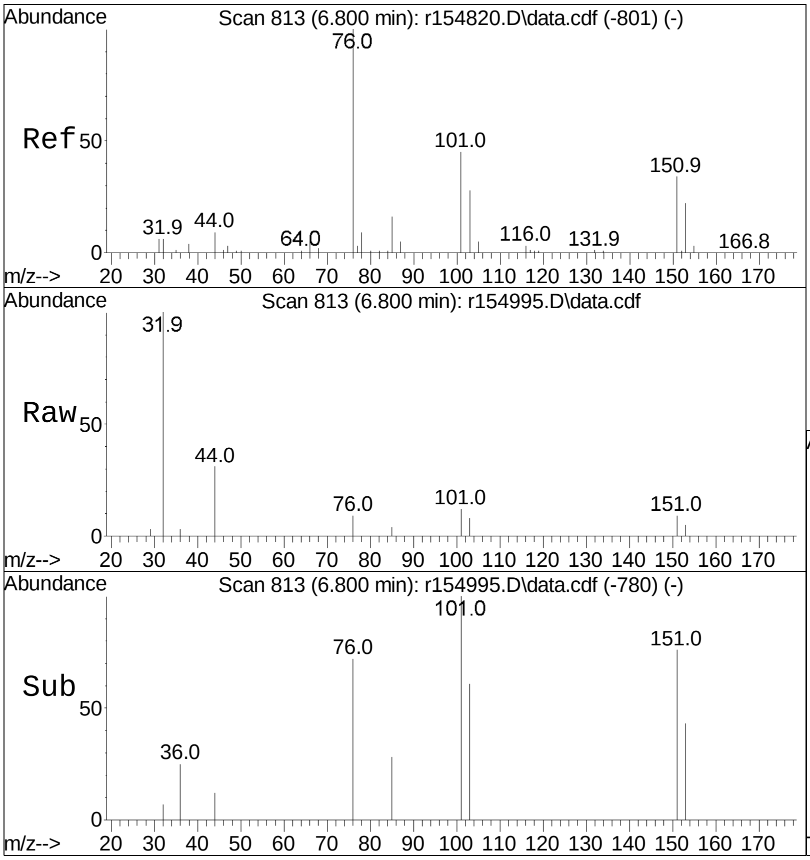




```
#28
methylene chloride
Concen:    0.16 ppbV
RT:    6.49 min  Scan# 762
Delta R.T.  -0.006 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

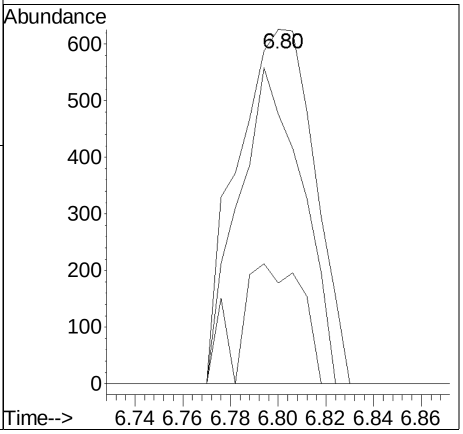
Tgt Ion: 49 Resp:    2397
Ion  Ratio  Lower  Upper
 49  100
 84   65.4   51.9   77.9
```

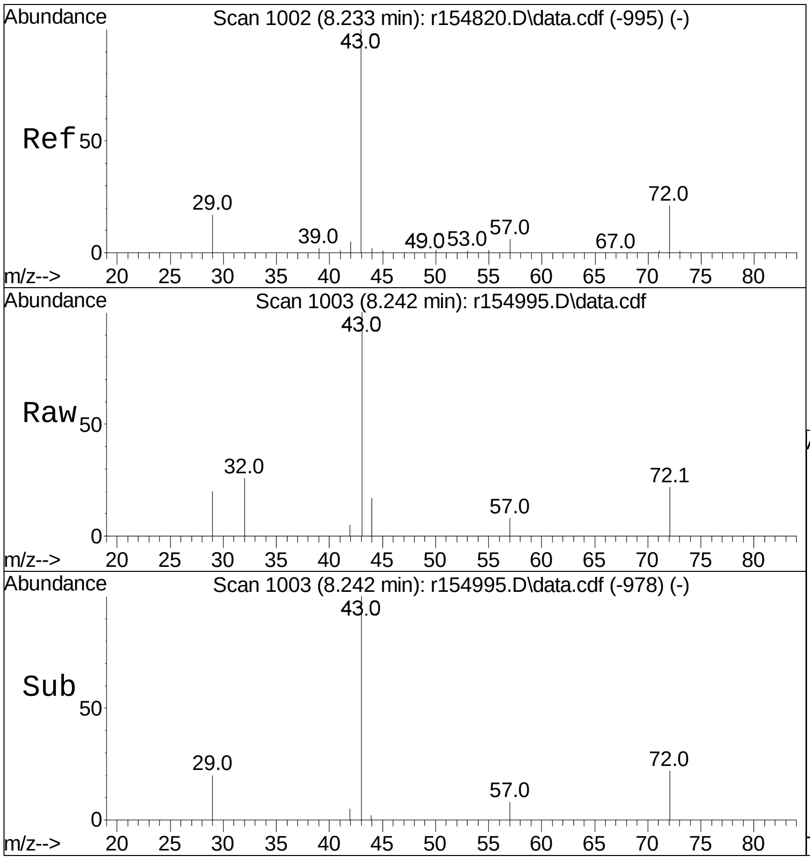




```
#31
Freon 113
Concen:    0.07 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

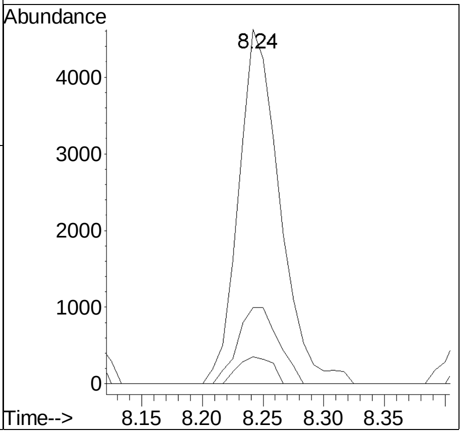
Tgt Ion:101 Resp:    1417
Ion  Ratio  Lower  Upper
101  100
 85   28.4   28.8   43.2#
151   76.0   60.3   90.5
```

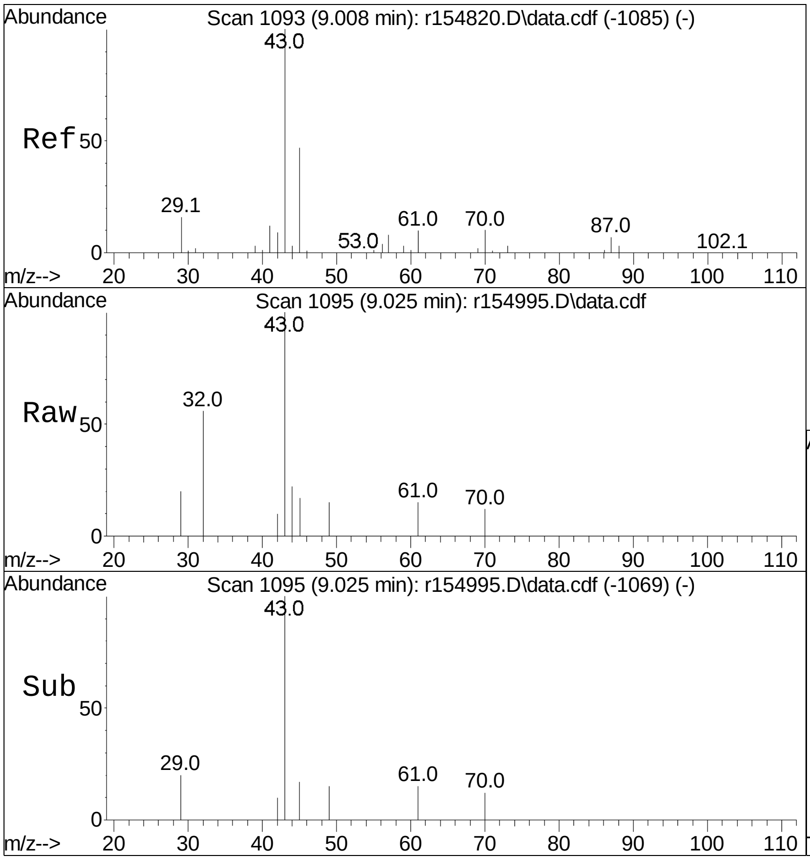




```
#36
2-butanone
Concen:    0.28 ppbV
RT:    8.24 min  Scan# 1003
Delta R.T.  0.008 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

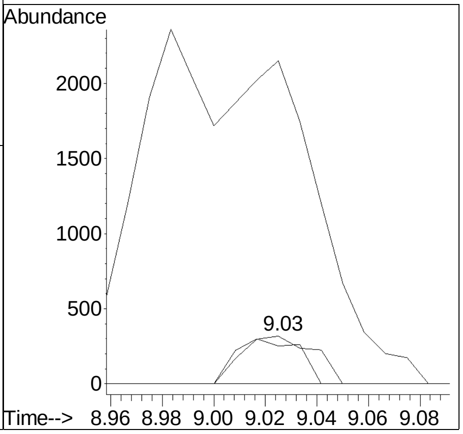
Tgt Ion: 43 Resp:   10948
Ion  Ratio  Lower  Upper
 43  100
 72   21.5   17.2   25.8
 57    7.6    4.6    7.0#
```

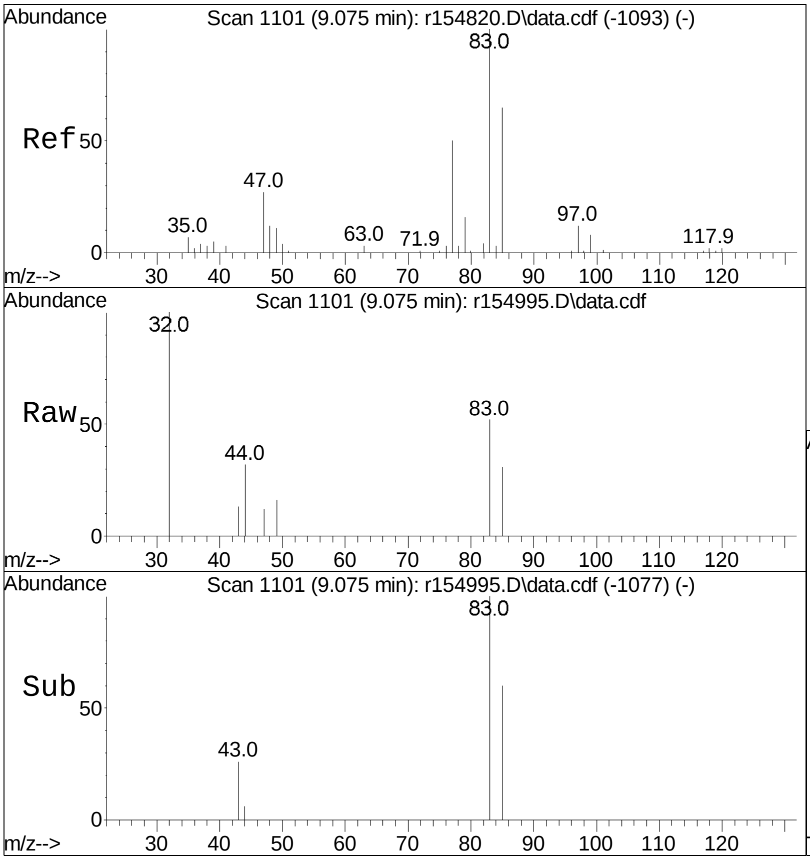




```
#38
Ethyl Acetate
Concen:    0.11 ppbV
RT:    9.03 min  Scan# 1095
Delta R.T.  0.017 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

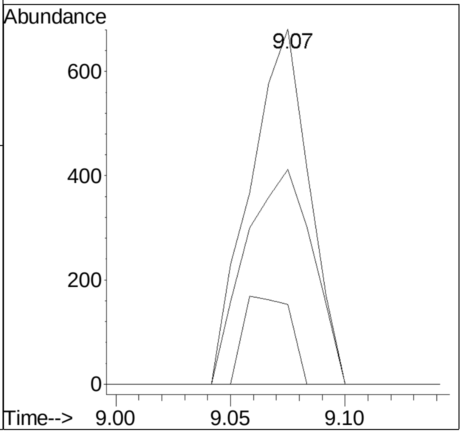
Tgt Ion: 61 Resp:     625
Ion  Ratio  Lower  Upper
 61  100
 70   79.2   76.7  115.1
 43  676.1  782.3  1173.5#
```

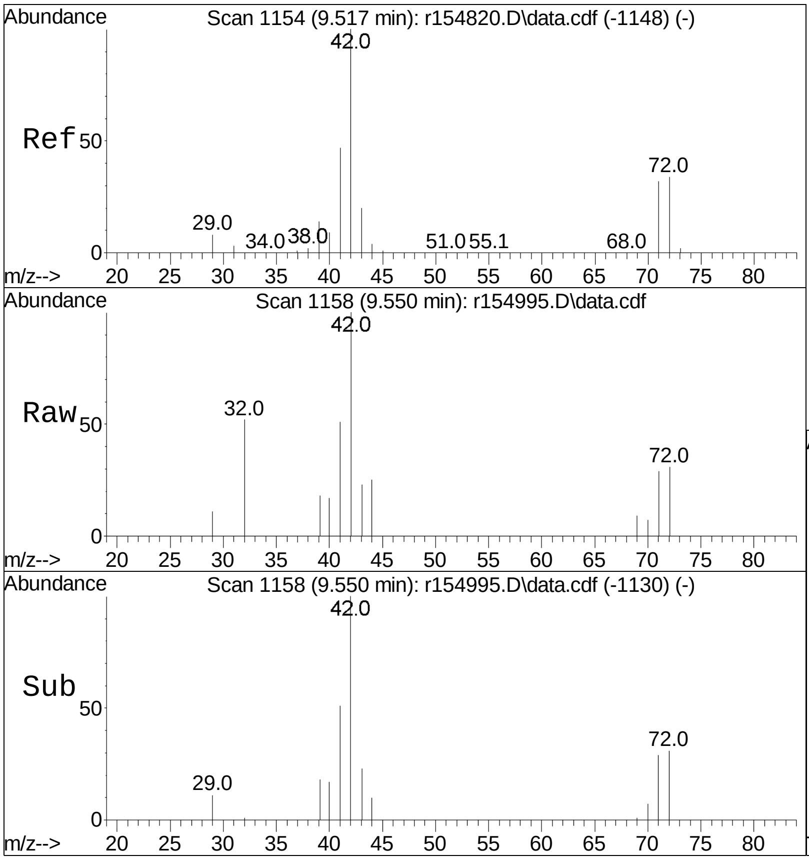




```
#39
chloroform
Concen:    0.05 ppbV
RT:    9.07 min  Scan# 1101
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

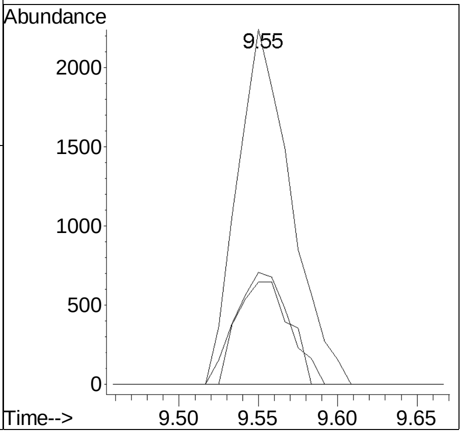
Tgt Ion: 83 Resp:    1220
Ion  Ratio  Lower  Upper
 83  100
 85   60.5   52.3   78.5
 47   22.5   21.6   32.4
```

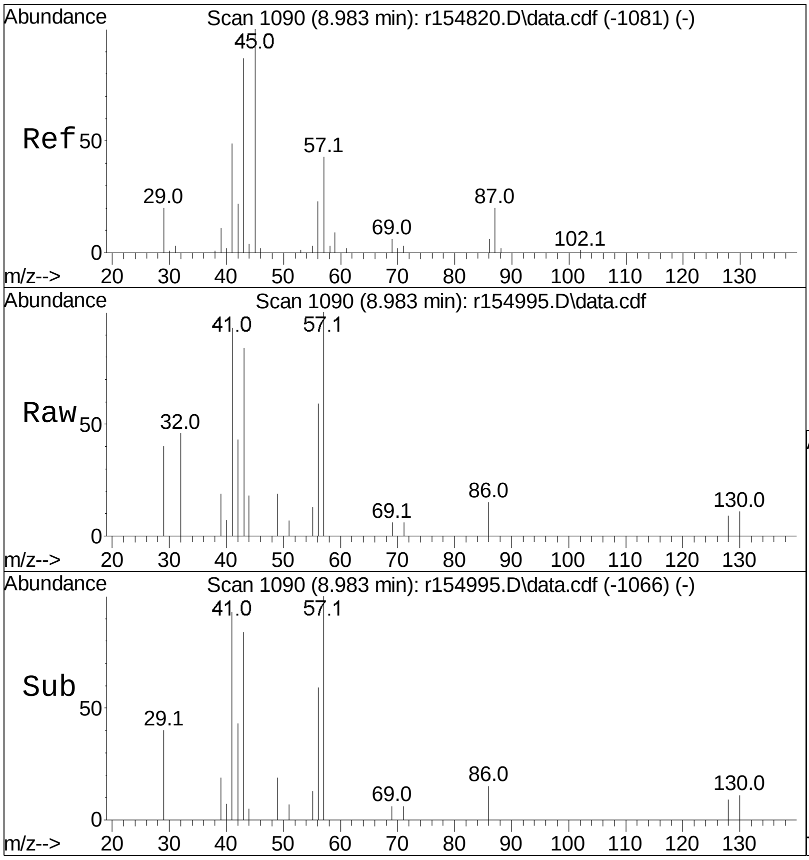




```
#40
Tetrahydrofuran
Concen:    0.21 ppbV
RT:    9.55 min  Scan# 1158
Delta R.T.  0.033 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

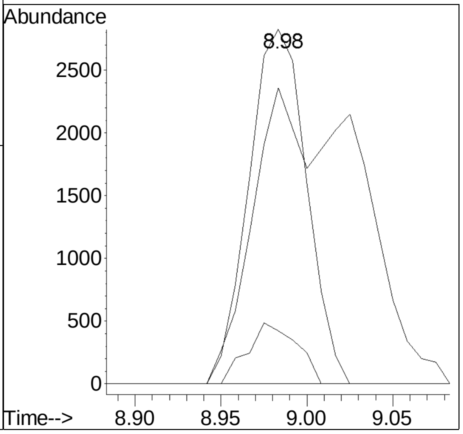
Tgt Ion: 42 Resp:    5271
Ion  Ratio  Lower  Upper
 42  100
 71   28.8   25.5   38.3
 72   31.5   27.4   41.2
```

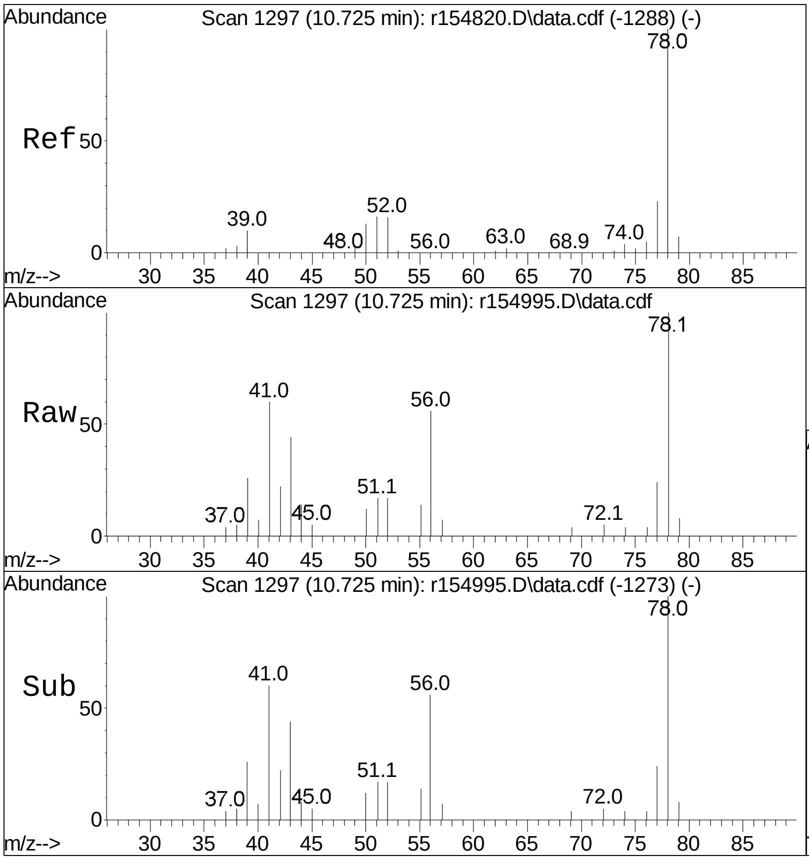




```
#44
hexane
Concen:    0.22 ppbV
RT:    8.98 min  Scan# 1090
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

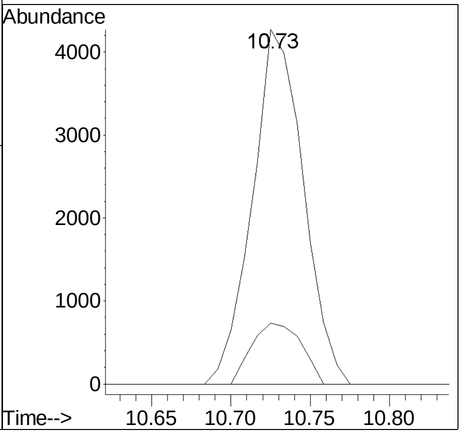
Tgt Ion: 57 Resp:    6616
Ion  Ratio  Lower  Upper
 57  100
 43   83.5  162.2  243.2#
 86   15.0   11.8   17.6
```

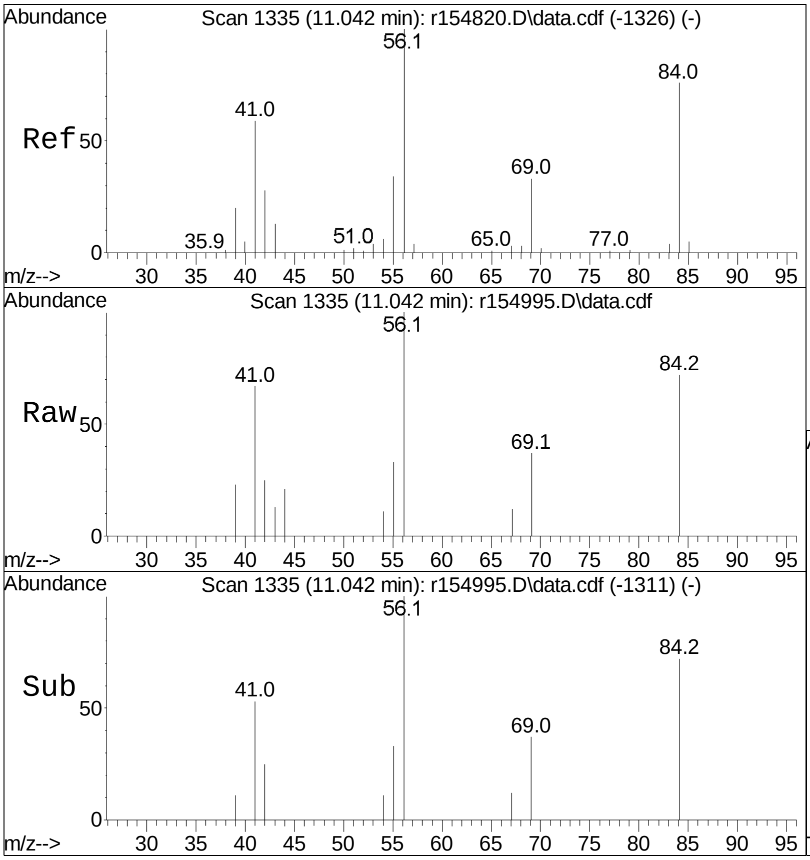




```
#50
benzene
Concen:    0.17 ppbV
RT:   10.73 min  Scan# 1297
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

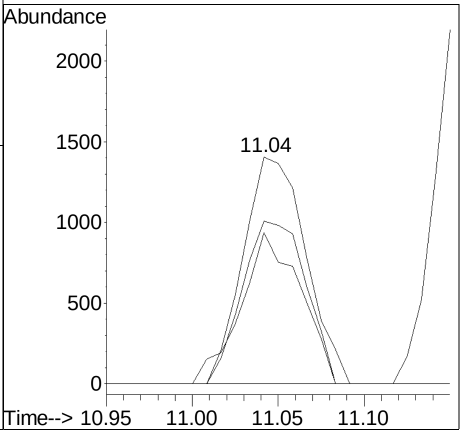
Tgt Ion: 78 Resp:    9547
Ion  Ratio  Lower  Upper
 78  100
 52   17.2   13.0   19.4
```

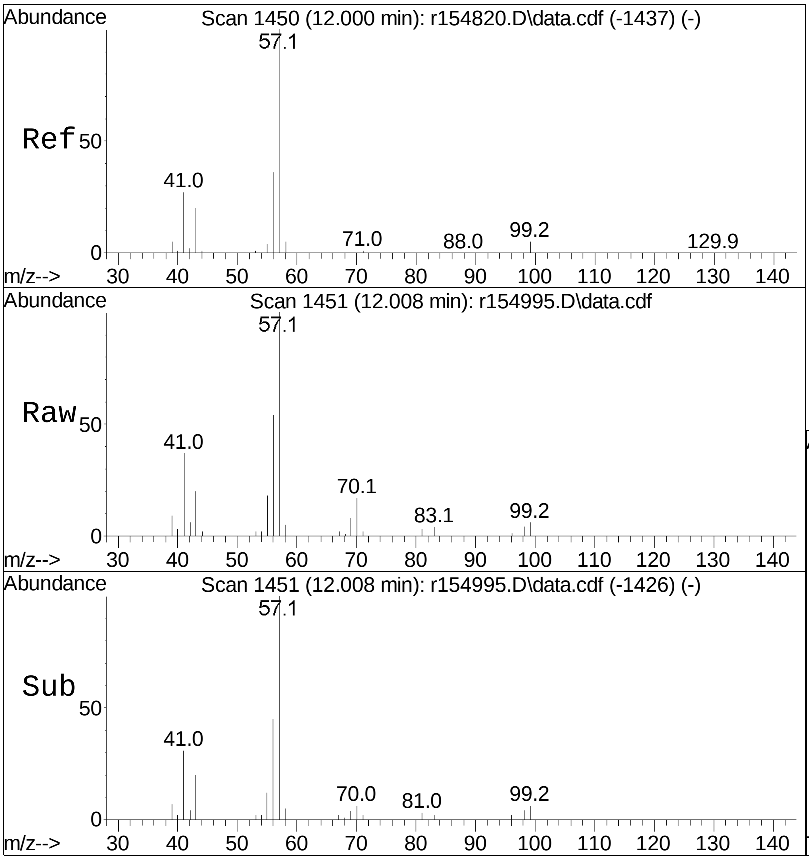




```
#53
cyclohexane
Concen:    0.11 ppbV
RT:   11.04 min  Scan# 1335
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

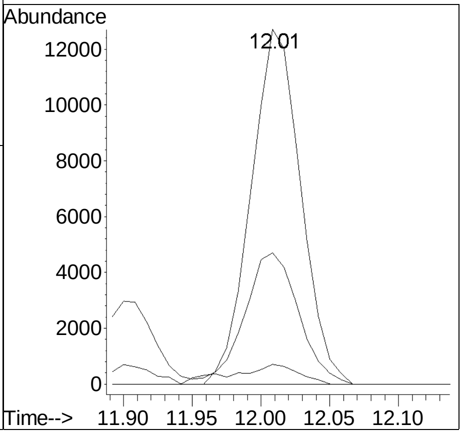
Tgt Ion: 56 Resp:    3571
Ion  Ratio  Lower  Upper
 56  100
 84   71.8   60.6   90.8
 41   66.7   47.3   70.9
```

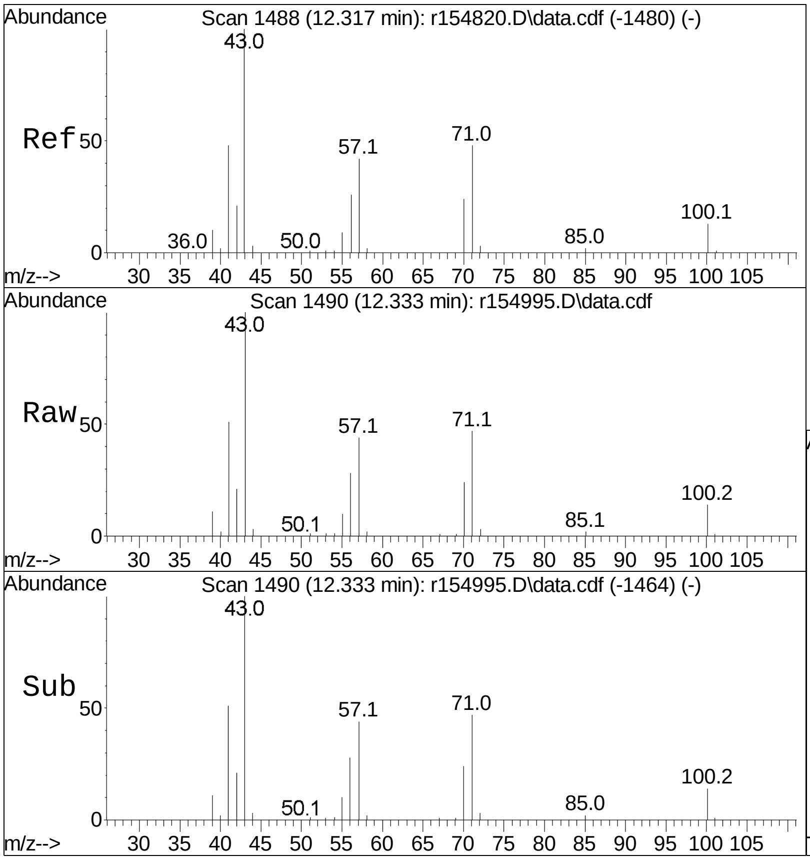




```
#60
2,2,4-trimethylpentane
Concen:    0.32 ppbV
RT:   12.01 min  Scan# 1451
Delta R.T.  0.008 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

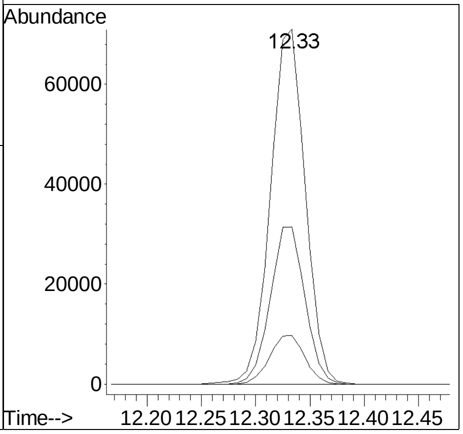
Tgt Ion: 57 Resp:   31990
Ion  Ratio  Lower  Upper
 57  100
 99    5.5    4.2    6.2
 41   37.0   21.8   32.6#
```

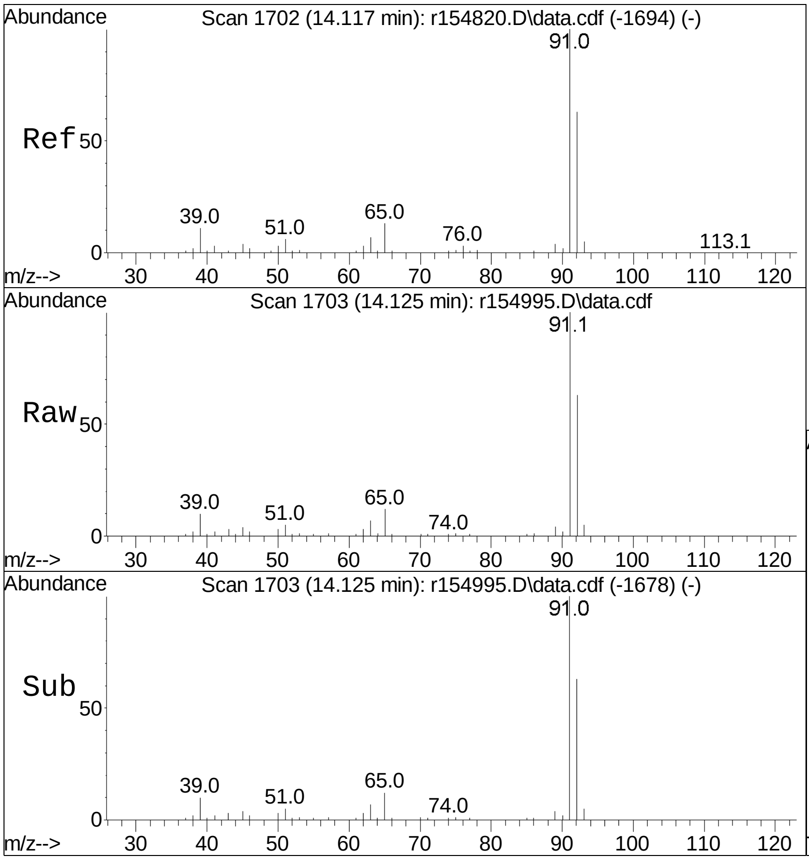




```
#62
heptane
Concen:    3.45 ppbV
RT:   12.33 min  Scan# 1490
Delta R.T.  0.017 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

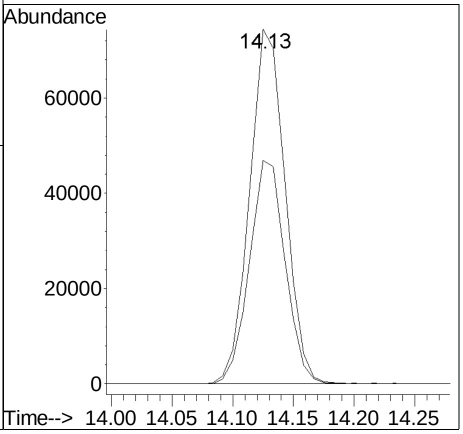
Tgt Ion: 43 Resp:  157471
Ion  Ratio  Lower  Upper
 43  100
 57   44.3   33.3   49.9
100   13.6   10.6   15.8
```

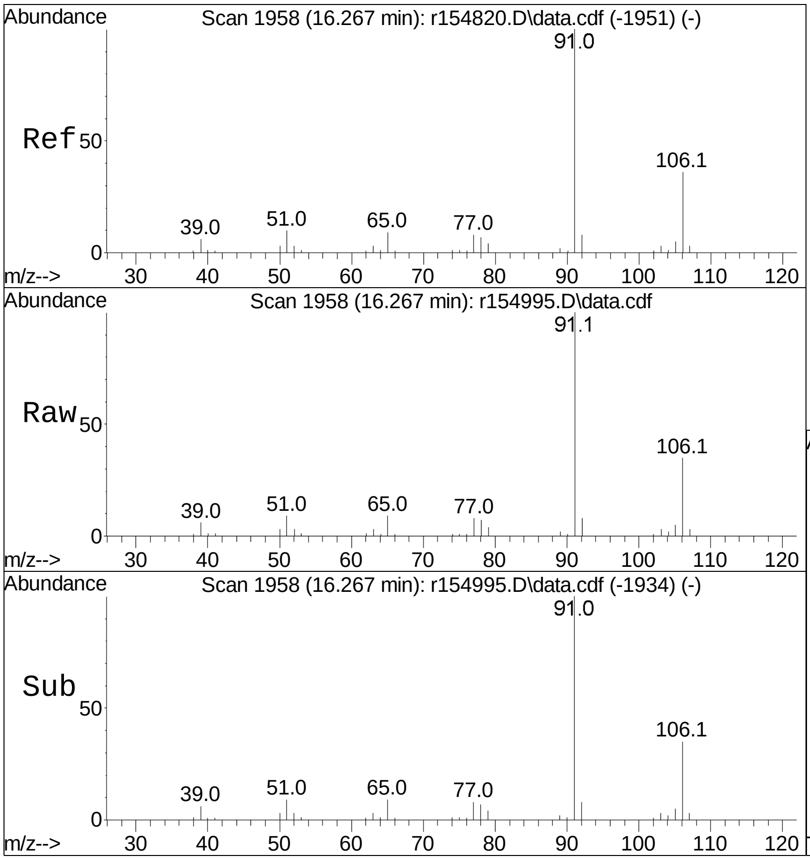




```
#68
toluene
Concen:    2.56 ppbV
RT:   14.13 min  Scan# 1703
Delta R.T.  0.008 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

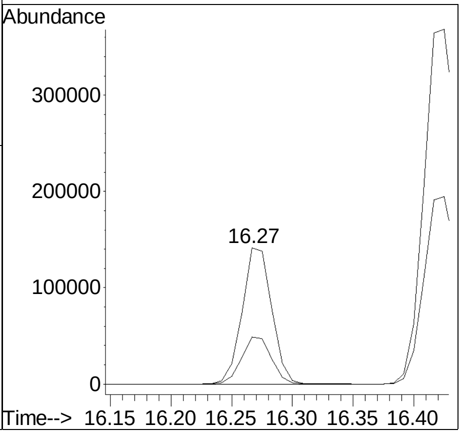
Tgt Ion: 91 Resp:  151574
Ion  Ratio  Lower  Upper
 91  100
 92   63.0   50.6   76.0
```

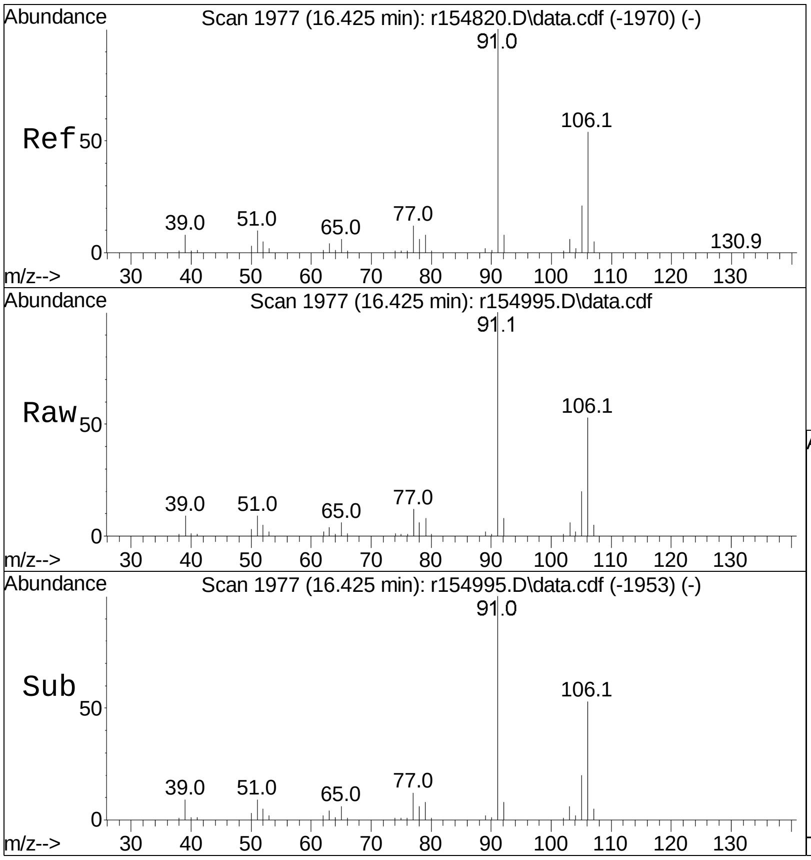




```
#81
ethylbenzene
Concen:    3.20 ppbV
RT:   16.27 min  Scan# 1958
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

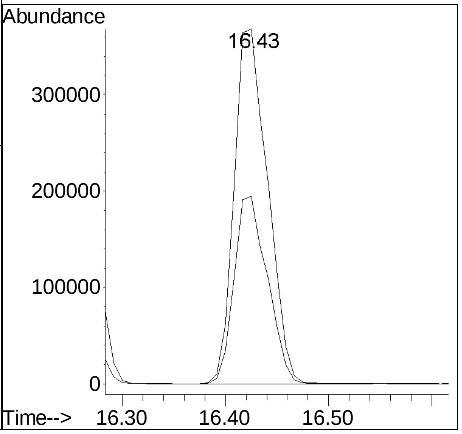
Tgt Ion: 91 Resp:  239879
Ion  Ratio  Lower  Upper
 91  100
106   34.5   28.8   43.2
```

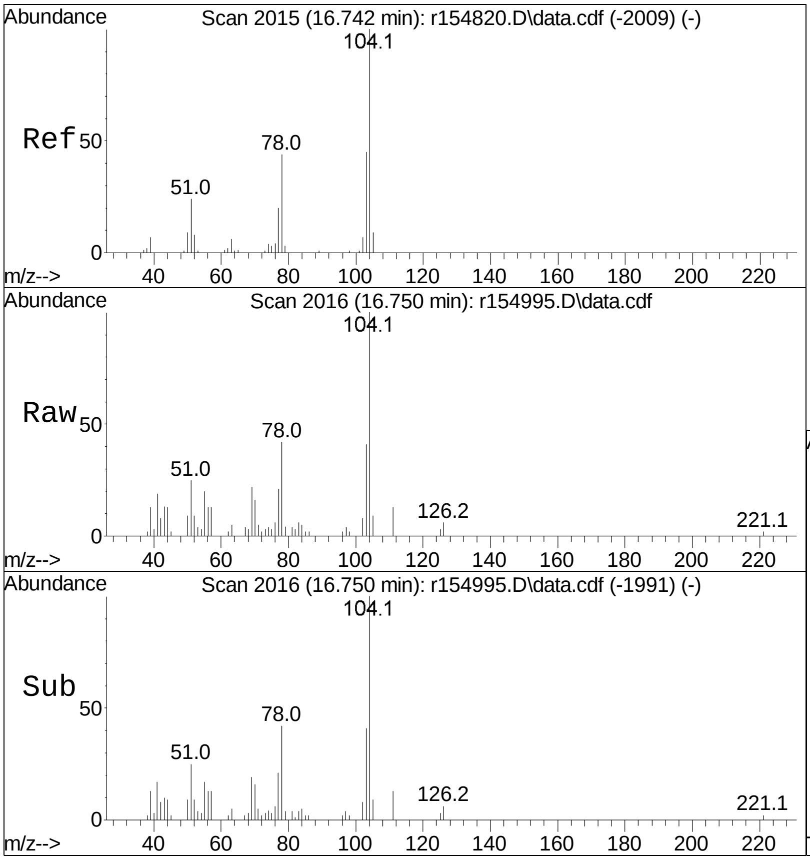




```
#83
m+p-xylene
Concen:   13.72 ppbV
RT:   16.43 min  Scan# 1977
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

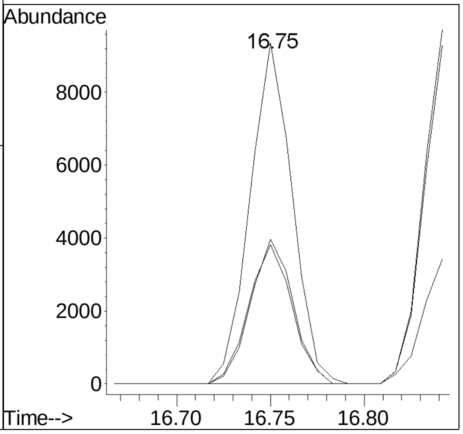
Tgt Ion: 91 Resp:  831870
Ion  Ratio  Lower  Upper
 91  100
106   52.9   43.4   65.2
```

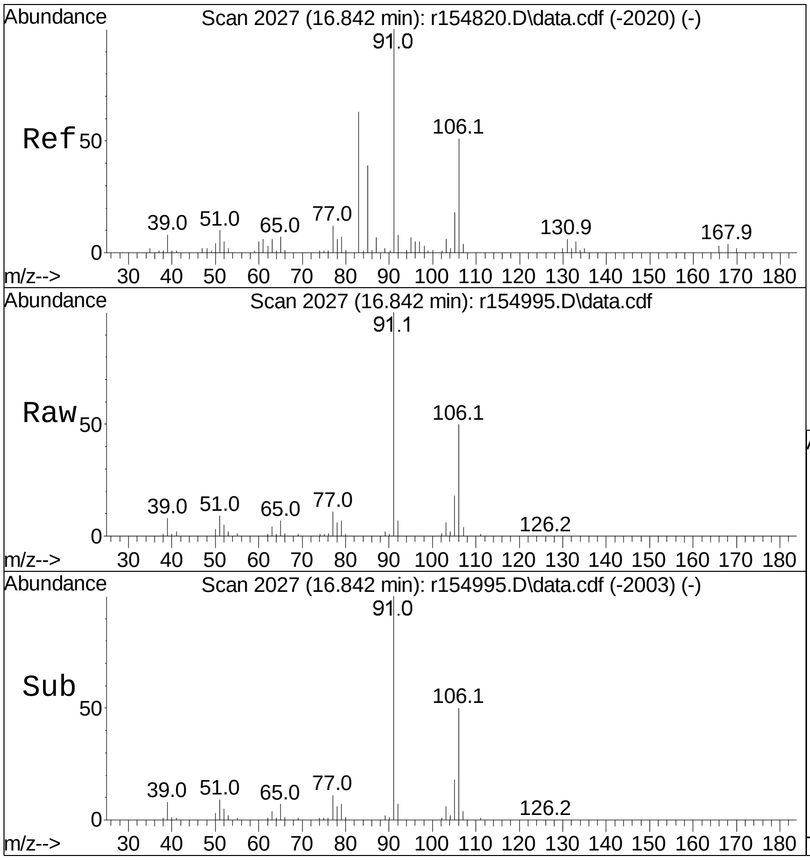




```
#85
styrene
Concen:    0.29 ppbV
RT:   16.75 min  Scan# 2016
Delta R.T.  0.008 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

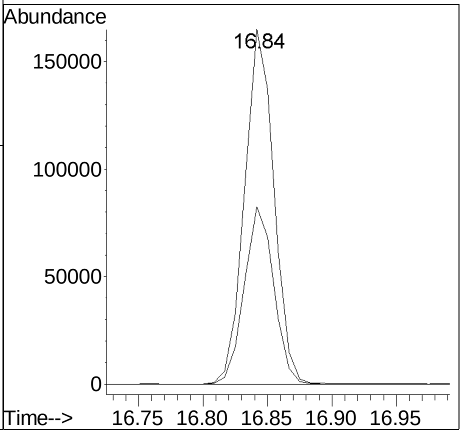
Tgt Ion:104 Resp:   14622
Ion  Ratio  Lower  Upper
104  100
103   40.9   35.9   53.9
 78   42.4   34.8   52.2
```

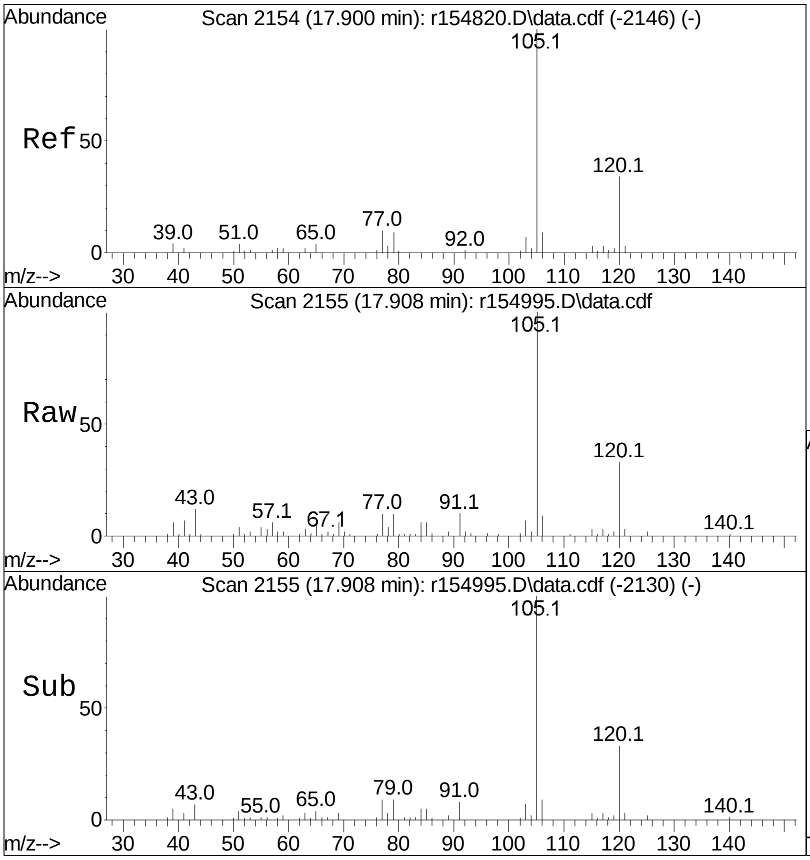




```
#87
o-xylene
Concen:    4.29 ppbV
RT:   16.84 min  Scan# 2027
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

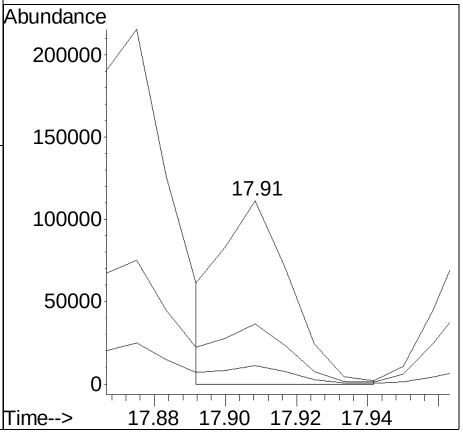
Tgt Ion: 91 Resp:  260554
Ion  Ratio  Lower  Upper
 91  100
106   50.0   40.7   61.1
```

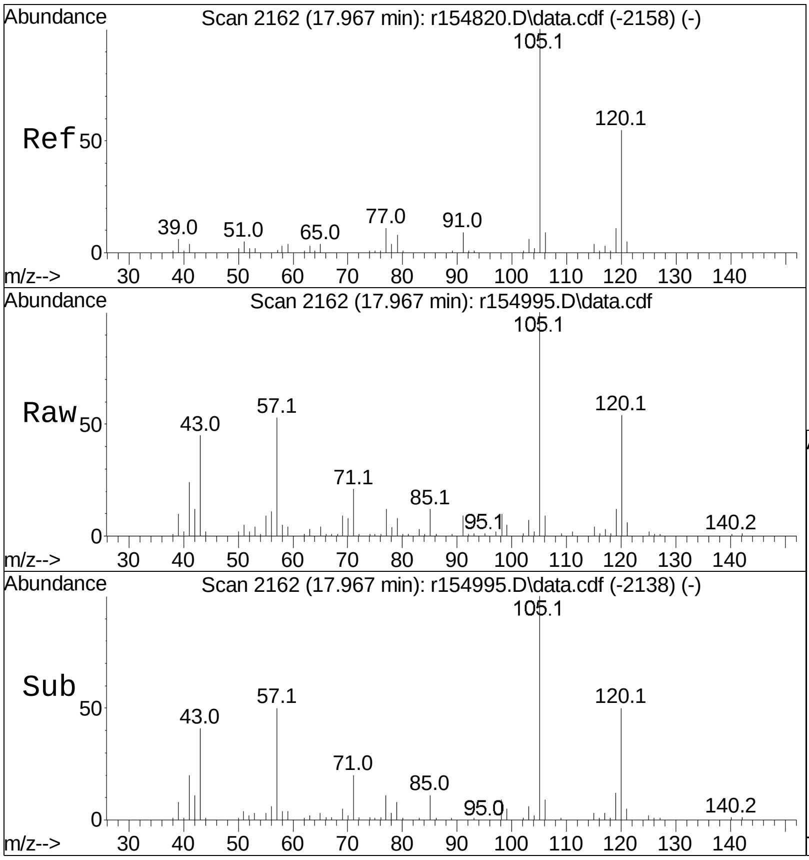




```
#96
4-ethyl toluene
Concen:    1.64 ppbV m
RT:   17.91 min  Scan# 2155
Delta R.T.  0.008 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

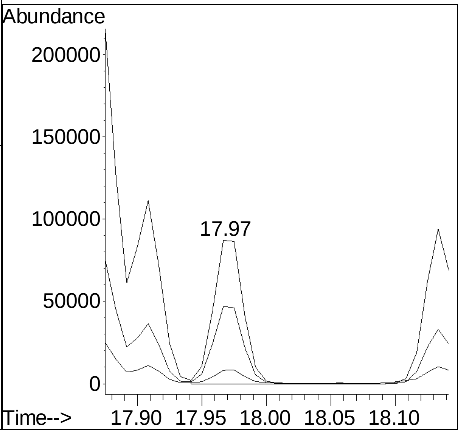
Tgt Ion:105 Resp:  148223
Ion  Ratio  Lower  Upper
105  100
120   32.8   27.4   41.0
 91   10.0    7.6   11.4
```

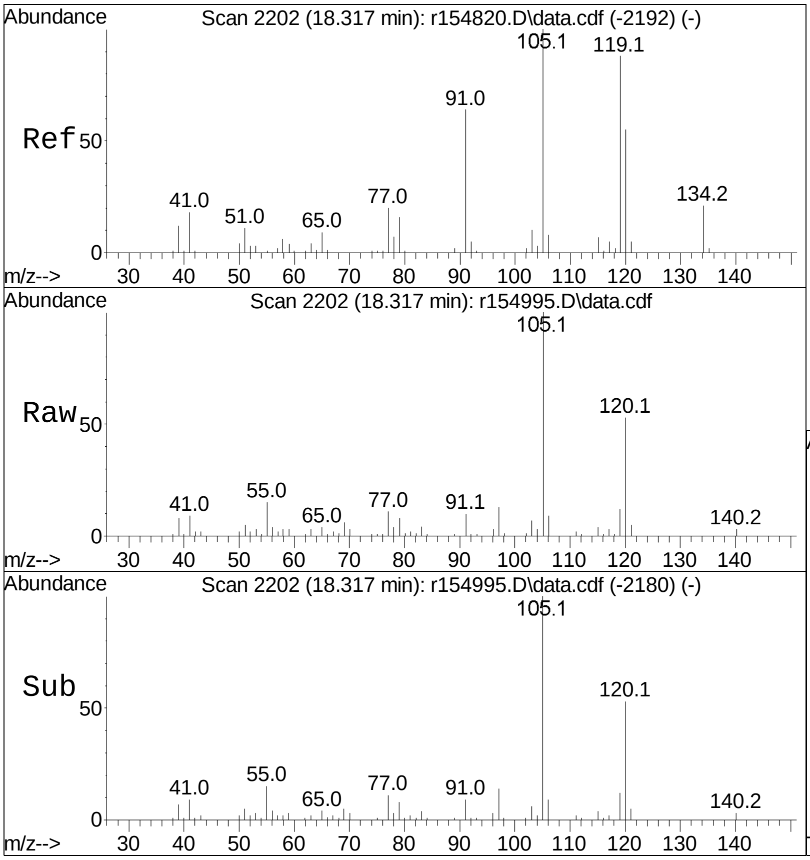




```
#97
1,3,5-trimethylbenzene
Concen:    1.94 ppbV
RT:   17.97 min  Scan# 2162
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

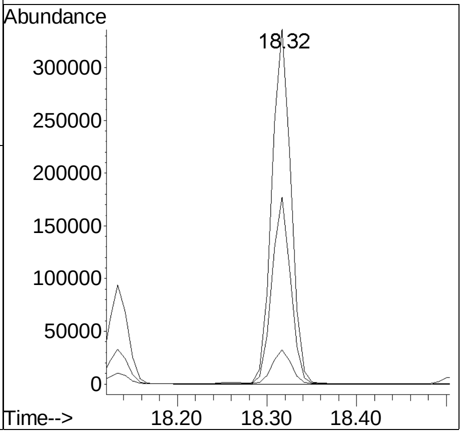
Tgt Ion:105 Resp:  141725
Ion  Ratio  Lower  Upper
105  100
120   53.9   43.4   65.0
 91    9.3    7.4   11.2
```





```
#99
1,2,4-trimethylbenzene
Concen:    7.09 ppbV
RT:   18.32 min  Scan# 2202
Delta R.T.  0.000 min
Lab File:   r154995.D
Acq:  2 Jan 2018   6:50 PM

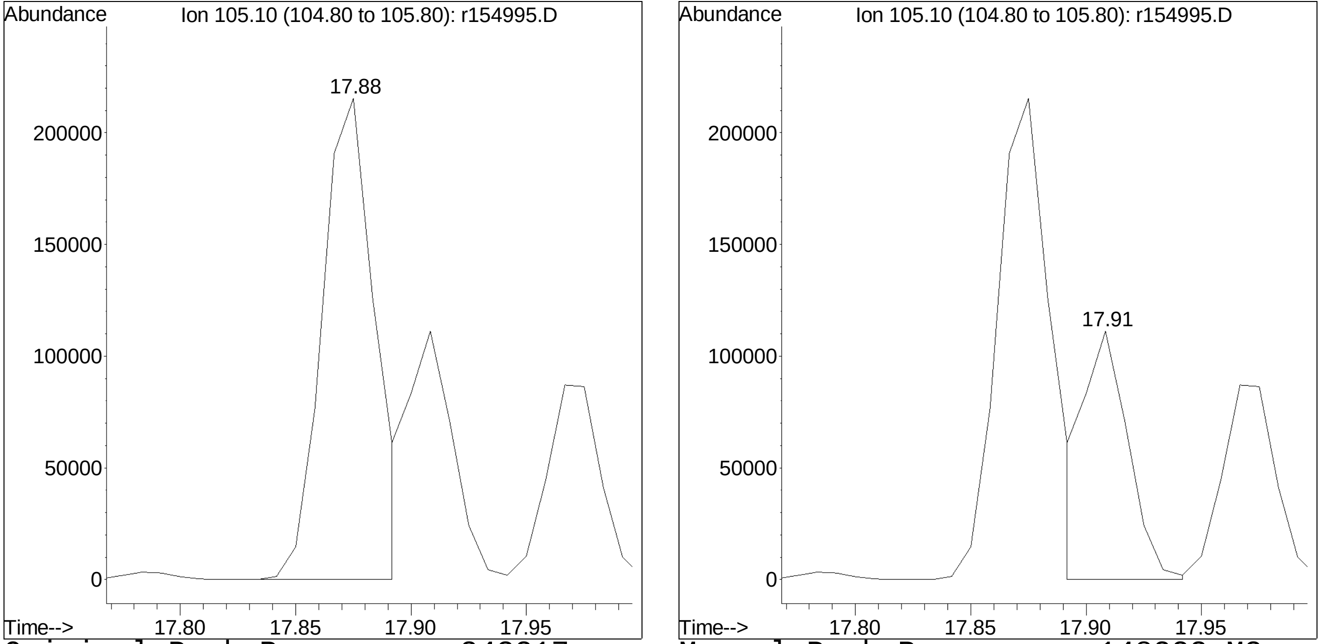
Tgt Ion:105 Resp:  498202
Ion  Ratio  Lower  Upper
105  100
120   52.7   44.2   66.2
 91    9.6   51.6   77.4#
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TALL171222.M
Data File   : r154995.D                 Operator     : AIRLAB15:RY
Date Inj'd  : 1/2/2018  6:50 PM         Instrument   :
Sample      : WG1078148-5,3,250,250     Quant Date   : 1/3/2018  7:02 am
```

Compound #96: 4-ethyl toluene



Original Peak Response = 343217   Manual Peak Response = 148223 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Calculation of Volatile Organic Compounds in Air

The instrument will calculate the concentration (ppbv). If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

Result, ppbv = C_s x DF
Where:
C_s = Concentration of sample (ppbv)
DF = Dilution Factor

Calculation of Instrument Dilution Factor

For dilutions, smaller sample volumes (< 250mL) are analyzed. The smallest volume that can be analyzed with accuracy is 10 mL.

Samples that arrive at the laboratory with pressures below -15 inches Hg must be pressurized with zero air to greater than -15 inches Hg. This pressurization results in a dilution factor.

Calculation of Dilution Factor
DF = V_{cf} / V_{ci}
Where:
V_{ci} = volume of air in canister prior to pressurization, L
P =

Conversion of ppbv to ug/m^3
ug/m^3 = (ppbv) * MW / 24.47
Where:
24.47 = molar gas constant (g/g-mole)
MW = molecular weight of the compound of interest

Dilution Factor for Pressurization of Subatmospheric Samples: Three Steps

Step 1: Calculate the volume in the canister prior to pressurization (Assume a 2.7 liter canister is used).

Dilution Factor for Pressurization of Subatmospheric Samples: Three Steps

Step 1: Calculate the volume in the canister prior to pressurization (Assume a 2.7 liter canister is used).

$V_{ci} = 2.7 * PI/14.696$

Step 2: Calculate the volume in the canister after pressurization.

$V_{cf} = 2.7 * PF/14.696$

Step 3: Calculate the dilution factor.

$DF = V_{cf} / V_{ci}$

Where:

V_{ci} = volume of air in canister prior to pressurization, L
PI = pressure reading of canister prior to pressurization (psia)
V_{cf} = volume of air in canister after pressurization, L
PF = pressure reading of canister after pressurization (psia)
DF = dilution factor
14.696 = atmospheric pressure (psia)

```
                                                ALPHA ANALYTICAL LABORATORIES, INC.

                                                   Alpha WORK GROUP REPORT (wk02)

                                                       Jan 08 2018, 11:33 am

                                          Work Group: WG1078148   for Department: 3 GC/MS

                                            Created: 02-JAN-18    Due:     Operator: MB

Sample                       Client ID            C Product              Matrix     Stat UA HOLD DUE  PR Location


L1747487-01                  BR_T0                S TO15-LL              AIR        DONE U  0120 0102 S0 Can-2.7
L1747487-02                  BR_45                S TO15-LL              AIR        DONE U  0120 0102 S0 Can-2.7
L1747487-03                  BR_105               S TO15-LL              AIR        DONE U  0120 0102 S0 Can-2.7
L1747547-01                  SVE 003 EFF          S TO15-LL              SOIL_VAPOR DONE U  0120 1229 S0 Can-2.7
L1747629-01                  IA-1                 S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-02                  IA-1 DUPLICATE       S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-03                  OA-1                 S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-04                  IA-2                 S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-07                  IA-3                 S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-09                  IA-4                 S TO15-LL              AIR        DONE U  0125 0103 S0 Can-2.7
L1747754-01                  IA-A_122717          S TO15-LL              AIR        DONE U  0126 0104 S0 Can-6
L1747754-02                  IA-B_122717          S TO15-LL              AIR        DONE U  0126 0104 S0 Can-6
WG1078148-1                  MS BFB Tune Standard S TO15-LL              AIR        DONE U
WG1078148-1                  MS BFB Tune Standard S TO15-LL              SOIL_VAPOR DONE U
WG1078148-2                  Continuing Calibrati S TO15-LL              AIR        DONE U
WG1078148-2                  Continuing Calibrati S TO15-LL              SOIL_VAPOR DONE U
WG1078148-3                  Laboratory Control S S TO15-LL              AIR        DONE U
WG1078148-3                  Laboratory Control S S TO15-LL              SOIL_VAPOR DONE U
WG1078148-4                  Laboratory Method Bl S TO15-LL              SOIL_VAPOR DONE U
WG1078148-4                  Laboratory Method Bl S TO15-LL              AIR        DONE U
WG1078148-5                  Duplicate Sample     S TO15-LL              AIR        DONE U
WG1078148-5                  Duplicate Sample     S TO15-LL              SOIL_VAPOR DONE U

Comments:

WG1078148-5          L1747629-01
```

Alpha Analytical Air Lab
Instrument Run Log

Instrument ID: Airlab15

Internal Standard/Surrogate IDs: SS17-024 / SS17-031

Date: 12/23/17

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: RY

Sequence File Name: 171223.S

SIM ICAL#   Full Scan ICAL#   NJ ICAL#   APH ICAL#

AS Position #	Sample ID	Acquisition Method	Data File ID	Standard ID or Batch ID #, ICAL Ref #	Comment (s)	Product/ sublist	Leak Check Pass ? Y/N
1	WG1075924-1	TO15_SFS.qgm	R154812.qgd	WG1075924	TUNE		NA
5	ITO15-SIMSTD0.02	TO15_SFS.qgm	R154813.qgd	WG1075924	SIM ONLY	SS17-027D	NA
5	ITO15-SIMSTD0.04	TO15_SFS.qgm	R154814.qgd	WG1075924	SIM ONLY	SS17-027D	NA
5	ITO15-SIMSTD0.1	TO15_SFS.qgm	R154815.qgd	WG1075924	SIM ONLY	SS17-027D	NA
6	ITO15-SIMSTD0.2	TO15_SFS.qgm	R154816.qgd	WG1075924		SS17-027C	NA
6	ITO15-SIMSTD0.5	TO15_SFS.qgm	R154817.qgd	WG1075924		SS17-027C	NA
7	ITO15-SIMSTD1.0	TO15_SFS.qgm	R154818.qgd	WG1075924		SS17-027B1	NA
7	ITO15-SIMSTD5.0	TO15_SFS.qgm	R154819.qgd	WG1075924		SS17-027B1	NA
7	ITO15-SIMSTD010	TO15_SFS.qgm	R154820.qgd	WG1075924		SS17-027B1	NA
8	ITO15-SIMSTD020	TO15_SFS.qgm	R154821.qgd	WG1075924		SS17-027A	NA
8	ITO15-SIMSTD050	TO15_SFS.qgm	R154822.qgd	WG1075924		SS17-027A	NA
8	ITO15-LLSTD100	TO15_SFS.qgm	R154823.qgd	WG1075924	NOT USED FOR SIM	SS27-028A	NA
1	BLANK	TO15_SFS.qgm	R154824.qgd	WG1075924			NA
1	BLANK	TO15_SFS.qgm	R154825.qgd	WG1075924			NA
2	CTO15-LLSTD010	TO15_SFS.qgm	R154826.qgd	WG1075924	FULL SCAN ICV	SS17-033C	NA
2	CTO15-SIMSTD5.0	TO15_SFS.qgm	R154827.qgd	WG1075925	SIM ICV	SS17-033C	NA

Alpha Analytical Air Lab
Instrument Run Log

Date(s) of Initial Calibration: Refer to Initial Calibration Summary Form 6

Date Acquired: see Instrument Performance Check Summary and/or quantitation rep

Sample ID information: L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

Dilution Factor: See Form 1 report, or divide nominal volume by actual volume analyzed

Alpha Analytical Air Lab
Instrument Run Log

Instrument ID: Airlab15

Internal Standard/Surrogate IDs: SS17-024 / SS17-031

Date: 01/02/18

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: MB

Sequence File Name: 180102.S

SIM ICAL# 14300 Full Scan ICAL# 14299 NJ ICAL# APH ICAL#

AS Position #	Sample ID	Acquisition Method	Data File ID	Standard ID or Batch ID #, ICAL Ref #	Comment (s)	Product/ sublist	Leak Check Pass ? Y/N
1	WG1078148-1,3,250,250	TO15_SFS.qgm	R154987.qgd	WG1078148,ICAL14299	TUNE		NA
2	WG1078148-2,3,250,250	TO15_SFS.qgm	R154988.qgd	WG1078148,ICAL14299	CC	SS17-027E	NA
3	WG1078148-3,3,250,250	TO15_SFS.qgm	R154989.qgd	WG1078148,ICAL14299	LL LCS	SS17-033A	NA
3	SIM LCS,3,250,250	TO15_SFS.qgm	R154990.qgd	WG1078148,ICAL14299	SIM LCS	SS17-033A	NA
1	WG1078148-4,3,250,250	TO15_SFS.qgm	R154991.qgd	WG1078148,ICAL14299	BLANK		NA
1	WG1078148-4,3,250,250	TO15_SFS.qgm	R154992.qgd	WG1078148,ICAL14299	BLANK		NA
2	L1747629-03,3,250,250	TO15_SFS.qgm	R154993.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
3	L1747629-01,3,250,250	TO15_SFS.qgm	R154994.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
3	WG1078148-5,3,250,250	TO15_SFS.qgm	R154995.qgd	WG1078148,ICAL14299	TO15-LL / SIM DUP	NY/ 7 SIM	Y
4	L1747629-02,3,250,250	TO15_SFS.qgm	R154996.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
5	L1747629-07,3,250,250	TO15_SFS.qgm	R154997.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
6	L1747629-09,3,250,250	TO15_SFS.qgm	R154998.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
7	L1747754-01,3,250,250	TO15_SFS.qgm	R154999.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
8	L1747754-02,3,250,250	TO15_SFS.qgm	R155000.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
9	L1747629-04,3,250,250	TO15_SFS.qgm	R155001.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
10	L1747547-01,3,250,250	TO15_SFS.qgm	R155002.qgd	WG1078148,ICAL14299		NY	Y
11	L1747533-06,3,250,250	TO15_SFS.qgm	R155003.qgd	WG1077988,ICAL14299		9-CL	Y
11	WG1077988-5,3,250,250	TO15_SFS.qgm	R155004.qgd	WG1077988,ICAL14299	MCP-TO15 DUP	9-CL	Y
12	L1747533-07D,3,50,250	TO15_SFS.qgm	R155005.qgd	WG1077988,ICAL14299	OVERDILUTED	9-CL	Y
13	L1747533-08D,3,200,250	TO15_SFS.qgm	R155006.qgd	WG1077988,ICAL14299		9-CL	Y

Alpha Analytical Air Lab
Instrument Run Log

14	L1747533-05D,3,25,250	TO15_SFS.qgm	R155007.qgd	WG1077988,ICAL14299	PCE ONLY	9-CL	Y
15	L1747487-01,3,250,250	TO15_SFS.qgm	R155008.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
16	L1747487-02,3,250,250	TO15_SFS.qgm	R155009.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
1	L1747487-03,3,250,250	TO15_SFS.qgm	R155010.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
12	L1747533-07D,3,125,250	TO15_SFS.qgm	R155011.qgd	WG1077988,ICAL14299		9-CL	Y
14	L1747533-05D,3,50,250	TO15_SFS.qgm	R155012.qgd	WG1077988,ICAL14299		9-CL	Y

Date(s) of Initial Calibration: Refer to Initial Calibration Summary Form 6

Date Acquired: see Instrument Performance Check Summary and/or quantitation rep

Sample ID information: L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

Dilution Factor: See Form 1 report, or divide nominal volume by actual volume analyzed

GC/MS VOA
Air Analysis
Selective Ion Monitoring

Volatiles QC Summary

Lab Duplicates
Form 3

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Client Sample ID	: NA	**Matrix**	: AIR
Lab Sample ID	: NA	**Analysis Date**	: 01/02/18 18:07
Lab File ID	: R154994_EV2	**DUP File ID**	: r154995_Ev2
Dup Sample ID	: WG1078229-5	**DUP Analysis Date**	: 01/02/18 18:50

Parameter	Sample Concentration (ppbV)	Duplicate Concentration (ppbV)	RPD	RPD Limit
Vinyl chloride	ND	ND	NC	25
1,1-Dichloroethene	ND	ND	NC	25
cis-1,2-Dichloroethene	0.022	0.024	9	25
1,1,1-Trichloroethane	ND	ND	NC	25
Carbon tetrachloride	0.064	0.067	5	25
Trichloroethene	0.313	0.324	3	25
Tetrachloroethene	0.043	0.045	5	25

Laboratory Control Sample
Form 3

Client : Sterling Environmental Eng **Lab Number** : L1747754
Project Name : EHS 2017 IA **Project Number** : 28014
Matrix : AIR
LCS Sample ID : WG1078229-3 **Analysis Date** : 01/02/18 12:12 **File ID** : R154990_Ev2
LCSD Sample ID : **Analysis Date** : **File ID** :

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
Propylene	5	4.70	94				-	70-130	25
Dichlorodifluoromethane	5	4.60	92				-	70-130	25
Chloromethane	5	4.06	81				-	70-130	25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5	4.34	87				-	70-130	25
Vinyl chloride	5	4.35	87				-	70-130	25
1,3-Butadiene	5	4.40	88				-	70-130	25
Bromomethane	5	4.48	90				-	70-130	25
Chloroethane	5	4.23	85				-	70-130	25
Ethyl Alcohol	25	19.8	79				-	70-130	25
Vinyl bromide	5	4.21	84				-	70-130	25
Acetone	25	22.3	89				-	70-130	25
Trichlorofluoromethane	5	4.73	95				-	70-130	25
iso-Propyl Alcohol	12.5	10.4	83				-	70-130	25
Acrylonitrile	5	3.66	73				-	70-130	25
1,1-Dichloroethene	5	4.52	90				-	70-130	25
tert-Butyl Alcohol	5	3.39	68 Q				-	70-130	25
Methylene chloride	5	4.25	85				-	70-130	25
3-Chloropropene	5	4.65	93				-	70-130	25
Carbon disulfide	5	4.00	80				-	70-130	25
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	4.69	94				-	70-130	25
Halothane	5	5.49	110				-	70-130	25
trans-1,2-Dichloroethene	5	4.80	96				-	70-130	25
1,1-Dichloroethane	5	4.83	97				-	70-130	25
Methyl tert butyl ether	5	4.49	90				-	70-130	25

Laboratory Control Sample
Form 3

Client : Sterling Environmental Eng
Lab Number : L1747754
Project Name : EHS 2017 IA
Project Number : 28014
Matrix : AIR
LCS Sample ID : WG1078229-3 **Analysis Date** : 01/02/18 12:12 **File ID** : R154990_Ev2
LCSD Sample ID : **Analysis Date** : **File ID** :

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
Vinyl acetate	5	5.04	101				-	70-130	25
2-Butanone	5	4.54	91				-	70-130	25
cis-1,2-Dichloroethene	5	5.09	102				-	70-130	25
Ethyl Acetate	5	5.16	103				-	70-130	25
Chloroform	5	4.96	99				-	70-130	25
Tetrahydrofuran	5	4.50	90				-	70-130	25
1,2-Dichloroethane	5	4.99	100				-	70-130	25
n-Hexane	5	4.65	93				-	70-130	25
1,1,1-Trichloroethane	5	4.64	93				-	70-130	25
Benzene	5	4.18	84				-	70-130	25
Carbon tetrachloride	5	4.88	98				-	70-130	25
Cyclohexane	5	4.56	91				-	70-130	25
Dibromomethane	5	3.79	76				-	70-130	25
1,2-Dichloropropane	5	4.43	89				-	70-130	25
Bromodichloromethane	5	4.81	96				-	70-130	25
1,4-Dioxane	5	4.74	95				-	70-130	25
Trichloroethene	5	4.53	91				-	70-130	25
2,2,4-Trimethylpentane	5	4.69	94				-	70-130	25
cis-1,3-Dichloropropene	5	4.56	91				-	70-130	25
4-Methyl-2-pentanone	5	4.29	86				-	70-130	25
trans-1,3-Dichloropropene	5	3.96	79				-	70-130	25
1,1,2-Trichloroethane	5	4.63	93				-	70-130	25
Toluene	5	4.69	94				-	70-130	25
2-Hexanone	5	4.43	89				-	70-130	25
Dibromochloromethane	5	5.29	106				-	70-130	25
1,2-Dibromoethane	5	4.88	98				-	70-130	25
Tetrachloroethene	5	4.74	95				-	70-130	25
1,1,1,2-Tetrachloroethane	5	4.56	91				-	70-130	25

Laboratory Control Sample
Form 3

Client : Sterling Environmental Eng
Lab Number : L1747754
Project Name : EHS 2017 IA
Project Number : 28014
Matrix : AIR
LCS Sample ID : WG1078229-3 **Analysis Date** : 01/02/18 12:12 **File ID** : R154990_Ev2
LCSD Sample ID : **Analysis Date** : **File ID** :

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ppbV)	Found (ppbV)	%R	True (ppbV)	Found (ppbV)	%R	RPD	Recovery Limits	RPD Limit
Chlorobenzene	5	4.79	96				-	70-130	25
Ethylbenzene	5	4.92	98				-	70-130	25
p/m-Xylene	10	9.86	99				-	70-130	25
Bromoform	5	5.55	111				-	70-130	25
Styrene	5	4.83	97				-	70-130	25
1,1,2,2-Tetrachloroethane	5	4.95	99				-	70-130	25
o-Xylene	5	4.99	100				-	70-130	25
1,2,3-Trichloropropane	5	4.37	87				-	70-130	25
Isopropylbenzene	5	4.60	92				-	70-130	25
Bromobenzene	5	4.38	88				-	70-130	25
4-Ethyltoluene	5	4.88	98				-	70-130	25
1,3,5-Trimethylbenzene	5	5.00	100				-	70-130	25
1,2,4-Trimethylbenzene	5	5.14	103				-	70-130	25
Benzyl chloride	5	5.24	105				-	70-130	25
1,3-Dichlorobenzene	5	5.03	101				-	70-130	25
1,4-Dichlorobenzene	5	4.95	99				-	70-130	25
sec-Butylbenzene	5	4.63	93				-	70-130	25
p-Isopropyltoluene	5	4.43	89				-	70-130	25
1,2-Dichlorobenzene	5	5.07	101				-	70-130	25
n-Butylbenzene	5	4.92	98				-	70-130	25
1,2,4-Trichlorobenzene	5	5.64	113				-	70-130	25
Naphthalene	5	5.20	104				-	70-130	25
1,2,3-Trichlorobenzene	5	5.26	105				-	70-130	25
Hexachlorobutadiene	5	5.72	114				-	70-130	25

Method Blank Summary
Form 4

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab Sample ID	: WG1078229-4	**Lab File ID**	: r154992_Ev2
Instrument ID	: AIRLAB15		
Matrix	: AIR	**Analysis Date**	: 01/02/18 15:23

Client Sample No.	Lab Sample ID	Analysis Date
WG1078229-3LCS	WG1078229-3	01/02/18 12:12
IA-1DUP	WG1078229-5	01/02/18 18:50
IA-A_122717	L1747754-01	01/02/18 21:38
IA-B_122717	L1747754-02	01/02/18 22:21

Instrument Performance Check
Bromofluorobenzene (BFB)
Form 5

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Analysis Date**	: 12/22/17 14:17
Tune Standard	: WG1075925-1	**Tune File ID**	: r154812_tune

m/e	Ion Abundance Criteria	%Relative Abundance
50	8.0 - 40.0% of mass 95	15.5
75	30.0 - 66.0% of mass 95	38.6
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.3 (.5)1
174	50.0 - 120.0% of mass 95	65.3
175	4.0 - 9.0% of mass 174	4.5 (6.9)1
176	93.0 - 101% of mass 174	60.8 (93.1)1
177	5.0 - 9.0% of mass 176	3.9 (6.5)2

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
STD0.02	R1034549-1	R154813_EV2	12/22/17 14:54
STD0.04	R1034549-2	R154814_EV2	12/22/17 15:32
STD0.1	R1034549-3	R154815_EV2	12/22/17 16:12
STD0.2	R1034549-5	R154816_EV2	12/22/17 16:49
STD0.5	R1034549-4	R154817_EV2	12/22/17 17:27
STD1.0	R1034549-6	R154818_EV2	12/22/17 18:07
STD5.0	R1034549-7	R154819_EV2	12/22/17 18:44
STD010	R1034549-8	R154820_EV2	12/22/17 19:25
STD020	R1034549-10	R154821_EV2	12/22/17 20:02
STD050	R1034549-9	R154822_EV2	12/22/17 20:41
ICV QUANT REPORT	R1034549-11	R154827_EV2	12/23/17 10:48

Instrument Performance Check
Bromofluorobenzene (BFB)
Form 5

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Analysis Date**	: 01/02/18 09:54
Tune Standard	: WG1078229-1	**Tune File ID**	: r154987_tune

m/e	Ion Abundance Criteria	%Relative Abundance
50	8.0 - 40.0% of mass 95	14.5
75	30.0 - 66.0% of mass 95	37.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.3 (.5)1
174	50.0 - 120.0% of mass 95	64.2
175	4.0 - 9.0% of mass 174	4.5 (7)1
176	93.0 - 101% of mass 174	60.9 (94.8)1
177	5.0 - 9.0% of mass 176	4.1 (6.7)2

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
WG1078229-2CCAL	WG1078229-2	R154990_EV2	01/02/18 12:12
WG1078229-3LCS	WG1078229-3	R154990_EV2	01/02/18 12:12
WG1078229-4BLANK	WG1078229-4	R154992_EV2	01/02/18 15:23
WG1078229-5DUP	WG1078229-5	R154995_EV2	01/02/18 18:50
IA-A_122717	L1747754-01	R154999_EV2	01/02/18 21:38
IA-B_122717	L1747754-02	R155000_EV2	01/02/18 22:21

Internal Standard Area and RT Summary
Form 8

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Analysis Date**	: 01/02/18 12:12
Sample No	: WG1078229-2	**Lab File ID**	: R154990_EV2

	Bromochloromethane		1,4-Difluorobenzene		Chlorobenzene-d5	
	Area	RT	Area	RT	Area	RT
WG1078229-2	130072	8.92	339026	11.16	58190	15.88
Upper Limit	182101	9.25	474636	11.49	81466	16.21
Lower Limit	78043	8.59	203416	10.83	34914	15.55
Sample ID						
WG1078229-3 LCS	130072	8.92	339026	11.16	58190	15.88
WG1078229-4 BLANK	127846	8.91	335353	11.16	57004	15.88
IA-1 DUP	124836	8.91	330266	11.16	56698	15.88
IA-A_122717	122535	8.91	323580	11.16	55255	15.88
IA-B_122717	122514	8.92	324533	11.16	55491	15.88

Area Upper Limit = +40% of internal standard area

Area Lower Limit = - 40% of internal standard area

RT Upper Limit = +0.33 minutes of internal standard RT

RT Lower Limit = -0.33 minutes of internal standard RT

* Values outside of QC limits

Date Created: 11/08/17
Created By: Jason Hebert
File: PM4244-1
Page: 1

Volatile Organics in Air by TO-15 SIM (AIR)

Holding Time: 30 days
Container/Sample Preservation: 1 - Canister - 2.7 Liter

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
1,1,1-Trichloroethane	71-55-6	0.02	0.006	ppbV	70-130	25		25	25			
1,1,1,2-Tetrachloroethane	630-20-6	0.02	0.006	ppbV	70-130	25		25	25			
1,1,2,2-Tetrachloroethane	79-34-5	0.02	0.007	ppbV	70-130	25		25	25			
1,1,2-Trichloroethane	79-00-5	0.02	0.004	ppbV	70-130	25		25	25			
1,1-Dichloroethane	75-34-3	0.02	0.007	ppbV	70-130	25		25	25			
1,1-Dichloroethene	75-35-4	0.02	0.007	ppbV	70-130	25		25	25			
1,2,4-Trimethylbenzene	95-63-6	0.02	0.007	ppbV	70-130	25		25	25			
1,2-Dibromoethane	106-93-4	0.02	0.008	ppbV	70-130	25		25	25			
1,2-Dichlorobenzene	95-50-1	0.02	0.006	ppbV	70-130	25		25	25			
1,2-Dichloroethane	107-06-2	0.02	0.005	ppbV	70-130	25		25	25			
1,2-Dichloropropane	78-87-5	0.02	0.008	ppbV	70-130	25		25	25			
1,3,5-Trimethylbenzene	108-67-8	0.02	0.005	ppbV	70-130	25		25	25			
1,3-Butadiene	106-99-0	0.02	0.007	ppbV	70-130	25		25	25			
1,3-Dichlorobenzene	541-73-1	0.02	0.006	ppbV	70-130	25		25	25			
1,4-Dichlorobenzene	106-46-7	0.02	0.008	ppbV	70-130	25		25	25			
1,4-Dioxane	123-91-1	0.1	0.014	ppbV	70-130	25		25	25			
2,2,4-Trimethylpentane	540-84-1	0.2	0.027	ppbV	70-130	25		25	25			
2-Hexanone	591-78-6	0.2	0.03	ppbV	70-130	25		25	25			
3-Chloropropene	107-05-1	0.2	0.02	ppbV	70-130	25		25	25			
4-Ethyltoluene	622-96-8	0.02	0.01	ppbV	70-130	25		25	25			
Benzene	71-43-2	0.1	0.019	ppbV	70-130	25		25	25			
Benzyl chloride	100-44-7	0.2	0.037	ppbV	70-130	25		25	25			
Bromodichloromethane	75-27-4	0.02	0.008	ppbV	70-130	25		25	25			
Bromoform	75-25-2	0.02	0.015	ppbV	70-130	25		25	25			
Bromomethane	74-83-9	0.02	0.008	ppbV	70-130	25		25	25			
Carbon disulfide	75-15-0	0.2	0.063	ppbV	70-130	25		25	25			
Carbon tetrachloride	56-23-5	0.02	0.007	ppbV	70-130	25		25	25			
Chlorobenzene	108-90-7	0.1	0.007	ppbV	70-130	25		25	25			
Chloroethane	75-00-3	0.1	0.017	ppbV	70-130	25		25	25			
Chloroform	67-66-3	0.02	0.005	ppbV	70-130	25		25	25			
Chloromethane	74-87-3	0.2	0.048	ppbV	70-130	25		25	25			
cis-1,2-Dichloroethene	156-59-2	0.02	0.007	ppbV	70-130	25		25	25			
trans-1,2-Dichloroethene	156-60-5	0.02	0.006	ppbV	70-130	25		25	25			
1,2-Dichloroethene (total)	540-59-0	0.02	0.006	ppbV	70-130	25		25	25			
cis-1,3-Dichloropropene	10061-01-5	0.02	0.006	ppbV	70-130	25		25	25			
1,3-Dichloropropene (Total)	542-75-6	0.02	0.008	ppbV	70-130	25		25	25			
Cyclohexane	110-82-7	0.2	0.03	ppbV	70-130	25		25	25			
Dibromochloromethane	124-48-1	0.02	0.008	ppbV	70-130	25		25	25			
Dichlorodifluoromethane	75-71-8	0.2	0.0112	ppbV	70-130	25		25	25			
Ethyl Alcohol	GCDAI06	5	0.157	ppbV	70-130	25		25	25			
Ethyl Acetate	141-78-6	0.5	0.038	ppbV	70-130	25		25	25			
Ethylbenzene	100-41-4	0.02	0.007	ppbV	70-130	25		25	25			

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)

Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/08/17
Created By: Jason Hebert
File: PM4244-1
Page: 2

Volatile Organics in Air by TO-15 SIM (AIR)

Holding Time: 30 days
Container/Sample Preservation: 1 - Canister - 2.7 Liter

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0.05	0.0127	ppbV	70-130	25		25	25			
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.05	0.0116	ppbV	70-130	25		25	25			
Methylene chloride	75-09-2	0.5	0.25	ppbV	70-130	25		25	25			
Methyl tert butyl ether	1634-04-4	0.2	0.006	ppbV	70-130	25		25	25			
Naphthalene	91-20-3	0.05	0.008	ppbV	70-130	25		25	25			
p/m-Xylene	179601-23-1	0.04	0.007	ppbV	70-130	25		25	25			
o-Xylene	95-47-6	0.02	0.008	ppbV	70-130	25		25	25			
Xylene (Total)	1330-20-7	0.02	0.007	ppbV	70-130	25		25	25			
Heptane	142-82-5	0.2	0.032	ppbV	70-130	25		25	25			
n-Hexane	110-54-3	0.2	0.033	ppbV	70-130	25		25	25			
Propylene	115-07-1	0.5	0.034	ppbV	70-130	25		25	25			
Styrene	100-42-5	0.02	0.007	ppbV	70-130	25		25	25			
Tetrachloroethene	127-18-4	0.02	0.008	ppbV	70-130	25		25	25			
Tetrahydrofuran	109-99-9	0.5	0.037	ppbV	70-130	25		25	25			
Toluene	108-88-3	0.05	0.006	ppbV	70-130	25		25	25			
trans-1,3-Dichloropropene	10061-02-6	0.02	0.008	ppbV	70-130	25		25	25			
Trichloroethene	79-01-6	0.02	0.007	ppbV	70-130	25		25	25			
1,2,4-Trichlorobenzene	120-82-1	0.05	0.01	ppbV	70-130	25		25	25			
Trichlorofluoromethane	75-69-4	0.05	0.0113	ppbV	70-130	25		25	25			
Vinyl acetate	108-05-4	1	0.027	ppbV	70-130	25		25	25			
Vinyl bromide	593-60-2	0.2	0.023	ppbV	70-130	25		25	25			
Hexachlorobutadiene	87-68-3	0.05	0.007	ppbV	70-130	25		25	25			
iso-Propyl Alcohol	67-63-0	0.5	0.153	ppbV	70-130	25		25	25			
Vinyl chloride	75-01-4	0.02	0.006	ppbV	70-130	25		25	25			
Acrylonitrile	107-13-1	0.5	0.0248	ppbV	70-130	25		25	25			
n-Butylbenzene	104-51-8	0.2	0.008	ppbV	70-130	25		25	25			
sec-Butylbenzene	135-98-8	0.2	0.008	ppbV	70-130	25		25	25			
Isopropylbenzene	98-82-8	0.2	0.007	ppbV	70-130	25		25	25			
p-Isopropyltoluene	99-87-6	0.2	0.007	ppbV	70-130	25		25	25			
Acetone	67-64-1	1	0.366	ppbV	70-130	25		25	25			
2-Butanone	78-93-3	0.5	0.016	ppbV	70-130	25		25	25			
4-Methyl-2-pentanone	108-10-1	0.5	0.005	ppbV	70-130	25		25	25			
Halothane	151-67-7	0.05	0.008	ppbV	70-130	25		25	25			
1,2,3-Trichlorobenzene	87-61-6	0.05	0.019	ppbV	70-130	25		25	25			
1,2-Dichloroethane-d4	*17060-07-0*									*70-130*		
Toluene-d8	*2037-26-5*									*70-130*		
Bromofluorobenzene	*460-00-4*									*70-130*		

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)

Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Volatiles Sample Data

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: L1747754-01	**Date Collected**	: 12/27/17 16:40
Client ID	: IA-A_122717	**Date Received**	: 12/27/17
Sample Location	: ELMIRA, NY	**Date Analyzed**	: 01/02/18 21:38
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15-SIM	**Analyst**	: GJ
Lab File ID	: R154999_EV2	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.067	0.020	--	0.421	0.126	--	
79-01-6	Trichloroethene	ND	0.020	--	ND	0.107	--	U
127-18-4	Tetrachloroethene	ND	0.020	--	ND	0.136	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: L1747754-02	**Date Collected**	: 12/27/17 17:15
Client ID	: IA-B_122717	**Date Received**	: 12/27/17
Sample Location	: ELMIRA, NY	**Date Analyzed**	: 01/02/18 22:21
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15-SIM	**Analyst**	: GJ
Lab File ID	: R155000_EV2	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.071	0.020	--	0.447	0.126	--	
79-01-6	Trichloroethene	ND	0.020	--	ND	0.107	--	U
127-18-4	Tetrachloroethene	ND	0.020	--	ND	0.136	--	U

Form 1
Volatile Organics

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1747754**
Project Name	**: EHS 2017 IA**	**Project Number**	**: 28014**
Lab ID	**: WG1078229-4**	**Date Collected**	**: NA**
Client ID	**: WG1078229-4BLANK**	**Date Received**	**: NA**
Sample Location	**:**	**Date Analyzed**	**: 01/02/18 15:23**
Sample Matrix	**: AIR**	**Dilution Factor**	**: 1**
Analytical Method	**: 48,TO-15-SIM**	**Analyst**	**: GJ**
Lab File ID	**: R154992_EV2**	**Instrument ID**	**: AIRLAB15**
Sample Amount	**: 250 ml**	**GC Column**	**: RTX-1**

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
115-07-1	Propylene	ND	0.500	--	ND	0.861	--	U
75-71-8	Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--	U
74-87-3	Chloromethane	ND	0.200	--	ND	0.413	--	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethan	ND	0.050	--	ND	0.349	--	U
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
106-99-0	1,3-Butadiene	ND	0.020	--	ND	0.044	--	U
74-83-9	Bromomethane	ND	0.020	--	ND	0.078	--	U
75-00-3	Chloroethane	ND	0.100	--	ND	0.264	--	U
64-17-5	Ethyl Alcohol	ND	5.00	--	ND	9.42	--	U
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	ND	1.00	--	ND	2.38	--	U
75-69-4	Trichlorofluoromethane	ND	0.050	--	ND	0.281	--	U
67-63-0	iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--	U
107-13-1	Acrylonitrile	ND	0.500	--	ND	1.09	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
75-65-0	tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.050	--	ND	0.383	--	U
151-67-7	Halothane	ND	0.050	--	ND	0.404	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
75-34-3	1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
108-05-4	Vinyl acetate	ND	1.00	--	ND	3.52	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078229-4	**Date Collected**	: NA
Client ID	: WG1078229-4BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 01/02/18 15:23
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15-SIM	**Analyst**	: GJ
Lab File ID	: R154992_EV2	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
67-66-3	Chloroform	ND	0.020	--	ND	0.098	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U
107-06-2	1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	U
110-54-3	n-Hexane	ND	0.200	--	ND	0.705	--	U
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
71-43-2	Benzene	ND	0.100	--	ND	0.319	--	U
56-23-5	Carbon tetrachloride	ND	0.020	--	ND	0.126	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
74-95-3	Dibromomethane	ND	0.200	--	ND	1.42	--	U
78-87-5	1,2-Dichloropropane	ND	0.020	--	ND	0.092	--	U
75-27-4	Bromodichloromethane	ND	0.020	--	ND	0.134	--	U
123-91-1	1,4-Dioxane	ND	0.100	--	ND	0.360	--	U
79-01-6	Trichloroethene	ND	0.020	--	ND	0.107	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--	U
108-88-3	Toluene	ND	0.050	--	ND	0.188	--	U
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.020	--	ND	0.170	--	U
106-93-4	1,2-Dibromoethane	ND	0.020	--	ND	0.154	--	U
127-18-4	Tetrachloroethene	ND	0.020	--	ND	0.136	--	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--	U
108-90-7	Chlorobenzene	ND	0.100	--	ND	0.461	--	U
100-41-4	Ethylbenzene	ND	0.020	--	ND	0.087	--	U
179601-23-1	p/m-Xylene	ND	0.040	--	ND	0.174	--	U

Form 1
Volatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Lab ID	: WG1078229-4	**Date Collected**	: NA
Client ID	: WG1078229-4BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 01/02/18 15:23
Sample Matrix	: AIR	**Dilution Factor**	: 1
Analytical Method	: 48,TO-15-SIM	**Analyst**	: GJ
Lab File ID	: R154992_EV2	**Instrument ID**	: AIRLAB15
Sample Amount	: 250 ml	**GC Column**	: RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-25-2	Bromoform	ND	0.020	--	ND	0.207	--	U
100-42-5	Styrene	ND	0.020	--	ND	0.085	--	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--	U
95-47-6	o-Xylene	ND	0.020	--	ND	0.087	--	U
96-18-4	1,2,3-Trichloropropane	ND	0.020	--	ND	0.121	--	U
98-82-8	Isopropylbenzene	ND	0.200	--	ND	0.983	--	U
108-86-1	Bromobenzene	ND	0.200	--	ND	0.793	--	U
622-96-8	4-Ethyltoluene	ND	0.020	--	ND	0.098	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--	U
135-98-8	sec-Butylbenzene	ND	0.200	--	ND	1.10	--	U
99-87-6	p-Isopropyltoluene	ND	0.200	--	ND	1.10	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--	U
104-51-8	n-Butylbenzene	ND	0.200	--	ND	1.10	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--	U
91-20-3	Naphthalene	ND	0.050	--	ND	0.262	--	U
87-61-6	1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--	U
87-68-3	Hexachlorobutadiene	ND	0.050	--	ND	0.533	--	U

Form 1
Volatile Organics

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Lab ID : WG1078229-5
Client ID : IA-1DUP
Sample Location :
Sample Matrix : AIR
Analytical Method : 48,TO-15-SIM
Lab File ID : R154995_EV2
Sample Amount : 250 ml

Lab Number : L1747754
Project Number : 28014
Date Collected : 12/26/17 15:15
Date Received : 12/26/17
Date Analyzed : 01/02/18 18:50
Dilution Factor : 1
Analyst : GJ
Instrument ID : AIRLAB15
GC Column : RTX-1

		ppbV			ug/m3			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.020	--	ND	0.051	--	U
75-35-4	1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	U
156-59-2	cis-1,2-Dichloroethene	0.024	0.020	--	0.095	0.079	--	
71-55-6	1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	U
56-23-5	Carbon tetrachloride	0.067	0.020	--	0.421	0.126	--	
79-01-6	Trichloroethene	0.324	0.020	--	1.74	0.107	--	
127-18-4	Tetrachloroethene	0.045	0.020	--	0.305	0.136	--	

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : r154999_Ev2.D
  Acq On    :  2 Jan 2018   9:38 PM
  Operator  : AIRLAB15:GJ
  Sample    : L1747754-01,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 03 12:14:34 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : 7-NY-SIM - .

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   122535    10.000 ppbV    0.00
     Standard Area  =       130072                 Recovery   =   94.21%
    33) 1,4-difluorobenzene         11.16  114   323580    10.000 ppbV    0.02
     Standard Area  =       339026                 Recovery   =   95.44%
    51) chlorobenzene-D5            15.88   54    55255    10.000 ppbV    0.00
     Standard Area  =        58190                 Recovery   =   94.96%

   System Monitoring Compounds

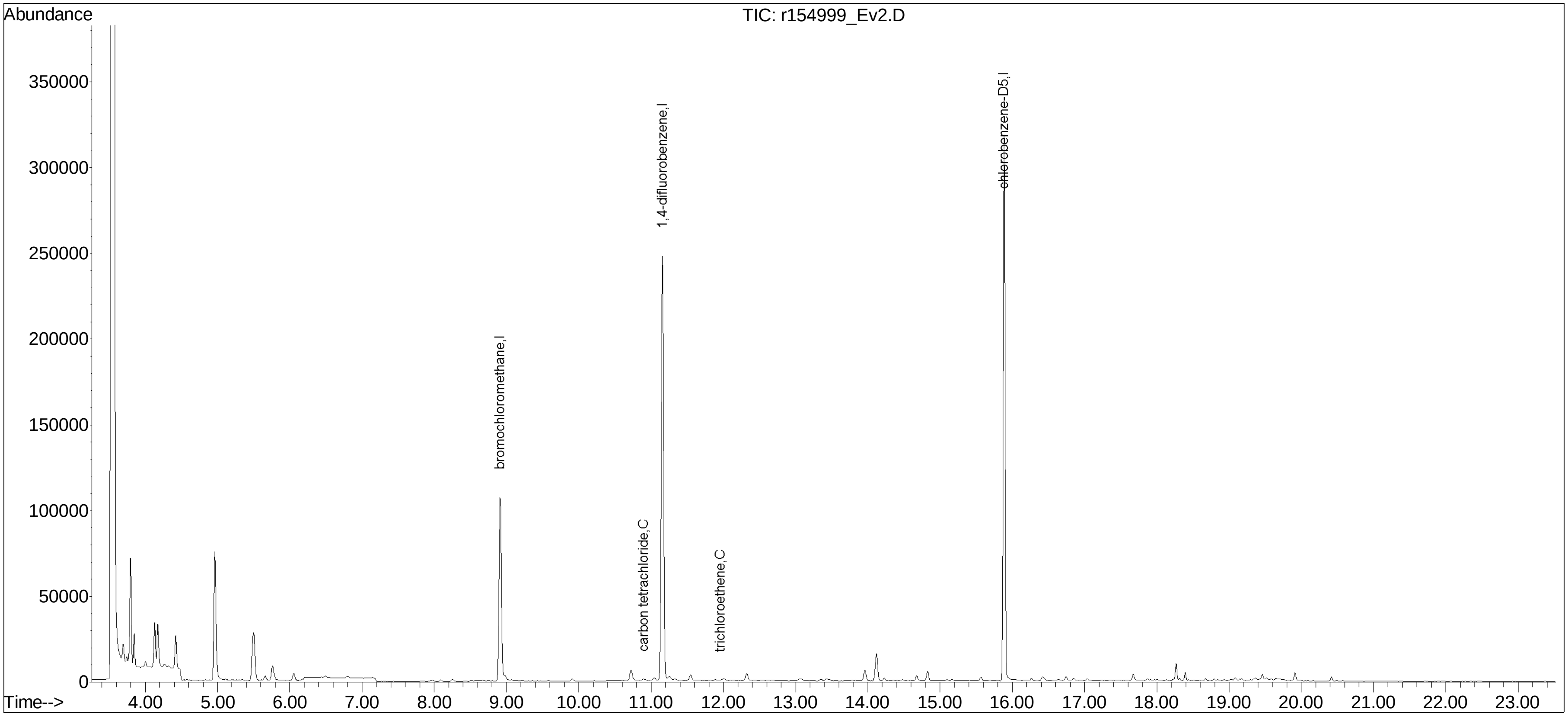
   Target Compounds                                                   Qvalue
     6) vinyl chloride               0.00              0       N.D.
    16) 1,1-dichloroethene           0.00              0       N.D.
    28) cis-1,2-dichloroethene       0.00              0       N.D.
    36) 1,1,1-trichloroethane        0.00              0       N.D.
    38) carbon tetrachloride        10.90  117       783      0.067 ppbV      96
    44) trichloroethene             11.96  130       185M4    0.014 ppbV
    57) tetrachloroethene           15.29              0       N.D.
   ---------------------------------------------------------------------------

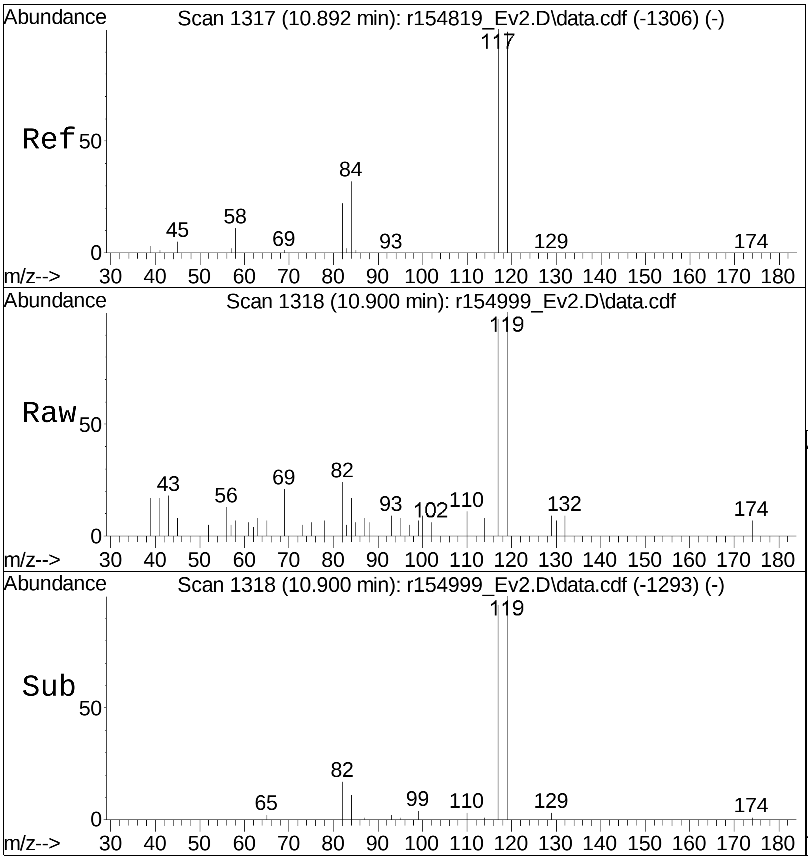
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : 7-NY-SIM - .\Data\Airlab15\2018\180102SIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r154999_Ev2.D
Acq On    :  2 Jan 2018   9:38 PM
Operator  : AIRLAB15:GJ
Sample    : L1747754-01,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

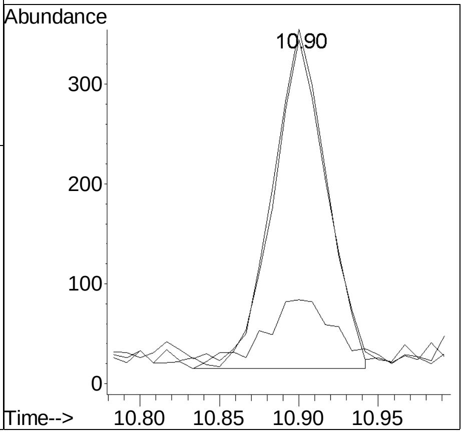
Quant Time: Jan 03 12:14:34 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
```

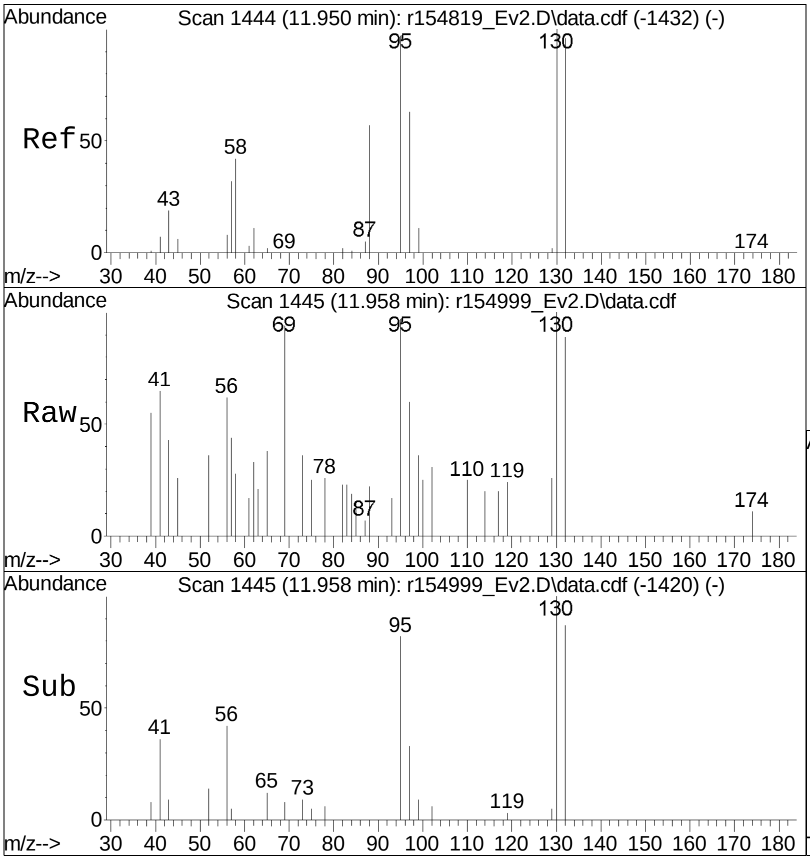




```
#38
carbon tetrachloride
Concen:     0.07 ppbV
RT:    10.90 min  Scan# 1318
Delta R.T.  0.008 min
Lab File:   r154999_Ev2.D
Acq:  2 Jan 2018   9:38 PM

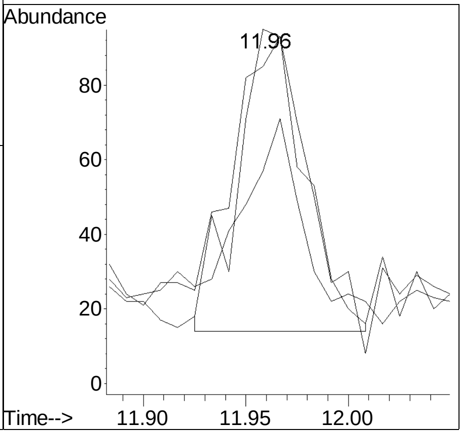
Tgt Ion:117 Resp:      783
Ion  Ratio  Lower  Upper
117  100
119  102.9   79.2  118.8
 82   24.3   18.1   27.1
```





```
#44
trichloroethene
Concen:    0.01 ppbV m
RT:   11.96 min  Scan# 1445
Delta R.T.  0.008 min
Lab File:   r154999_Ev2.D
Acq:  2 Jan 2018   9:38 PM

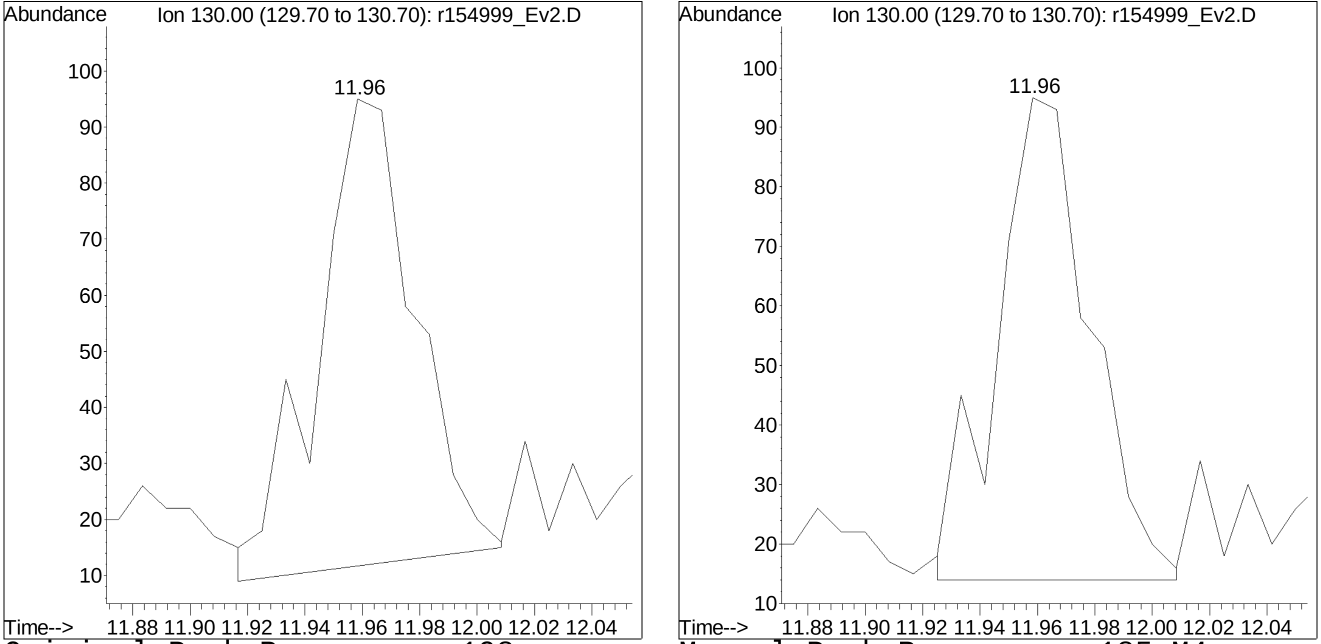
Tgt Ion:130 Resp:     185
Ion  Ratio  Lower  Upper
130  100
132   89.5   76.7  115.1
 97   60.0   50.5   75.7
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154999_Ev2.D                Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018  9:38 PM            Instrument  :
Sample      : L1747754-01,3,250,250        Quant Date  : 1/3/2018  7:09 am
```

Compound #44: trichloroethene



Original Peak Response = 198   Manual Peak Response = 185 M4

M4 = Poor automated baseline construction.

```
                   Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r155000_Ev2.D
Acq On    :  2 Jan 2018  10:21 PM
Operator  : AIRLAB15:GJ
Sample    : L1747754-02,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 07:09:46 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
Sub List     : 7-NY-SIM - .

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane           8.92   49   122514    10.000 ppbV     0.00
   Standard Area  =       130072                 Recovery   =   94.19%
  33) 1,4-difluorobenzene         11.16  114   324533    10.000 ppbV     0.02
   Standard Area  =       339026                 Recovery   =   95.73%
  51) chlorobenzene-D5            15.88   54    55491    10.000 ppbV     0.00
   Standard Area  =        58190                 Recovery   =   95.36%

 System Monitoring Compounds

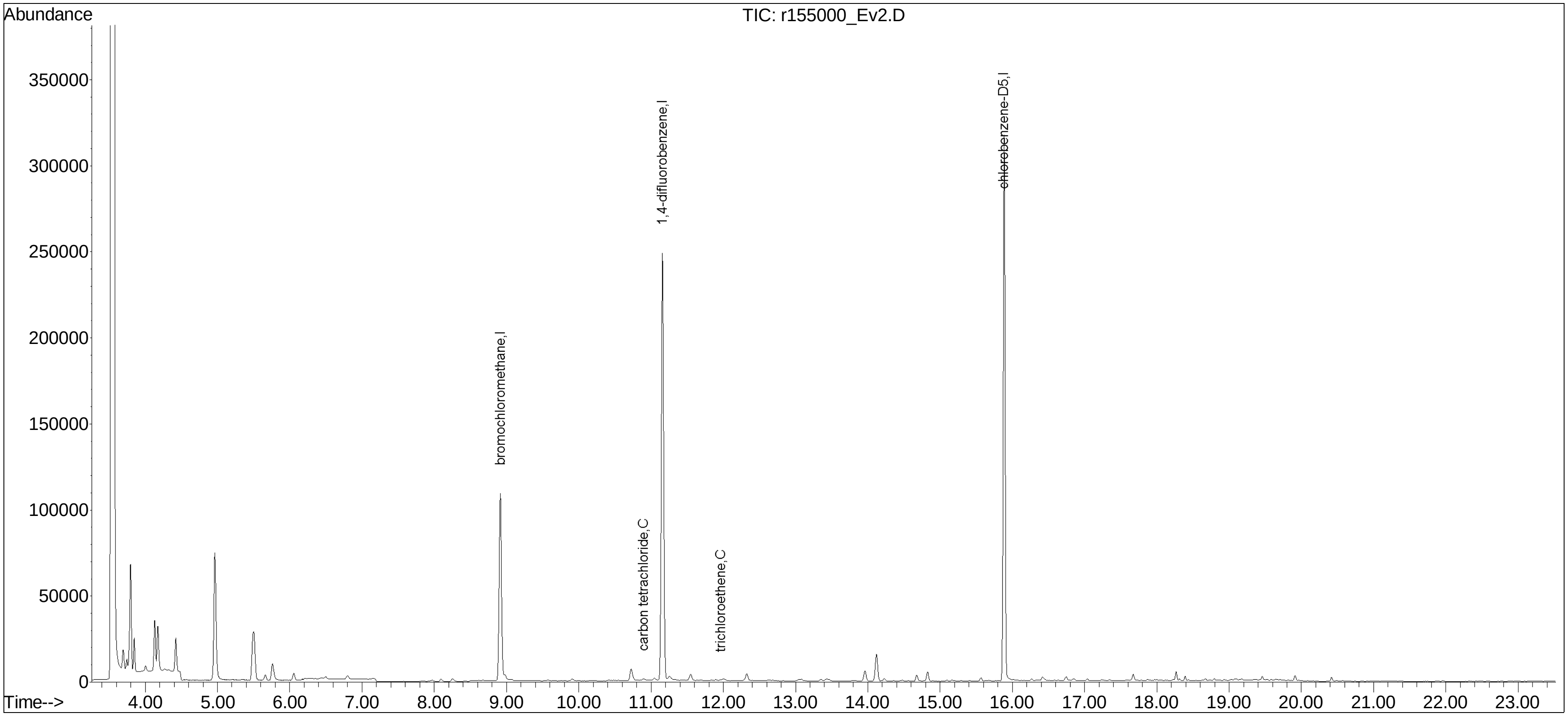
 Target Compounds                                                   Qvalue
   6) vinyl chloride               0.00              0       N.D.
  16) 1,1-dichloroethene           6.22              0       N.D.
  28) cis-1,2-dichloroethene       0.00              0       N.D.
  36) 1,1,1-trichloroethane       10.20              0       N.D.
  38) carbon tetrachloride        10.90  117       837      0.071 ppbV      95
  44) trichloroethene             11.97  130       218      0.016 ppbV #    90
  57) tetrachloroethene           15.29              0       N.D.
 --------------------------------------------------------------------------

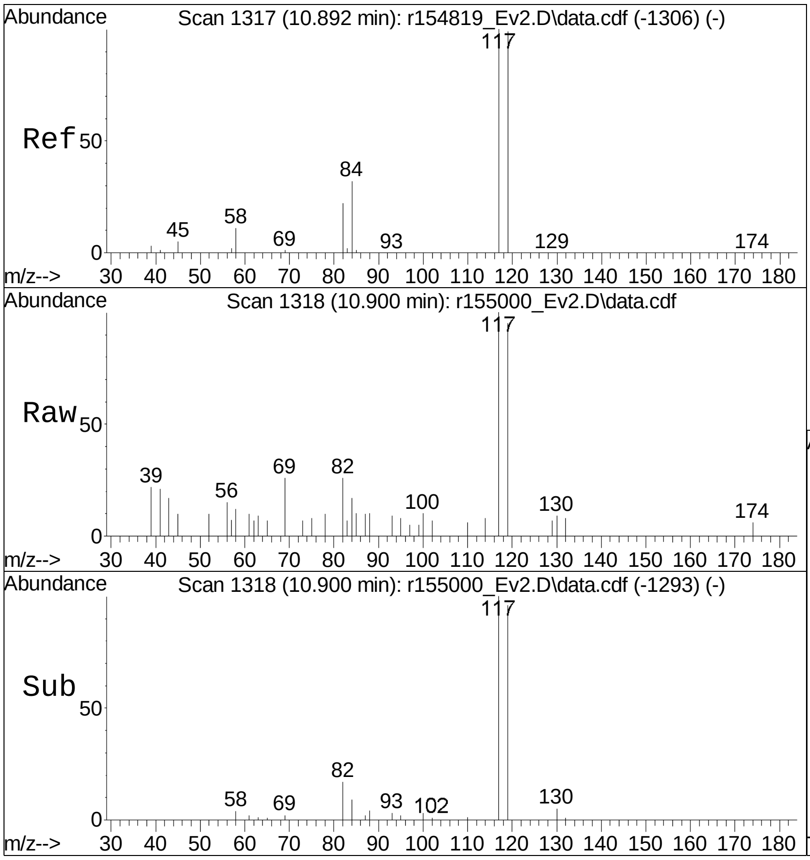
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : 7-NY-SIM - .\Data\Airlab15\2018\180102SIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r155000_Ev2.D
Acq On    :  2 Jan 2018  10:21 PM
Operator  : AIRLAB15:GJ
Sample    : L1747754-02,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

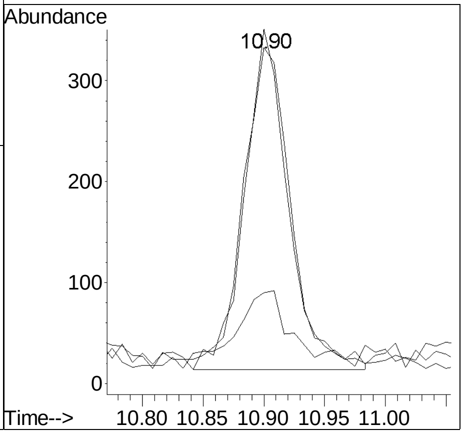
Quant Time: Jan 03 07:09:46 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
```

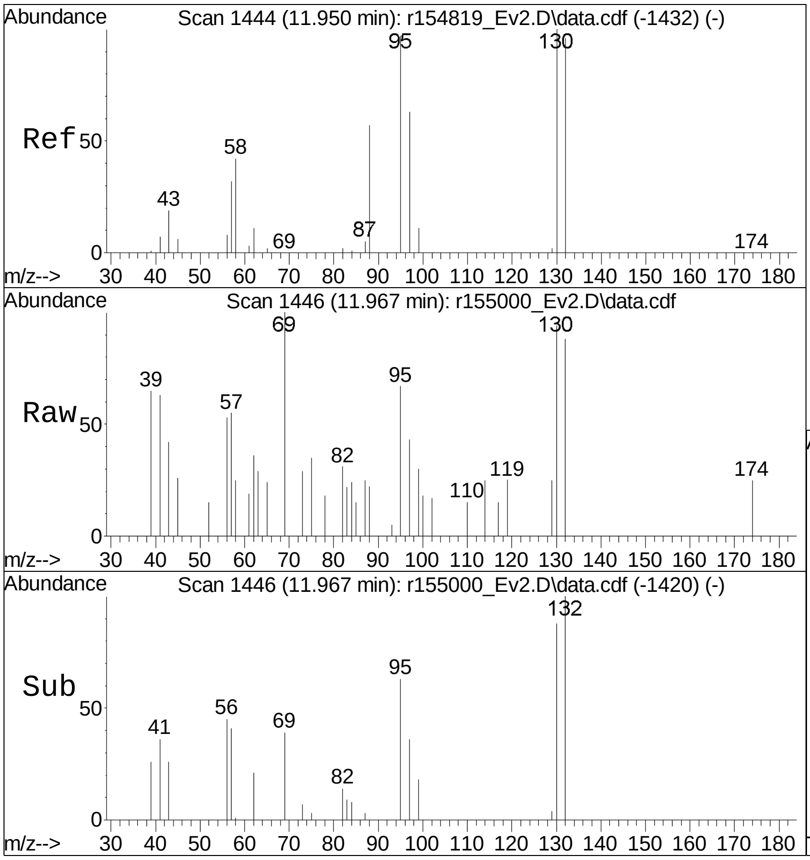




```
#38
carbon tetrachloride
Concen:    0.07 ppbV
RT:   10.90 min  Scan# 1318
Delta R.T.  0.008 min
Lab File:   r155000_Ev2.D
Acq:  2 Jan 2018  10:21 PM

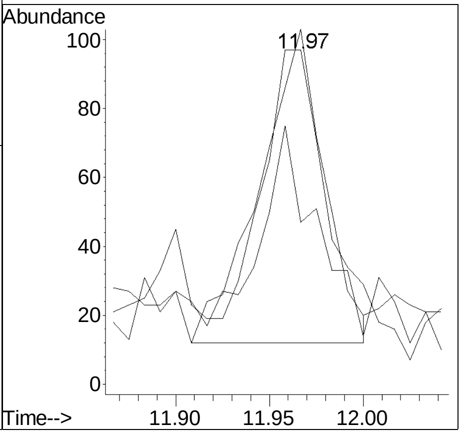
Tgt Ion:117 Resp:     837
Ion  Ratio  Lower  Upper
117  100
119   94.9   79.2  118.8
 82   25.6   18.1   27.1
```





```
#44
trichloroethene
Concen:    0.02 ppbV
RT:   11.97 min  Scan# 1446
Delta R.T.  0.017 min
Lab File:   r155000_Ev2.D
Acq:  2 Jan 2018  10:21 PM

Tgt Ion:130 Resp:     218
Ion  Ratio  Lower  Upper
130  100
132   94.2   76.7  115.1
 97   45.6   50.5   75.7#
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r155000_Ev2.D              Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 10:21 PM          Instrument  :
Sample      : L1747754-02,3,250,250      Quant Date  : 1/3/2018  7:09 am
```

There are no manual integrations or false positives in this file.

Volatiles Standards Data

Initial Calibration

Initial Calibration Summary
Form 6

Client : **Sterling Environmental Eng**
Project Name : **EHS 2017 IA**
Instrument ID : **AIRLAB15**
Calibration dates : **12/22/17 14:54 12/22/17 20:41**

Lab Number : **L1747754**
Project Number : **28014**
Ical Ref : **ICAL14300**

```
Calibration Files
0.02=r154813_Ev2.D  0.04=r154814_Ev2.D  0.1 =r154815_Ev2.D  0.2 =r154816_Ev2.D  0.5 =r154817_Ev2.D
1.0 =r154818_Ev2.D  5.0 =r154819_Ev2.D  10.0=r154820_Ev2.D  20.0=r154821_Ev2.D  50.0=r154822_Ev2.D
```

		Compound	0.02	0.04	0.1	0.2	0.5	1.0	5.0	10.0	20.0	50.0	Avg	%RSD
1)	I	bromochloromethane	----------------ISTD---------------------											
2)		propylene			0.932	0.898	0.827	0.821	0.760	0.719	0.670	0.604	0.7788	14.40
3)		dichlorodifluoromethane	1.231	1.490	1.129	1.258	1.209	1.207	1.163	1.120	1.004	0.910	1.1722	13.22
4)	C	chloromethane		0.859	0.637	0.705	0.676	0.679	0.646	0.621	0.557	0.513	0.6549	14.91
5)		Freon-114	1.619	1.849	1.450	1.565	1.513	1.502	1.442	1.398	1.253	1.124	1.4718	13.42
6)	C	vinyl chloride	0.786	0.824	0.601	0.666	0.644	0.643	0.616	0.597	0.537	0.505	0.6419	15.45
7)	C	1,3-butadiene	0.531	0.687	0.548	0.596	0.578	0.572	0.559	0.549	0.496	0.467	0.5582	10.63
8)	C	bromomethane	0.564	0.795	0.635	0.617	0.603	0.614	0.578	0.557	0.500	0.467	0.5931	14.95
9)	C	chloroethane	0.398	0.393	0.337	0.375	0.348	0.336	0.320	0.309	0.277	0.256	0.3348	13.95
10)		ethanol					0.573	0.520	0.502	0.478	0.428	0.389	0.4816	13.70
11)	C	vinyl bromide	0.813	0.864	0.646	0.670	0.637	0.635	0.616	0.608	0.547	0.495	0.6532	16.96
12)		acetone				1.108	0.926	0.870	0.726	0.691	0.643	0.548	0.7874	24.34
13)		trichlorofluoromethane	1.025	1.338	1.060	1.045	1.019	1.018	0.975	0.942	0.833	0.754	1.0010	15.40
14)		isopropyl alcohol				1.722	1.320	1.194	1.006	0.967	0.903	0.798	1.1300	27.83
15)	C	acrylonitrile	0.757	0.722	0.513	0.544	0.524	0.546	0.535	0.530	0.485	0.462	0.5618	17.34
16)	C	1,1-dichloroethene	0.743	1.109	0.761	0.873	0.819	0.828	0.801	0.783	0.701	0.642	0.8062	15.55
17)		tertiary butyl alcohol	1.377	1.771	1.169	1.091	1.047	1.050	1.009	0.996	0.902	0.846	1.1258	23.93
18)	C	methylene chloride					0.850	0.837	0.798	0.780	0.697	0.635	0.7662	10.95
19)	C	3-chloropropene				0.970	0.960	0.958	0.936	0.918	0.814	0.733	0.8983	10.05
20)	C	carbon disulfide				2.017	1.904	1.916	2.090	1.933	1.746	1.546	1.8789	9.64
21)		Freon 113	1.042	1.326	1.076	1.272	1.139	1.141	1.222	1.066	0.949	0.838	1.1072	13.29
22)		Halothane	0.992	1.178	0.874	0.960	0.928	0.939	0.837	0.835	0.859	0.821	0.9223	11.63
23)		trans-1,2-dichloroethene	1.142	1.395	1.108	1.185	1.175	1.174	1.149	1.141	1.014	0.929	1.1411	10.56
24)	C	1,1-dichloroethane	1.427	1.634	1.297	1.481	1.421	1.415	1.375	1.357	1.209	1.109	1.3724	10.56
25)	C	MTBE	1.825	2.100	1.695	1.920	1.875	1.898	1.869	1.864	1.691	1.594	1.8331	7.80
26)	C	vinyl acetate			1.927	2.045	1.999	2.026	2.083	2.116	1.921	1.804	1.9901	5.10
27)	C	2-butanone				2.130	2.056	2.046	1.995	1.981	1.773	1.645	1.9468	8.89
28)		cis-1,2-dichloroethene	0.893	1.240	0.944	1.053	1.025	1.027	1.006	0.990	0.882	0.813	0.9871	11.88
29)		Ethyl Acetate				0.276	0.289	0.289	0.287	0.288	0.255	0.237	0.2745	7.55
30)	C	chloroform	1.523	1.522	1.180	1.273	1.235	1.232	1.183	1.161	1.037	0.965	1.2311	14.57
31)		Tetrahydrofuran			1.196	1.303	1.317	1.289	1.300	1.274	1.143	1.053	1.2346	7.69
32)	C	1,2-dichloroethane	0.717	1.059	0.798	0.843	0.792	0.800	0.770	0.758	0.665	0.609	0.7809	15.38
33)	I	1,4-difluorobenzene	----------------ISTD---------------------											
34)	C	hexane			0.551	0.601	0.590	0.583	0.570	0.565	0.508	0.467	0.5545	8.19
35)	s	1,2-dichloroethane-D4	0.209	0.211	0.214	0.211	0.213	0.210	0.210	0.211	0.204	0.195	0.2088	2.63
36)	C	1,1,1-trichloroethane	0.481	0.522	0.414	0.448	0.434	0.424	0.425	0.422	0.382	0.361	0.4314	10.60
37)	C	benzene		1.420	1.076	1.120	1.071	1.046	1.033	1.026	0.938	0.897	1.0697	13.88
38)	C	carbon tetrachloride	0.324	0.464	0.348	0.364	0.359	0.355	0.366	0.367	0.337	0.328	0.3611	10.90

Initial Calibration Summary
Form 6

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754
Project Name	: EHS 2017 IA	**Project Number**	: 28014
Instrument ID	: AIRLAB15	**Ical Ref**	: ICAL14300
Calibration dates	: 12/22/17 14:54 12/22/17 20:41		

```
Calibration Files
0.02=r154813_Ev2.D  0.04=r154814_Ev2.D  0.1 =r154815_Ev2.D  0.2 =r154816_Ev2.D  0.5 =r154817_Ev2.D
1.0 =r154818_Ev2.D  5.0 =r154819_Ev2.D  10.0=r154820_Ev2.D  20.0=r154821_Ev2.D  50.0=r154822_Ev2.D
```

		Compound	0.02	0.04	0.1	0.2	0.5	1.0	5.0	10.0	20.0	50.0	Avg	%RSD
39)		cyclohexane	0.572	0.746	0.578	0.617	0.611	0.612	0.608	0.601	0.549	0.522	0.6016	9.92
40)		Dibromomethane	0.556	0.500	0.359	0.350	0.340	0.328	0.321	0.315	0.284	0.270	0.3623	25.51
41)	C	1,2-dichloropropane	0.375	0.525	0.395	0.428	0.408	0.404	0.400	0.393	0.353	0.330	0.4011	12.90
42)		bromodichloromethane	0.560	0.632	0.473	0.521	0.518	0.521	0.536	0.543	0.495	0.478	0.5277	8.70
43)	C	1,4-dioxane		0.277	0.199	0.260	0.258	0.253	0.253	0.252	0.233	0.224	0.2456	9.39
44)	C	trichloroethene	0.458	0.513	0.377	0.425	0.410	0.407	0.401	0.400	0.367	0.356	0.4114	11.21
45)	C	2,2,4-trimethylpentane	1.806	2.147	1.754	1.967	1.945	1.946	1.915	1.890	1.701	1.574	1.8646	8.63
46)		heptane	0.843	1.081	0.805	0.917	0.902	0.894	0.886	0.878	0.789	0.727	0.8722	10.82
47)	C	cis-1,3-dichloropropene	0.515	0.552	0.438	0.485	0.490	0.481	0.509	0.517	0.478	0.467	0.4933	6.42
48)	C	4-methyl-2-pentanone	1.124	1.101	0.877	1.004	1.010	1.022	1.036	1.026	0.922	0.852	0.9974	8.92
49)		trans-1,3-dichloropropene	0.479	0.492	0.403	0.437	0.438	0.440	0.467	0.477	0.445	0.434	0.4513	5.98
50)	C	1,1,2-trichloroethane	0.428	0.501	0.361	0.404	0.402	0.397	0.396	0.391	0.354	0.340	0.3973	11.34
51)	I	chlorobenzene-D5	----------------ISTD--------------------											
52)	C	toluene	7.440	8.397	6.472	7.229	7.117	6.930	6.902	6.829	6.182	5.827	6.9325	10.24
53)	s	toluene-D8	5.105	5.159	5.206	5.091	5.161	5.085	5.302	5.316	5.186	5.153	5.1764	1.55
54)		2-hexanone	4.235	5.212	4.573	5.100	5.352	5.469	5.326	5.444	4.896	4.521	5.0129	8.69
55)		dibromochloromethane	3.017	3.312	2.441	2.675	2.599	2.685	2.897	2.966	2.760	2.653	2.8006	8.96
56)	C	1,2-dibromoethane	3.048	3.592	2.926	3.296	3.267	3.222	3.224	3.246	2.981	2.856	3.1659	6.84
57)	C	tetrachloroethene	2.561	3.166	2.362	2.657	2.524	2.505	2.443	2.475	2.274	2.193	2.5159	10.58
58)		1,1,1,2-tetrachloroethane	2.153	2.480	1.923	2.130	2.090	2.107	2.191	2.213	2.051	1.969	2.1306	7.18
59)	C	chlorobenzene	5.044	6.619	5.024	5.572	5.442	5.374	5.306	5.292	4.846	4.611	5.3129	10.24
60)	C	ethylbenzene	8.210	9.600	7.618	8.736	8.809	8.812	8.785	8.691	7.892	7.347	8.4499	8.00
61)	C	m+p-xylene	6.407	7.987	6.336	7.209	7.257	7.208	7.177	7.098	6.352	5.786	6.8818	9.34
62)	C	bromoform	1.807	2.247	1.725	1.968	2.013	2.061	2.353	2.462	2.324	2.276	2.1236	11.59
63)	C	styrene	5.877	5.803	4.703	5.613	5.679	5.651	5.826	5.844	5.380	5.134	5.5511	6.80
64)	C	1,1,2,2-tetrachloroethane	4.855	5.811	4.423	5.127	5.062	5.046	5.032	5.025	4.566	4.165	4.9112	9.21
65)	C	o-xylene	6.686	7.968	6.333	7.352	7.384	7.310	7.267	7.121	6.416	5.766	6.9603	9.31
66)		1,2,3-Trichloropropane	3.905	4.818	3.554	4.082	4.075	4.022	4.004	3.995	3.649	3.529	3.9631	9.29
67)	s	bromofluorobenzene	2.535	2.724	2.877	2.694	2.799	2.852	2.659	2.764	3.073	2.906	2.7882	5.36
68)	C	isopropylbenzene	0.860	1.045	0.824	0.940	0.939	0.932	0.933	0.933	0.852	0.793	0.9051	8.07
69)		Bromobenzene	5.170	5.815	4.709	5.241	5.242	5.194	5.104	5.111	4.687	4.500	5.0773	7.32
70)		4-ethyl toluene	0.900	1.068	0.862	1.038	1.055	1.071	1.063	1.062	0.963	0.891	0.9972	8.48
71)		1,3,5-trimethylbenzene	7.377	8.504	6.921	8.203	8.366	8.287	8.514	8.454	7.685	7.210	7.9519	7.54
72)		tert-butylbenzene				8.563	8.794	8.748	8.927	8.825	7.956	6.997	8.4015	8.31
73)		1,2,4-trimethylbenzene	6.859	8.579	6.771	8.041	8.310	8.344	8.504	8.492	7.554	6.678	7.8131	9.97
74)	C	Benzyl Chloride	4.093	4.439	3.587	4.536	4.964	5.288	6.109	6.585	6.336	6.111	5.2048	20.02
75)		1,3-dichlorobenzene	5.264	5.807	4.582	5.410	5.554	5.549	5.523	5.615	5.083	4.766	5.3154	7.40
76)	C	1,4-dichlorobenzene	5.319	5.811	4.443	5.354	5.485	5.458	5.441	5.446	5.048	4.859	5.2664	7.34

Initial Calibration Summary
Form 6

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Calibration dates : 12/22/17 14:54 12/22/17 20:41
Lab Number : L1747754
Project Number : 28014
Ical Ref : ICAL14300

Calibration Files
0.02=r154813_Ev2.D 0.04=r154814_Ev2.D 0.1 =r154815_Ev2.D 0.2 =r154816_Ev2.D 0.5 =r154817_Ev2.D
1.0 =r154818_Ev2.D 5.0 =r154819_Ev2.D 10.0=r154820_Ev2.D 20.0=r154821_Ev2.D 50.0=r154822_Ev2.D

	Compound	0.02	0.04	0.1	0.2	0.5	1.0	5.0	10.0	20.0	50.0	Avg	%RSD
77)	sec-butylbenzene	1.016	1.249	1.020	1.201	1.205	1.212	1.226	1.227	1.112	1.021	1.1489	8.40
78)	p-isopropyltoluene	0.905	1.044	0.851	1.037	1.057	1.066	1.075	1.076	0.970	0.849	0.9930	9.30
79)	1,2-dichlorobenzene	4.683	5.247	4.158	5.043	5.084	5.107	5.124	5.179	4.747	4.588	4.8959	7.02
80)	n-butylbenzene	0.711	0.877	0.734	0.949	0.994	1.002	0.992	0.989	0.885	0.820	0.8953	12.23
81) C	1,2,4-trichlorobenzene		2.787	2.200	3.142	3.567	3.831	3.766	4.037	3.640	3.669	3.4045	17.27
82)	naphthalene		0.621	0.593	0.953	1.076	1.137	1.108	1.184	1.040	1.008	0.9689	22.34
83)	1,2,3-trichlorobenzene		2.480	2.189	3.114	3.396	3.517	3.586	3.878	3.413	3.505	3.2308	17.04
84) C	hexachlorobutadiene	2.868	2.748	2.290	2.858	2.925	2.929	3.086	3.210	2.779	2.734	2.8426	8.61

```
                                        Response Factor Report

  Method Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Method File : TSIM171222.M
  Title     : TO-14A/TO-15 SIM/Full Scan Analysis
  Last Update  : Sat Dec 23 10:16:56 2017
  Response Via : Initial Calibration

  Calibration Files
  0.02=r154813_Ev2.D  0.04=r154814_Ev2.D  0.1 =r154815_Ev2.D  0.2 =r154816_Ev2.D  0.5 =r154817_Ev2.D
  1.0 =r154818_Ev2.D  5.0 =r154819_Ev2.D  10.0=r154820_Ev2.D  20.0=r154821_Ev2.D  50.0=r154822_Ev2.D

        Compound                0.02  0.04  0.1   0.2   0.5   1.0   5.0   10.0  20.0  50.0  Avg      %RSD
  --------------------------------------------------------------------------------------------------------

  1) I   bromochloromethane         ----------------ISTD---------------------
  2)     propylene                          0.932 0.898 0.827 0.821 0.760 0.719 0.670 0.604 0.7788   14.40
  3)     dichlorodifluorome... 1.231 1.490 1.129 1.258 1.209 1.207 1.163 1.120 1.004 0.910 1.1722   13.22
  4) C   chloromethane               0.859 0.637 0.705 0.676 0.679 0.646 0.621 0.557 0.513 0.6549   14.91
  5)     Freon-114             1.619 1.849 1.450 1.565 1.513 1.502 1.442 1.398 1.253 1.124 1.4718   13.42
  6) C   vinyl chloride        0.786 0.824 0.601 0.666 0.644 0.643 0.616 0.597 0.537 0.505 0.6419   15.45
  7) C   1,3-butadiene         0.531 0.687 0.548 0.596 0.578 0.572 0.559 0.549 0.496 0.467 0.5582   10.63
  8) C   bromomethane          0.564 0.795 0.635 0.617 0.603 0.614 0.578 0.557 0.500 0.467 0.5931   14.95
  9) C   chloroethane          0.398 0.393 0.337 0.375 0.348 0.336 0.320 0.309 0.277 0.256 0.3348   13.95
 10)     ethanol                                        0.573 0.520 0.502 0.478 0.428 0.389 0.4816   13.70
 11) C   vinyl bromide         0.813 0.864 0.646 0.670 0.637 0.635 0.616 0.608 0.547 0.495 0.6532   16.96
 12)     acetone                                  1.108 0.926 0.870 0.726 0.691 0.643 0.548 0.7874   24.34
 13)     trichlorofluoromet... 1.025 1.338 1.060 1.045 1.019 1.018 0.975 0.942 0.833 0.754 1.0010   15.40
 14)     isopropyl alcohol                        1.722 1.320 1.194 1.006 0.967 0.903 0.798 1.1300   27.83
 15) C   acrylonitrile         0.757 0.722 0.513 0.544 0.524 0.546 0.535 0.530 0.485 0.462 0.5618   17.34
 16) C   1,1-dichloroethene    0.743 1.109 0.761 0.873 0.819 0.828 0.801 0.783 0.701 0.642 0.8062   15.55
 17)     tertiary butyl alc... 1.377 1.771 1.169 1.091 1.047 1.050 1.009 0.996 0.902 0.846 1.1258   23.93
 18) C   methylene chloride                             0.850 0.837 0.798 0.780 0.697 0.635 0.7662   10.95
 19) C   3-chloropropene                          0.970 0.960 0.958 0.936 0.918 0.814 0.733 0.8983   10.05
 20) C   carbon disulfide                         2.017 1.904 1.916 2.090 1.933 1.746 1.546 1.8789    9.64
 21)     Freon 113             1.042 1.326 1.076 1.272 1.139 1.141 1.222 1.066 0.949 0.838 1.1072   13.29
 22)     Halothane             0.992 1.178 0.874 0.960 0.928 0.939 0.837 0.835 0.859 0.821 0.9223   11.63
 23)     trans-1,2-dichloro... 1.142 1.395 1.108 1.185 1.175 1.174 1.149 1.141 1.014 0.929 1.1411   10.56
 24) C   1,1-dichloroethane    1.427 1.634 1.297 1.481 1.421 1.415 1.375 1.357 1.209 1.109 1.3724   10.56
 25) C   MTBE                  1.825 2.100 1.695 1.920 1.875 1.898 1.869 1.864 1.691 1.594 1.8331    7.80
 26) C   vinyl acetate                     1.927 2.045 1.999 2.026 2.083 2.116 1.921 1.804 1.9901    5.10
 27) C   2-butanone                               2.130 2.056 2.046 1.995 1.981 1.773 1.645 1.9468    8.89
 28)     cis-1,2-dichloroet... 0.893 1.240 0.944 1.053 1.025 1.027 1.006 0.990 0.882 0.813 0.9871   11.88
 29)     Ethyl Acetate                            0.276 0.289 0.289 0.287 0.288 0.255 0.237 0.2745    7.55
 30) C   chloroform            1.523 1.522 1.180 1.273 1.235 1.232 1.183 1.161 1.037 0.965 1.2311   14.57
 31)     Tetrahydrofuran                   1.196 1.303 1.317 1.289 1.300 1.274 1.143 1.053 1.2346    7.69
```

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                              Response Factor Report

   Method Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
   Method File : TSIM171222.M
   Title       : TO-14A/TO-15 SIM/Full Scan Analysis
   Last Update  : Sat Dec 23 10:16:56 2017
   Response Via : Initial Calibration

   Calibration Files
   0.02=r154813_Ev2.D  0.04=r154814_Ev2.D  0.1 =r154815_Ev2.D  0.2 =r154816_Ev2.D  0.5 =r154817_Ev2.D
   1.0 =r154818_Ev2.D  5.0 =r154819_Ev2.D  10.0=r154820_Ev2.D  20.0=r154821_Ev2.D  50.0=r154822_Ev2.D

         Compound                0.02  0.04  0.1   0.2   0.5   1.0   5.0   10.0  20.0  50.0  Avg      %RSD
   ----------------------------------------------------------------------------------------------------
  32) C   1,2-dichloroethane    0.717 1.059 0.798 0.843 0.792 0.800 0.770 0.758 0.665 0.609 0.7809   15.38

  33) I   1,4-difluorobenzene       ----------------ISTD---------------------
  34) C   hexane                            0.551 0.601 0.590 0.583 0.570 0.565 0.508 0.467 0.5545    8.19
  35) s   1,2-dichloroethane-D4 0.209 0.211 0.214 0.211 0.213 0.210 0.210 0.211 0.204 0.195 0.2088    2.63
  36) C   1,1,1-trichloroethane 0.481 0.522 0.414 0.448 0.434 0.424 0.425 0.422 0.382 0.361 0.4314   10.60
  37) C   benzene                     1.420 1.076 1.120 1.071 1.046 1.033 1.026 0.938 0.897 1.0697   13.88
  38) C   carbon tetrachloride  0.324 0.464 0.348 0.364 0.359 0.355 0.366 0.367 0.337 0.328 0.3611   10.90
  39)     cyclohexane           0.572 0.746 0.578 0.617 0.611 0.612 0.608 0.601 0.549 0.522 0.6016    9.92
  40)     Dibromomethane        0.556 0.500 0.359 0.350 0.340 0.328 0.321 0.315 0.284 0.270 0.3623   25.51
  41) C   1,2-dichloropropane   0.375 0.525 0.395 0.428 0.408 0.404 0.400 0.393 0.353 0.330 0.4011   12.90
  42)     bromodichloromethane  0.560 0.632 0.473 0.521 0.518 0.521 0.536 0.543 0.495 0.478 0.5277    8.70
  43) C   1,4-dioxane                 0.277 0.199 0.260 0.258 0.253 0.253 0.252 0.233 0.224 0.2456    9.39
  44) C   trichloroethene       0.458 0.513 0.377 0.425 0.410 0.407 0.401 0.400 0.367 0.356 0.4114   11.21
  45) C   2,2,4-trimethylpen... 1.806 2.147 1.754 1.967 1.945 1.946 1.915 1.890 1.701 1.574 1.8646    8.63
  46)     heptane               0.843 1.081 0.805 0.917 0.902 0.894 0.886 0.878 0.789 0.727 0.8722   10.82
  47) C   cis-1,3-dichloropr... 0.515 0.552 0.438 0.485 0.490 0.481 0.509 0.517 0.478 0.467 0.4933    6.42
  48) C   4-methyl-2-pentanone  1.124 1.101 0.877 1.004 1.010 1.022 1.036 1.026 0.922 0.852 0.9974    8.92
  49)     trans-1,3-dichloro... 0.479 0.492 0.403 0.437 0.438 0.440 0.467 0.477 0.445 0.434 0.4513    5.98
  50) C   1,1,2-trichloroethane 0.428 0.501 0.361 0.404 0.402 0.397 0.396 0.391 0.354 0.340 0.3973   11.34

  51) I   chlorobenzene-D5          ----------------ISTD---------------------
  52) C   toluene               7.440 8.397 6.472 7.229 7.117 6.930 6.902 6.829 6.182 5.827 6.9325   10.24
  53) s   toluene-D8            5.105 5.159 5.206 5.091 5.161 5.085 5.302 5.316 5.186 5.153 5.1764    1.55
  54)     2-hexanone            4.235 5.212 4.573 5.100 5.352 5.469 5.326 5.444 4.896 4.521 5.0129    8.69
  55)     dibromochloromethane  3.017 3.312 2.441 2.675 2.599 2.685 2.897 2.966 2.760 2.653 2.8006    8.96
  56) C   1,2-dibromoethane     3.048 3.592 2.926 3.296 3.267 3.222 3.224 3.246 2.981 2.856 3.1659    6.84
  57) C   tetrachloroethene     2.561 3.166 2.362 2.657 2.524 2.505 2.443 2.475 2.274 2.193 2.5159   10.58
  58)     1,1,1,2-tetrachlor... 2.153 2.480 1.923 2.130 2.090 2.107 2.191 2.213 2.051 1.969 2.1306    7.18
  59) C   chlorobenzene         5.044 6.619 5.024 5.572 5.442 5.374 5.306 5.292 4.846 4.611 5.3129   10.24
  60) C   ethylbenzene          8.210 9.600 7.618 8.736 8.809 8.812 8.785 8.691 7.892 7.347 8.4499    8.00
  61) C   m+p-xylene            6.407 7.987 6.336 7.209 7.257 7.208 7.177 7.098 6.352 5.786 6.8818    9.34
```

```
                                       Response Factor Report

 Method Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
 Method File : TSIM171222.M
 Title      : TO-14A/TO-15 SIM/Full Scan Analysis
 Last Update  : Sat Dec 23 10:16:56 2017
 Response Via : Initial Calibration

 Calibration Files
 0.02=r154813_Ev2.D  0.04=r154814_Ev2.D  0.1 =r154815_Ev2.D  0.2 =r154816_Ev2.D  0.5 =r154817_Ev2.D
 1.0 =r154818_Ev2.D  5.0 =r154819_Ev2.D  10.0=r154820_Ev2.D  20.0=r154821_Ev2.D  50.0=r154822_Ev2.D

       Compound                0.02  0.04  0.1   0.2   0.5   1.0   5.0   10.0  20.0  50.0  Avg      %RSD
 --------------------------------------------------------------------------------------------------------
62) C   bromoform             1.807 2.247 1.725 1.968 2.013 2.061 2.353 2.462 2.324 2.276 2.1236   11.59
63) C   styrene               5.877 5.803 4.703 5.613 5.679 5.651 5.826 5.844 5.380 5.134 5.5511    6.80
64) C   1,1,2,2-tetrachlor... 4.855 5.811 4.423 5.127 5.062 5.046 5.032 5.025 4.566 4.165 4.9112    9.21
65) C   o-xylene              6.686 7.968 6.333 7.352 7.384 7.310 7.267 7.121 6.416 5.766 6.9603    9.31
66)     1,2,3-Trichloropro... 3.905 4.818 3.554 4.082 4.075 4.022 4.004 3.995 3.649 3.529 3.9631    9.29
67) s   bromofluorobenzene    2.535 2.724 2.877 2.694 2.799 2.852 2.659 2.764 3.073 2.906 2.7882    5.36
68) C   isopropylbenzene      0.860 1.045 0.824 0.940 0.939 0.932 0.933 0.933 0.852 0.793 0.9051    8.07
69)     Bromobenzene          5.170 5.815 4.709 5.241 5.242 5.194 5.104 5.111 4.687 4.500 5.0773    7.32
70)     4-ethyl toluene       0.900 1.068 0.862 1.038 1.055 1.071 1.063 1.062 0.963 0.891 0.9972    8.48
71)     1,3,5-trimethylben... 7.377 8.504 6.921 8.203 8.366 8.287 8.514 8.454 7.685 7.210 7.9519    7.54
72)     tert-butylbenzene                       8.563 8.794 8.748 8.927 8.825 7.956 6.997 8.4015    8.31
73)     1,2,4-trimethylben... 6.859 8.579 6.771 8.041 8.310 8.344 8.504 8.492 7.554 6.678 7.8131    9.97
74) C   Benzyl Chloride       4.093 4.439 3.587 4.536 4.964 5.288 6.109 6.585 6.336 6.111 5.2048   20.02
75)     1,3-dichlorobenzene   5.264 5.807 4.582 5.410 5.554 5.549 5.523 5.615 5.083 4.766 5.3154    7.40
76) C   1,4-dichlorobenzene   5.319 5.811 4.443 5.354 5.485 5.458 5.441 5.446 5.048 4.859 5.2664    7.34
77)     sec-butylbenzene      1.016 1.249 1.020 1.201 1.205 1.212 1.226 1.227 1.112 1.021 1.1489    8.40
78)     p-isopropyltoluene    0.905 1.044 0.851 1.037 1.057 1.066 1.075 1.076 0.970 0.849 0.9930    9.30
79)     1,2-dichlorobenzene   4.683 5.247 4.158 5.043 5.084 5.107 5.124 5.179 4.747 4.588 4.8959    7.02
80)     n-butylbenzene        0.711 0.877 0.734 0.949 0.994 1.002 0.992 0.989 0.885 0.820 0.8953   12.23
81) C   1,2,4-trichloroben...       2.787 2.200 3.142 3.567 3.831 3.766 4.037 3.640 3.669 3.4045   17.27
82)     naphthalene                 0.621 0.593 0.953 1.076 1.137 1.108 1.184 1.040 1.008 0.9689   22.34
83)     1,2,3-trichloroben...       2.480 2.189 3.114 3.396 3.517 3.586 3.878 3.413 3.505 3.2308   17.04
84) C   hexachlorobutadiene   2.868 2.748 2.290 2.858 2.925 2.929 3.086 3.210 2.779 2.734 2.8426    8.61
 --------------------------------------------------------------------------------------------------------
(#) = Out of Range
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BFB

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154812.D
Acq On    : 22 Dec 2017   2:17 PM
Operator  : AIRLAB15:RY
Sample    : WG1075925-1
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Integration File: rteint.p

Method    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Title     : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update  : Sat Dec 23 10:16:56 2017
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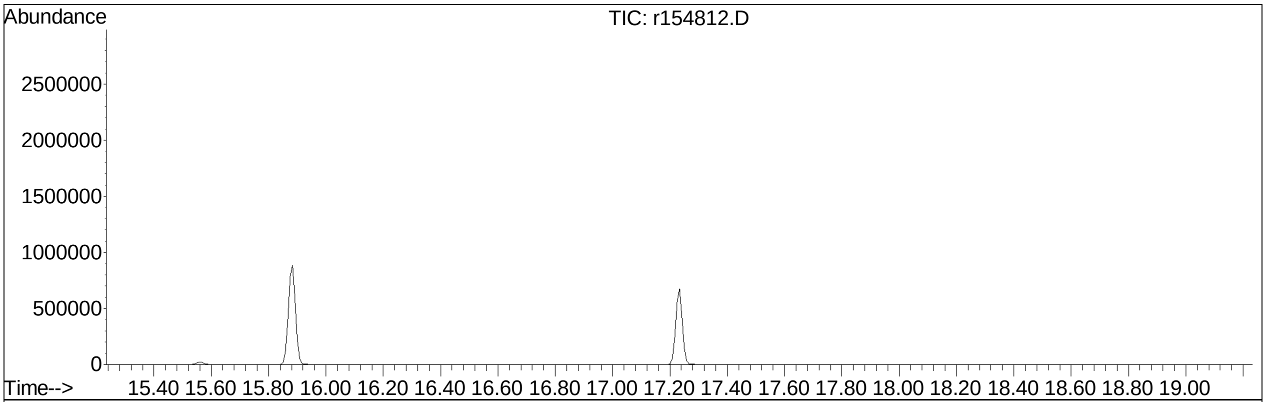
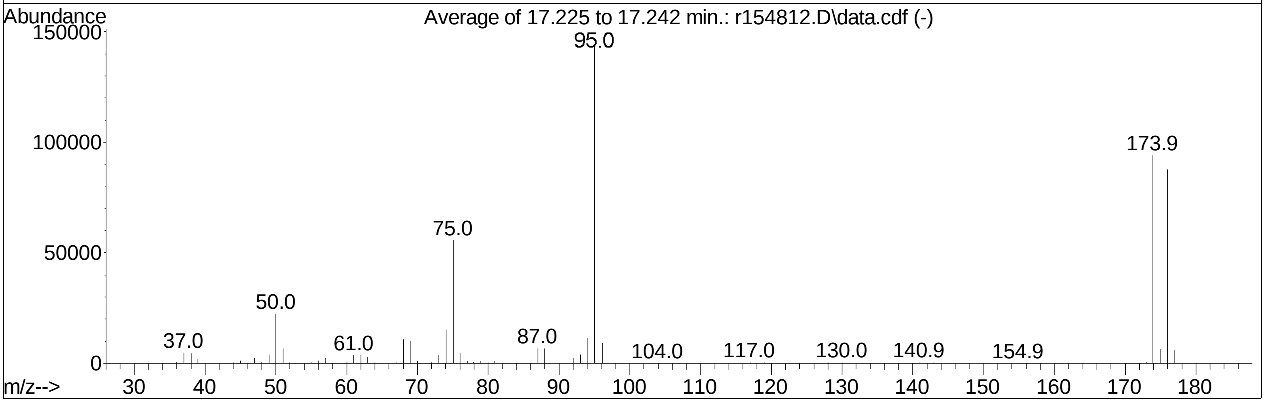




AutoFind: Scans 2073, 2074, 2075; Background Corrected with Scan 2068

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.5	22403	PASS
75	95	30	66	38.6	55725	PASS
95	95	100	100	100.0	144259	PASS
96	95	5	9	6.4	9169	PASS
173	174	0.00	2	0.5	443	PASS
174	95	50	120	65.3	94251	PASS
175	174	4	9	6.9	6469	PASS
176	174	93	101	93.1	87730	PASS
177	176	5	9	6.5	5665	PASS

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154813_Ev2.D
  Acq On    : 22 Dec 2017   2:54 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.02
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:05:54 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane             8.90   49   150676    10.000 ppbV     0.00
     Standard Area  =       152264                  Recovery   =   98.96%
    33) 1,4-difluorobenzene           11.14  114   359939    10.000 ppbV     0.00
     Standard Area  =       365341                  Recovery   =   98.52%
    51) chlorobenzene-D5              15.88   54    63641    10.000 ppbV     0.00
     Standard Area  =        65487                  Recovery   =   97.18%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4          9.78   65    75301     9.939 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.39%
    53) toluene-D8                    14.00   98   324885     9.628 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   96.28%
    67) bromofluorobenzene            17.23   95   161355     9.535 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   95.35%

   Target Compounds                                                   Qvalue
     2) propylene                      3.78   41       472M6    0.041 ppbV
     3) dichlorodifluoromethane        3.85   85       371      0.021 ppbV      89
     4) chloromethane                  4.00   50       253      0.026 ppbV #    76
     5) Freon-114                      4.11   85       488      0.022 ppbV      96
     6) vinyl chloride                 4.23   62       237      0.026 ppbV #    58
     7) 1,3-butadiene                  4.37   54       160      0.019 ppbV #    48
     8) bromomethane                   4.65   94       170M4    0.020 ppbV
     9) chloroethane                   4.83   64       120M4    0.025 ppbV
    10) ethanol                        4.98   31      2833      0.375 ppbV     100
    11) vinyl bromide                  5.21  106       245M4    0.026 ppbV
    12) acetone                        5.50   43      5350      0.489 ppbV #    98
    13) trichlorofluoromethane         5.65  101       309M4    0.021 ppbV
    14) isopropyl alcohol              5.77   45      5489      0.362 ppbV #    97
    15) acrylonitrile                  5.99   53       228M4    0.028 ppbV
    16) 1,1-dichloroethene             6.35   61       224      0.019 ppbV #    73
    17) tertiary butyl alcohol         6.44   59       415      0.027 ppbV #    88
    18) methylene chloride             6.49   49       420      0.035 ppbV      88
    19) 3-chloropropene                6.62   41       258      0.018 ppbV #    77
    20) carbon disulfide               6.79   76       715      0.023 ppbV #     1
    21) Freon 113                      6.79  101       314      0.017 ppbV #    78
    22) Halothane                      7.32  117       299      0.024 ppbV #    78
    23) trans-1,2-dichloroethene       7.54   61       344      0.020 ppbV      96
    24) 1,1-dichloroethane             7.77   63       430      0.021 ppbV      91
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154813_Ev2.D
  Acq On    : 22 Dec 2017   2:54 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.02
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:05:54 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   ----------------------------------------------------------------------------
    25) MTBE                          7.88   73       550      0.020 ppbV #    76
    26) vinyl acetate                 7.97   43       814      0.026 ppbV #    85
    27) 2-butanone                    8.26   43       871      0.029 ppbV #    91
    28) cis-1,2-dichloroethene        8.72   61       269      0.018 ppbV      95
    29) Ethyl Acetate                 9.03   61        85      0.020 ppbV #    14
    30) chloroform                    9.06   83       459      0.026 ppbV #    90
    31) Tetrahydrofuran               9.57   42       387      0.020 ppbV      97
    32) 1,2-dichloroethane            9.89   62       216      0.019 ppbV #    71
    34) hexane                        8.97   57       447      0.022 ppbV #    51
    36) 1,1,1-trichloroethane        10.18   97       346      0.023 ppbV #    84
    37) benzene                      10.71   78       986      0.027 ppbV #    87
    38) carbon tetrachloride         10.89  117       233      0.018 ppbV #    83
    39) cyclohexane                  11.03   56       412      0.019 ppbV      89
    40) Dibromomethane               11.63   93       400      0.035 ppbV #    88
    41) 1,2-dichloropropane          11.66   63       270      0.019 ppbV #    80
    42) bromodichloromethane         11.89   83       403      0.021 ppbV #    88
    43) 1,4-dioxane                  12.00   88       202      0.022 ppbV #    72
    44) trichloroethene              11.94  130       330      0.023 ppbV      91
    45) 2,2,4-trimethylpentane       11.99   57      1300      0.019 ppbV #    88
    46) heptane                      12.31   43       607      0.019 ppbV #    87
    47) cis-1,3-dichloropropene      12.96   75       371      0.020 ppbV #    77
    48) 4-methyl-2-pentanone         13.04   43       809      0.022 ppbV #    89
    49) trans-1,3-dichloropropene    13.59   75       345      0.021 ppbV #    76
    50) 1,1,2-trichloroethane        13.79   97       308      0.022 ppbV #    93
    52) toluene                      14.11   91       947      0.022 ppbV      96
    54) 2-hexanone                   14.44   43       539      0.016 ppbV #    93
    55) dibromochloromethane         14.57  129       384      0.021 ppbV #    85
    56) 1,2-dibromoethane            14.82  107       388      0.019 ppbV      95
    57) tetrachloroethene            15.28  166       326      0.021 ppbV #    83
    58) 1,1,1,2-tetrachloroethane    15.90  131       274      0.020 ppbV #    91
    59) chlorobenzene                15.92  112       642      0.019 ppbV #    91
    60) ethylbenzene                 16.26   91      1045      0.019 ppbV      93
    61) m+p-xylene                   16.42   91      1631      0.036 ppbV      98
    62) bromoform                    16.48  173       230      0.015 ppbV #    82
    63) styrene                      16.74  104       748      0.020 ppbV      96
    64) 1,1,2,2-tetrachloroethane    16.83   83       618      0.019 ppbV      91
    65) o-xylene                     16.83   91       851      0.018 ppbV      98
    66) 1,2,3-Trichloropropane       16.94   75       497      0.020 ppbV      93
    68) isopropylbenzene             17.34  105      1095      0.018 ppbV     100
    69) Bromobenzene                 17.42   77       658      0.020 ppbV      96
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154813_Ev2.D
  Acq On    : 22 Dec 2017   2:54 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.02
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:05:54 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   -------------------------------------------------------------------------
    70) 4-ethyl toluene              17.90  105      1145      0.017 ppbV #    89
    71) 1,3,5-trimethylbenzene       17.97  105       939      0.017 ppbV #    88
    72) tert-butylbenzene            18.31  119       984      0.017 ppbV      97
    73) 1,2,4-trimethylbenzene       18.31  105       873      0.016 ppbV #    90
    74) Benzyl Chloride              18.43   91       521      0.013 ppbV      99
    75) 1,3-dichlorobenzene          18.44  146       670      0.019 ppbV #    86
    76) 1,4-dichlorobenzene          18.50  146       677      0.020 ppbV #    88
    77) sec-butylbenzene             18.53  105      1293      0.017 ppbV      93
    78) p-isopropyltoluene           18.67  119      1152      0.017 ppbV      94
    79) 1,2-dichlorobenzene          18.79  146       596      0.018 ppbV #    83
    80) n-butylbenzene               19.02   91       905      0.014 ppbV      97
    81) 1,2,4-trichlorobenzene       20.37  180       283      0.012 ppbV #    79
    82) naphthalene                  20.49  128       721      0.010 ppbV #    90
    83) 1,2,3-trichlorobenzene       20.75  180       326      0.014 ppbV #    75
    84) hexachlorobutadiene          20.82  225       365      0.019 ppbV #    92
   -------------------------------------------------------------------------

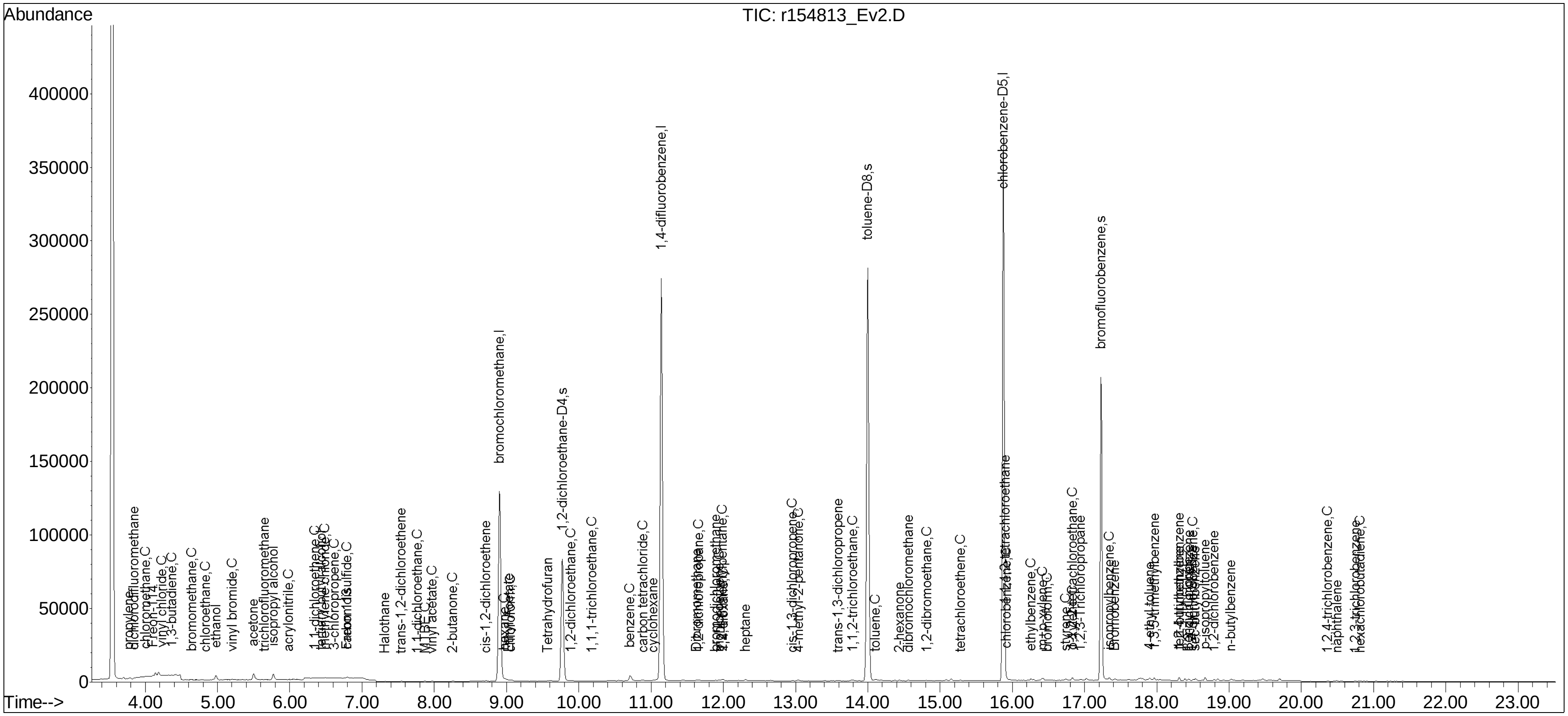
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154813_Ev2.D
Acq On    : 22 Dec 2017   2:54 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.02
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:05:54 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

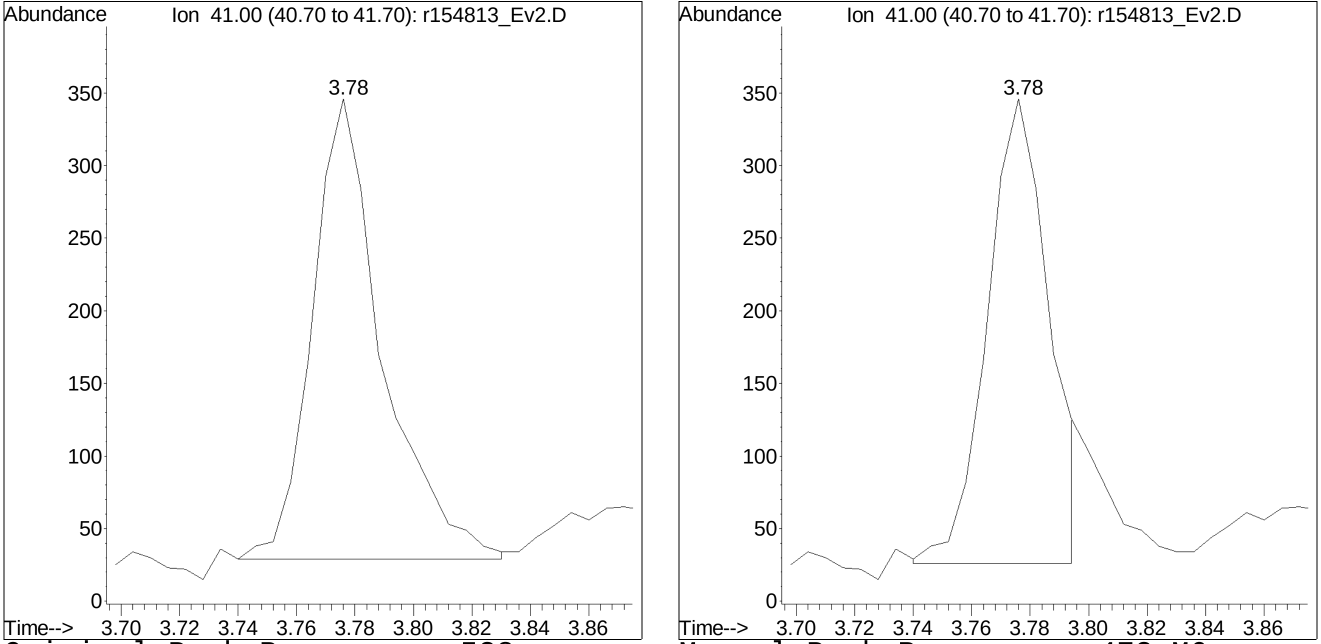
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154813_Ev2.D             Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  2:54 PM       Instrument   :
Sample      : ITO15-SIMSTD0.02          Quant Date   : 12/23/2017 10:03 am
```

Compound #2: propylene



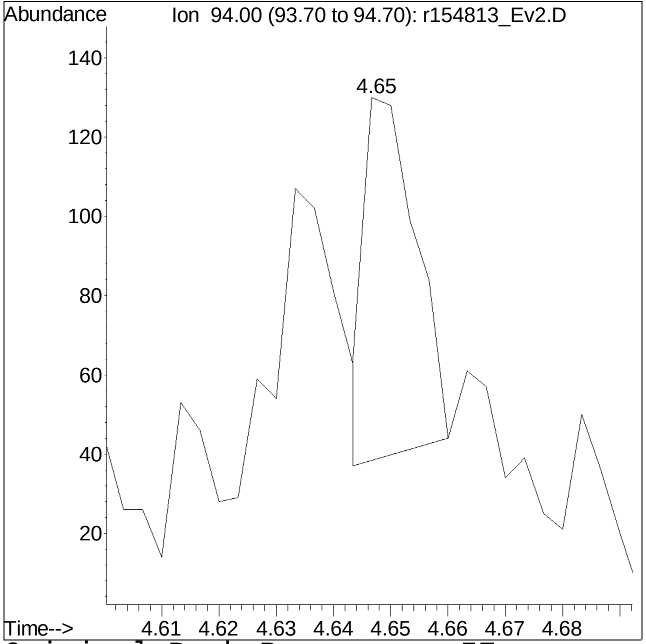
Original Peak Response = 528 Manual Peak Response = 472 M6

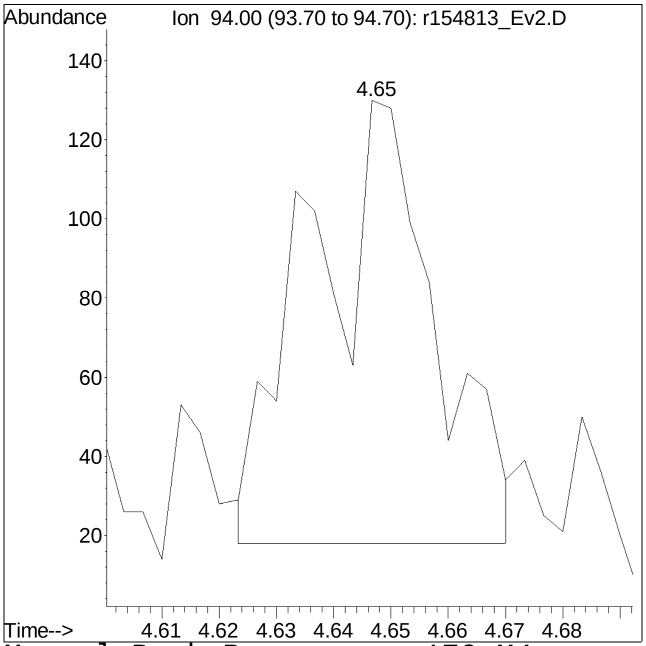
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TSIM171222.M
Data File : r154813_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 2:54 PM Instrument :
Sample : ITO15-SIMSTD0.02 Quant Date : 12/23/2017 10:03 am

Compound #8: bromomethane





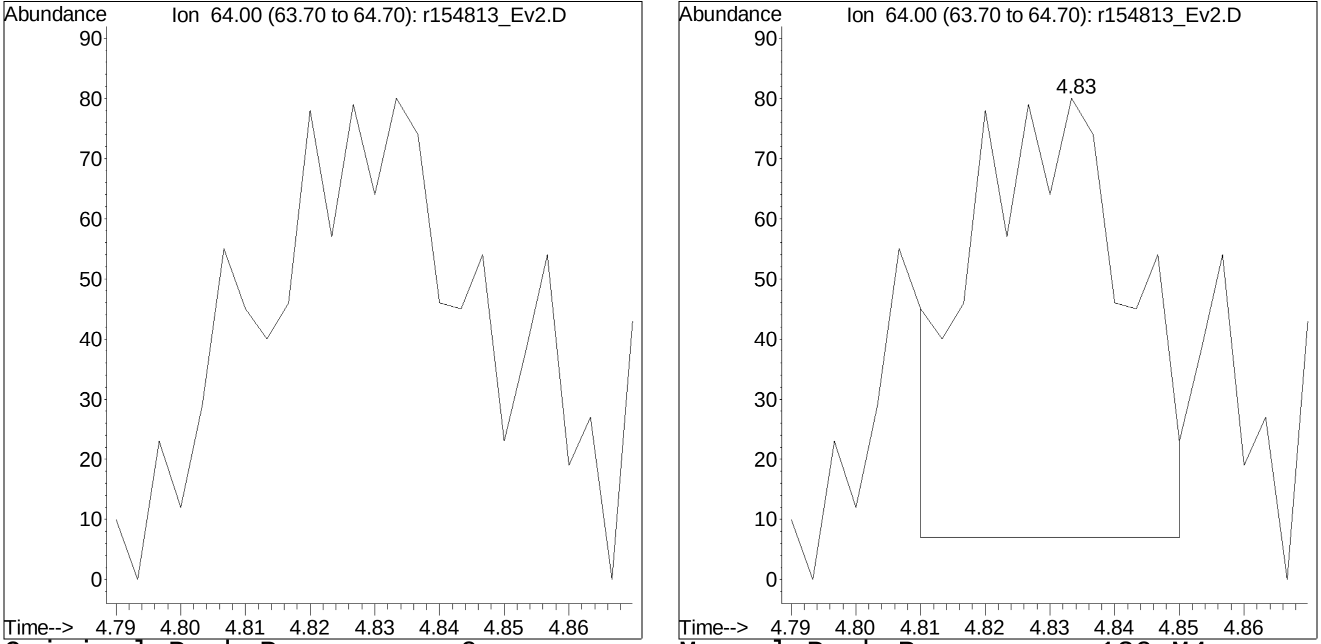
Original Peak Response = 57 Manual Peak Response = 170 M4
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154813_Ev2.D
Date Inj'd : 12/22/2017 2:54 PM
Sample : ITO15-SIMSTD0.02

QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:03 am

Compound #9: chloroethane



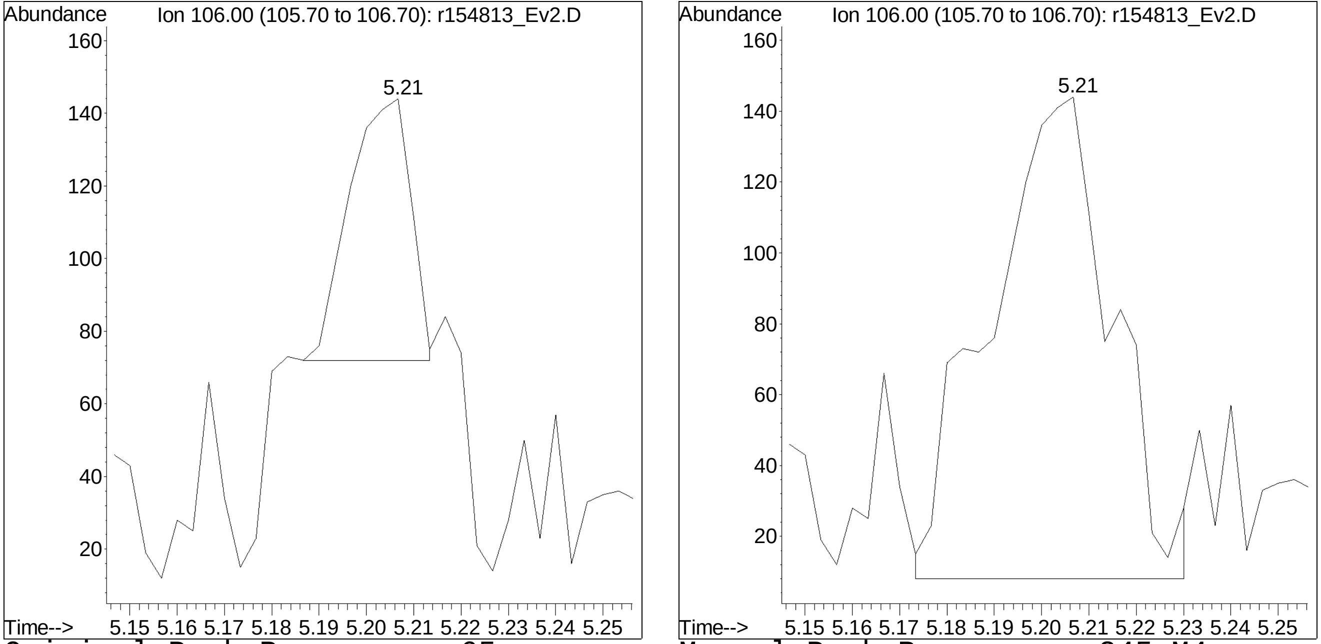
Original Peak Response = 0
Manual Peak Response = 120 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154813_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  2:54 PM          Instrument  :
Sample      : ITO15-SIMSTD0.02             Quant Date  : 12/23/2017 10:03 am
```

Compound #11: vinyl bromide



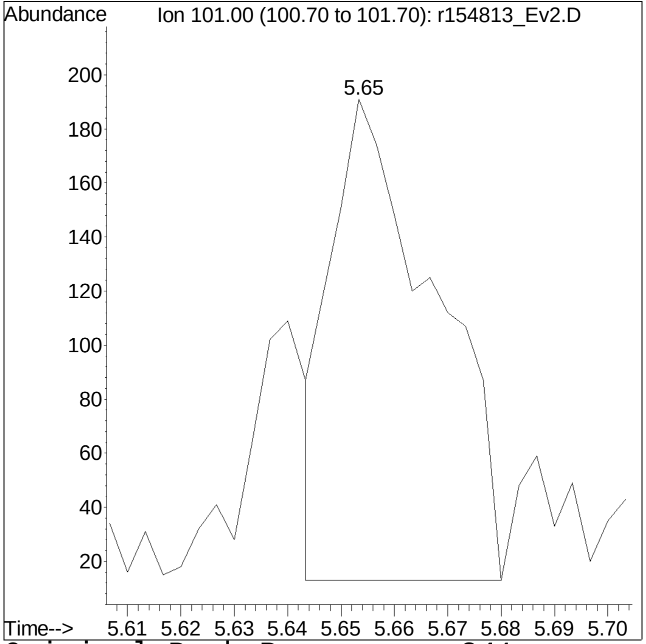
Original Peak Response = 65   Manual Peak Response = 245 M4

M4 = Poor automated baseline construction.

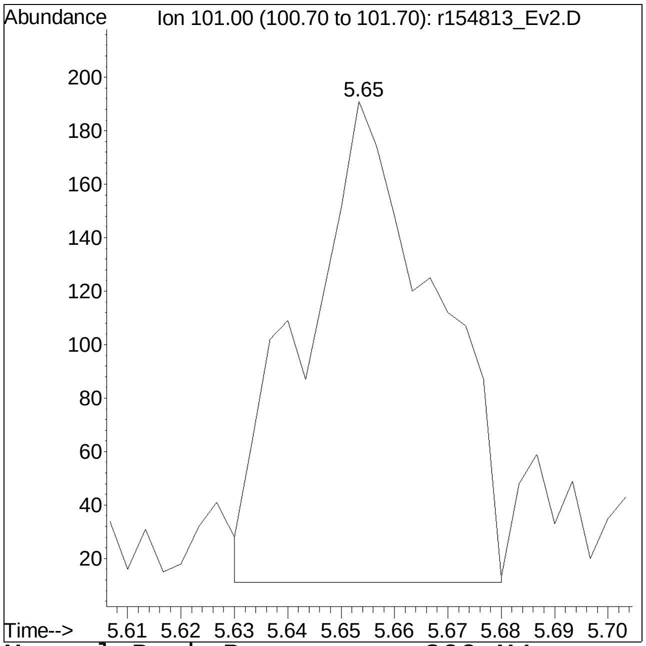
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154813_Ev2.D              Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  2:54 PM        Instrument  :
Sample      : ITO15-SIMSTD0.02           Quant Date  : 12/23/2017 10:03 am
```

Compound #13: trichlorofluoromethane



Original Peak Response = 241



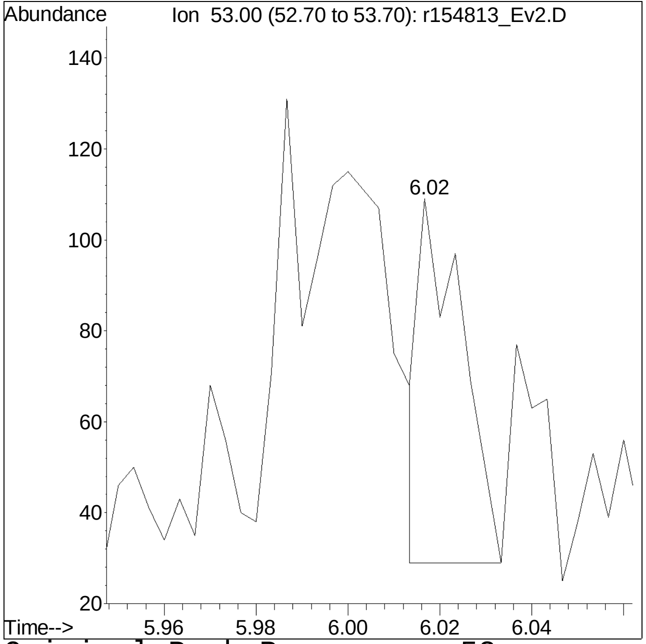
Manual Peak Response = 309 M4

M4 = Poor automated baseline construction.

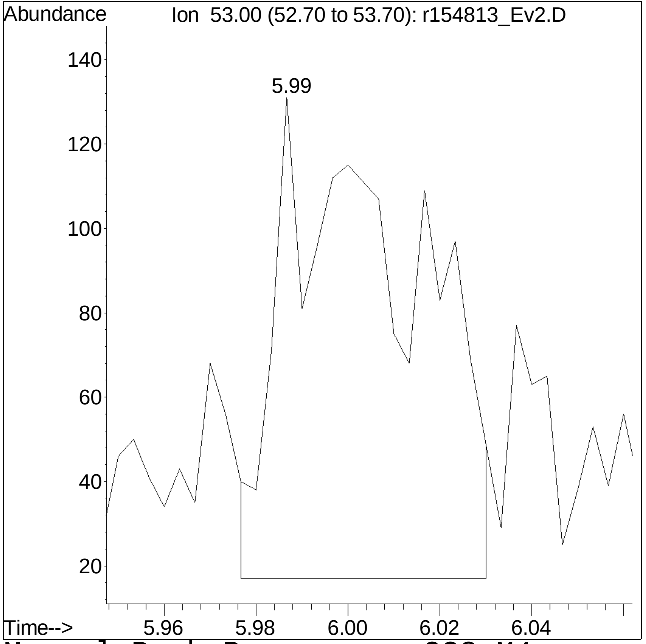
Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TSIM171222.M
Data File : r154813_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 2:54 PM Instrument :
Sample : ITO15-SIMSTD0.02 Quant Date : 12/23/2017 10:03 am

Compound #15: acrylonitrile



Original Peak Response = 52



Manual Peak Response = 228 M4

M4 = Poor automated baseline construction.

```
                   Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154814_Ev2.D
Acq On    : 22 Dec 2017   3:32 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.04
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:08:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane           8.90   49   149647    10.000 ppbV     0.00
   Standard Area  =       152264                 Recovery   =   98.28%
  33) 1,4-difluorobenzene         11.14  114   358395    10.000 ppbV     0.00
   Standard Area  =       365341                 Recovery   =   98.10%
  51) chlorobenzene-D5            15.88   54    63413    10.000 ppbV     0.00
   Standard Area  =        65487                 Recovery   =   96.83%

 System Monitoring Compounds
  35) 1,2-dichloroethane-D4        9.78   65    75697    10.034 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.34%
  53) toluene-D8                  14.00   98   327139     9.729 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.29%
  67) bromofluorobenzene          17.23   95   172724    10.244 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  102.44%

 Target Compounds                                                  Qvalue
   2) propylene                    3.78   41       783M6    0.069 ppbV
   3) dichlorodifluoromethane      3.85   85       892      0.051 ppbV      91
   4) chloromethane                4.01   50       514M3    0.053 ppbV
   5) Freon-114                    4.11   85      1107      0.051 ppbV      97
   6) vinyl chloride               4.23   62       493      0.053 ppbV      92
   7) 1,3-butadiene                4.37   54       411      0.049 ppbV      92
   8) bromomethane                 4.65   94       476      0.055 ppbV      82
   9) chloroethane                 4.83   64       235M4    0.049 ppbV
  10) ethanol                      4.98   31      3791      0.505 ppbV      94
  11) vinyl bromide                5.20  106       517M4    0.056 ppbV
  12) acetone                      5.50   43      7264M3    0.669 ppbV
  13) trichlorofluoromethane       5.65  101       801M4    0.055 ppbV
  14) isopropyl alcohol            5.77   45      6641M4    0.441 ppbV
  15) acrylonitrile                6.00   53       432M4    0.054 ppbV
  16) 1,1-dichloroethene           6.35   61       664      0.055 ppbV      98
  17) tertiary butyl alcohol       6.44   59      1060      0.070 ppbV #    94
  18) methylene chloride           6.49   49       823      0.069 ppbV      89
  19) 3-chloropropene              6.62   41       683      0.049 ppbV #    88
  20) carbon disulfide             6.79   76      1516      0.048 ppbV #     1
  21) Freon 113                    6.79  101       794      0.043 ppbV      90
  22) Halothane                    7.32  117       705M4    0.056 ppbV
  23) trans-1,2-dichloroethene     7.54   61       835      0.049 ppbV      96
  24) 1,1-dichloroethane           7.77   63       978      0.048 ppbV      94
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154814_Ev2.D
  Acq On    : 22 Dec 2017   3:32 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.04
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:08:23 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) MTBE                           7.87   73      1257      0.045 ppbV #    84
    26) vinyl acetate                  7.97   43      1580      0.051 ppbV #    96
    27) 2-butanone                     8.26   43      1727      0.058 ppbV #    93
    28) cis-1,2-dichloroethene         8.72   61       742      0.049 ppbV      93
    29) Ethyl Acetate                  9.03   61       195      0.045 ppbV #    44
    30) chloroform                     9.06   83       911      0.051 ppbV #    94
    31) Tetrahydrofuran                9.57   42       871      0.045 ppbV      99
    32) 1,2-dichloroethane             9.90   62       634      0.055 ppbV #    88
    34) hexane                         8.97   57      1061      0.052 ppbV #    53
    36) 1,1,1-trichloroethane         10.18   97       749      0.049 ppbV #    88
    37) benzene                       10.71   78      2036      0.055 ppbV #    92
    38) carbon tetrachloride          10.89  117       665      0.051 ppbV #    92
    39) cyclohexane                   11.03   56      1070      0.049 ppbV      88
    40) Dibromomethane                11.63   93       717      0.062 ppbV #    94
    41) 1,2-dichloropropane           11.66   63       752      0.052 ppbV #    88
    42) bromodichloromethane          11.89   83       906      0.047 ppbV #    95
    43) 1,4-dioxane                   12.00   88       397      0.044 ppbV #    66
    44) trichloroethene               11.94  130       735      0.051 ppbV      99
    45) 2,2,4-trimethylpentane        11.99   57      3078      0.045 ppbV #    94
    46) heptane                       12.31   43      1549      0.049 ppbV #    95
    47) cis-1,3-dichloropropene       12.96   75       792      0.043 ppbV      91
    48) 4-methyl-2-pentanone          13.03   43      1579      0.043 ppbV #    92
    49) trans-1,3-dichloropropene     13.59   75       706      0.042 ppbV #    84
    50) 1,1,2-trichloroethane         13.79   97       718      0.051 ppbV      96
    52) toluene                       14.11   91      2130      0.049 ppbV      98
    54) 2-hexanone                    14.43   43      1322      0.039 ppbV #    94
    55) dibromochloromethane          14.57  129       840      0.046 ppbV #    91
    56) 1,2-dibromoethane             14.82  107       911      0.045 ppbV      99
    57) tetrachloroethene             15.28  166       803      0.052 ppbV      95
    58) 1,1,1,2-tetrachloroethane     15.90  131       629      0.045 ppbV      92
    59) chlorobenzene                 15.92  112      1679      0.050 ppbV      97
    60) ethylbenzene                  16.26   91      2435      0.044 ppbV      99
    61) m+p-xylene                    16.43   91      4052      0.089 ppbV      99
    62) bromoform                     16.48  173       570      0.038 ppbV      88
    63) styrene                       16.74  104      1472      0.040 ppbV      99
    64) 1,1,2,2-tetrachloroethane     16.82   83      1474      0.046 ppbV      97
    65) o-xylene                      16.82   91      2021      0.044 ppbV      95
    66) 1,2,3-Trichloropropane        16.94   75      1222      0.048 ppbV #    92
    68) isopropylbenzene              17.34  105      2650      0.045 ppbV     100
    69) Bromobenzene                  17.42   77      1475      0.046 ppbV      96
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154814_Ev2.D
  Acq On    : 22 Dec 2017   3:32 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.04
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:08:23 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    70) 4-ethyl toluene              17.90  105      2709      0.040 ppbV #    98
    71) 1,3,5-trimethylbenzene       17.96  105      2157      0.040 ppbV #    99
    72) tert-butylbenzene            18.31  119      2247      0.040 ppbV     100
    73) 1,2,4-trimethylbenzene       18.31  105      2176      0.040 ppbV      98
    74) Benzyl Chloride              18.43   91      1126      0.029 ppbV      92
    75) 1,3-dichlorobenzene          18.44  146      1473      0.042 ppbV      97
    76) 1,4-dichlorobenzene          18.50  146      1474      0.043 ppbV      96
    77) sec-butylbenzene             18.53  105      3168      0.041 ppbV      99
    78) p-isopropyltoluene           18.67  119      2649      0.039 ppbV     100
    79) 1,2-dichlorobenzene          18.79  146      1331      0.041 ppbV      95
    80) n-butylbenzene               19.02   91      2225      0.035 ppbV      95
    81) 1,2,4-trichlorobenzene       20.37  180       707      0.030 ppbV      99
    82) naphthalene                  20.48  128      1575      0.022 ppbV #    86
    83) 1,2,3-trichlorobenzene       20.74  180       629      0.028 ppbV #    89
    84) hexachlorobutadiene          20.81  225       697      0.036 ppbV      95
   --------------------------------------------------------------------------

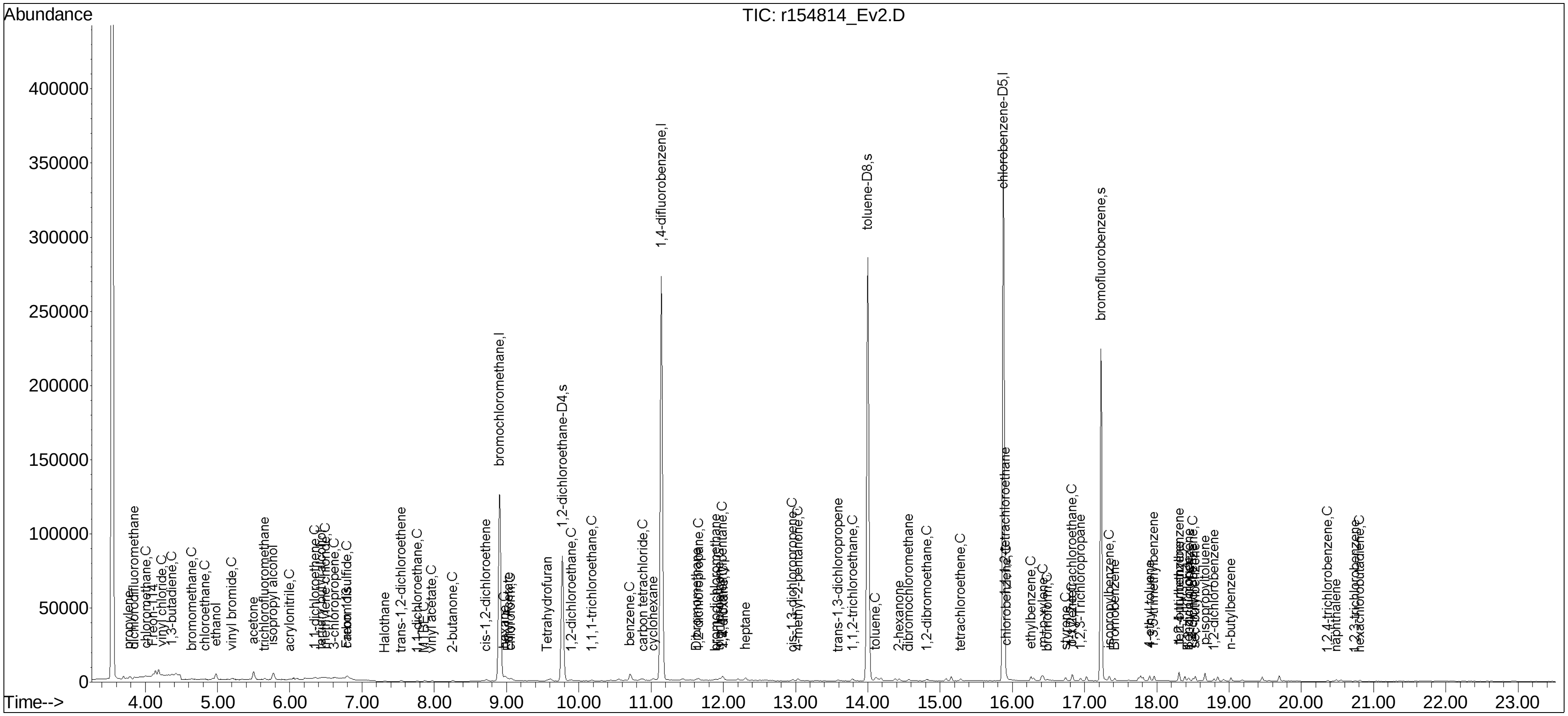
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154814_Ev2.D
Acq On    : 22 Dec 2017   3:32 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.04
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:08:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

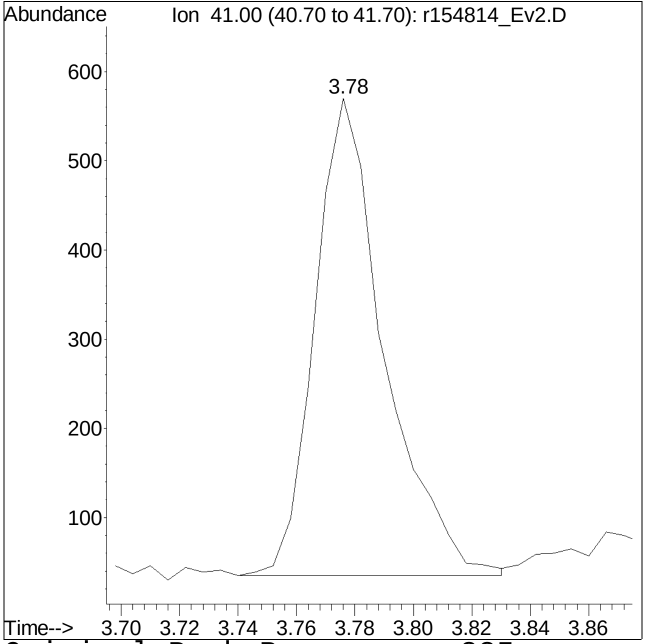
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```



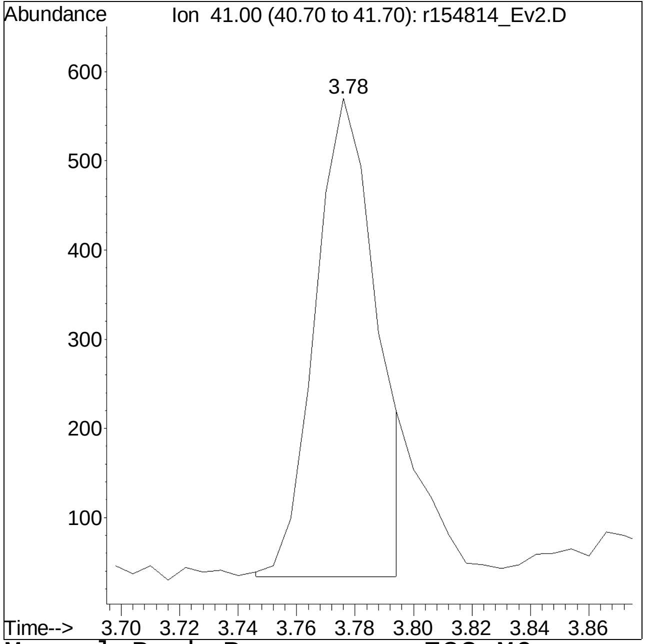
Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154814_Ev2.D
Date Inj'd : 12/22/2017 3:32 PM
Sample : ITO15-SIMSTD0.04
QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:03 am

Compound #2: propylene



Original Peak Response = 885



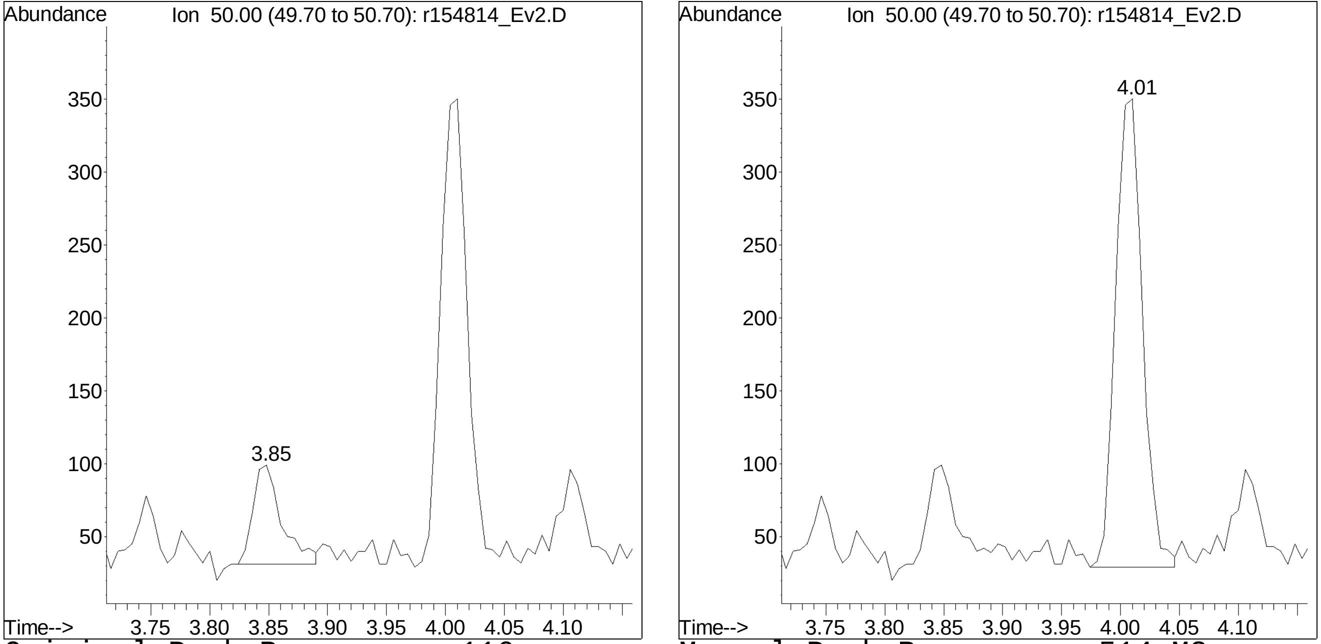
Manual Peak Response = 783 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154814_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  3:32 PM          Instrument  :
Sample      : ITO15-SIMSTD0.04             Quant Date  : 12/23/2017 10:03 am
```

Compound #4: chloromethane



Original Peak Response = 116   Manual Peak Response = 514 M3

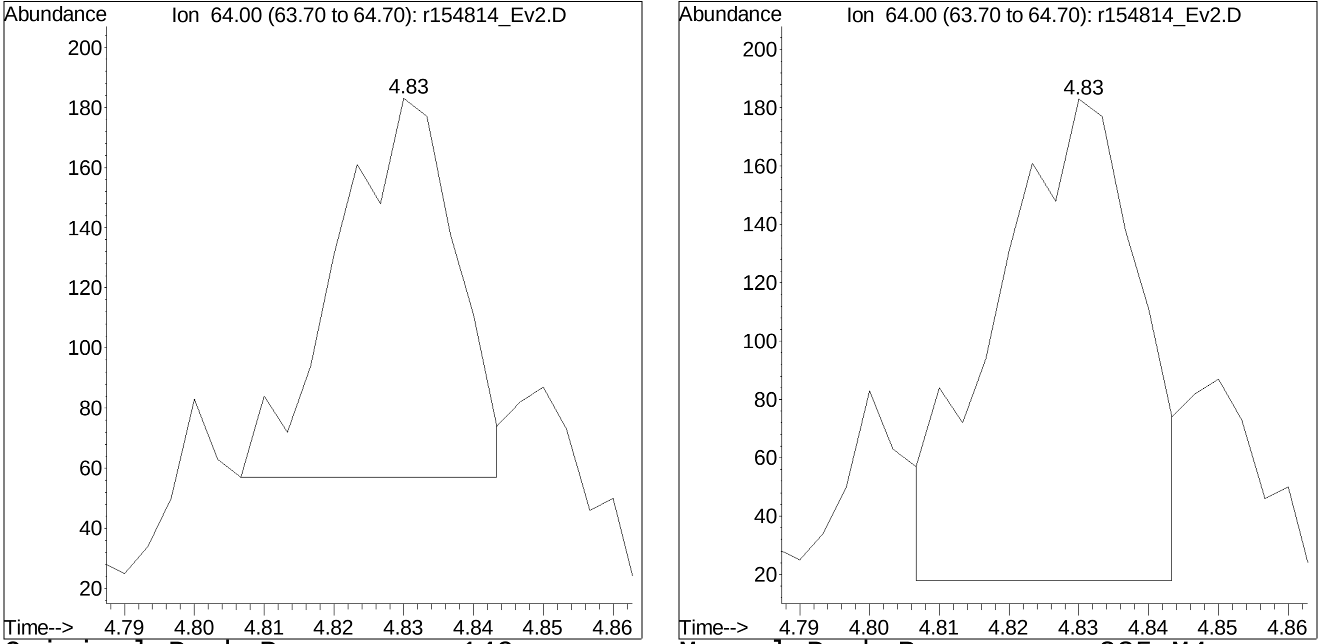
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154814_Ev2.D
Date Inj'd : 12/22/2017 3:32 PM
Sample : ITO15-SIMSTD0.04

QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:03 am

Compound #9: chloroethane

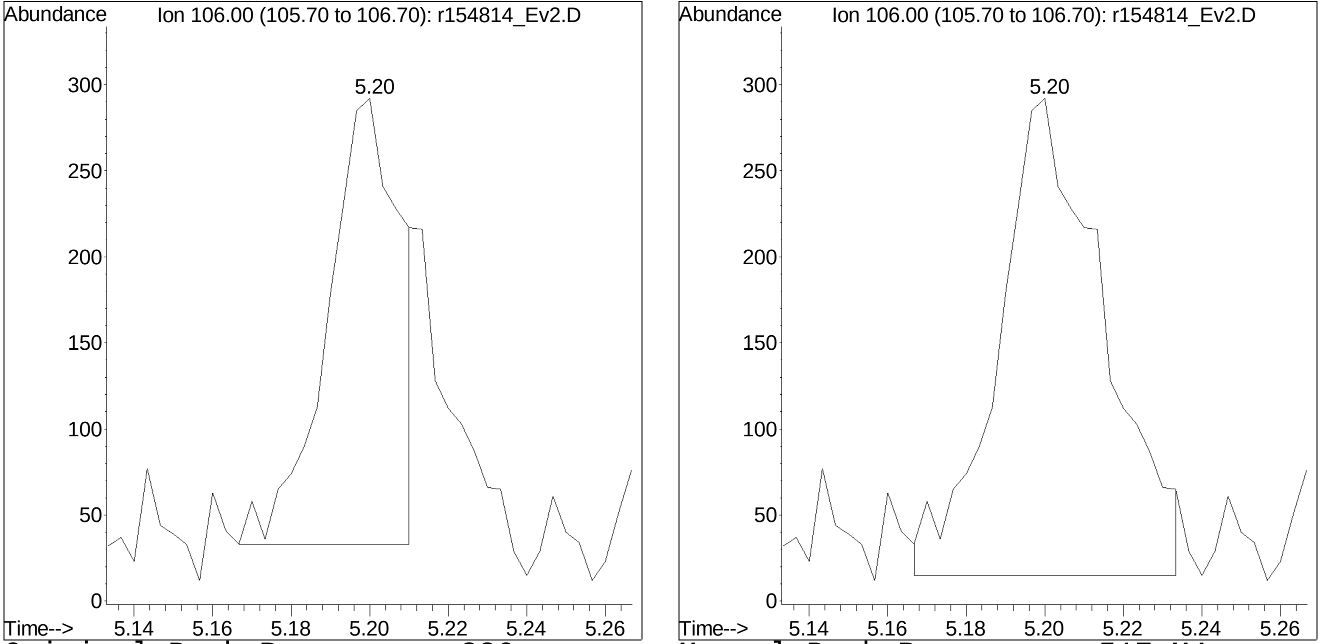


Original Peak Response = 149 Manual Peak Response = 235 M4
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154814_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  3:32 PM          Instrument  :
Sample      : ITO15-SIMSTD0.04             Quant Date  : 12/23/2017 10:03 am
```

Compound #11: vinyl bromide



Original Peak Response = 336   Manual Peak Response = 517 M4

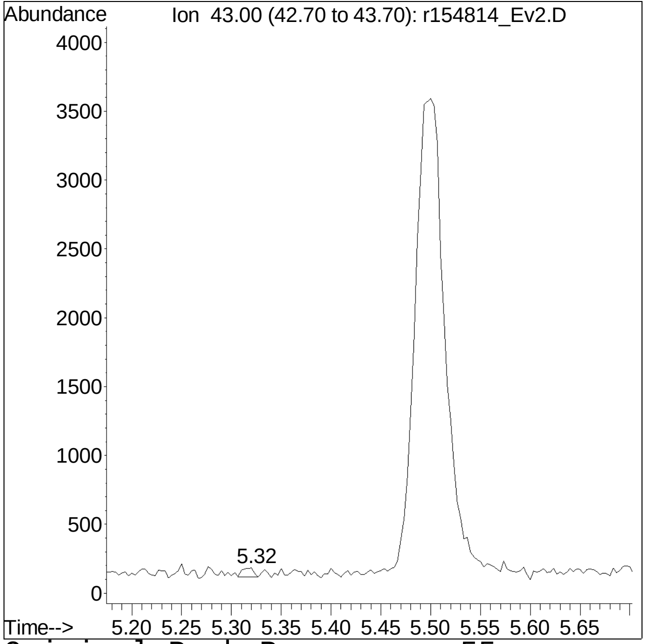
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

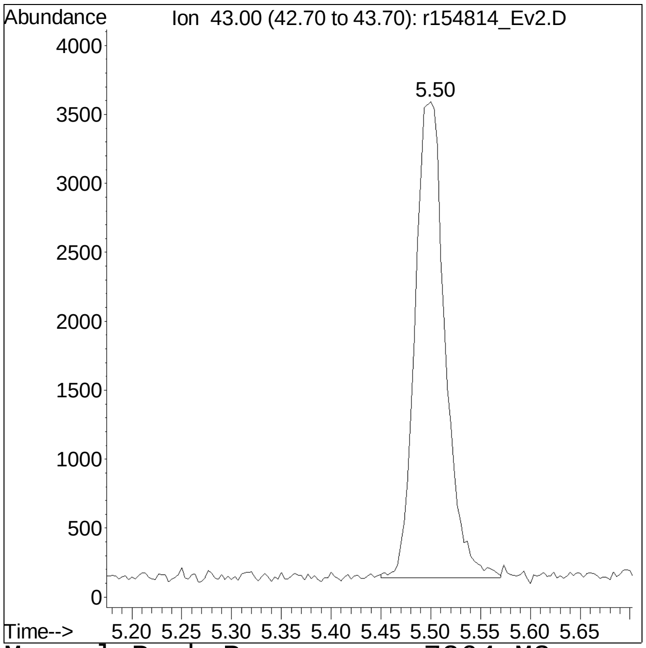
Data Path : O:\Forensics\Data\Airlab15\
Data File : r154814_Ev2.D
Date Inj'd : 12/22/2017 3:32 PM
Sample : ITO15-SIMSTD0.04

QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:03 am

Compound #12: acetone



Original Peak Response = 55



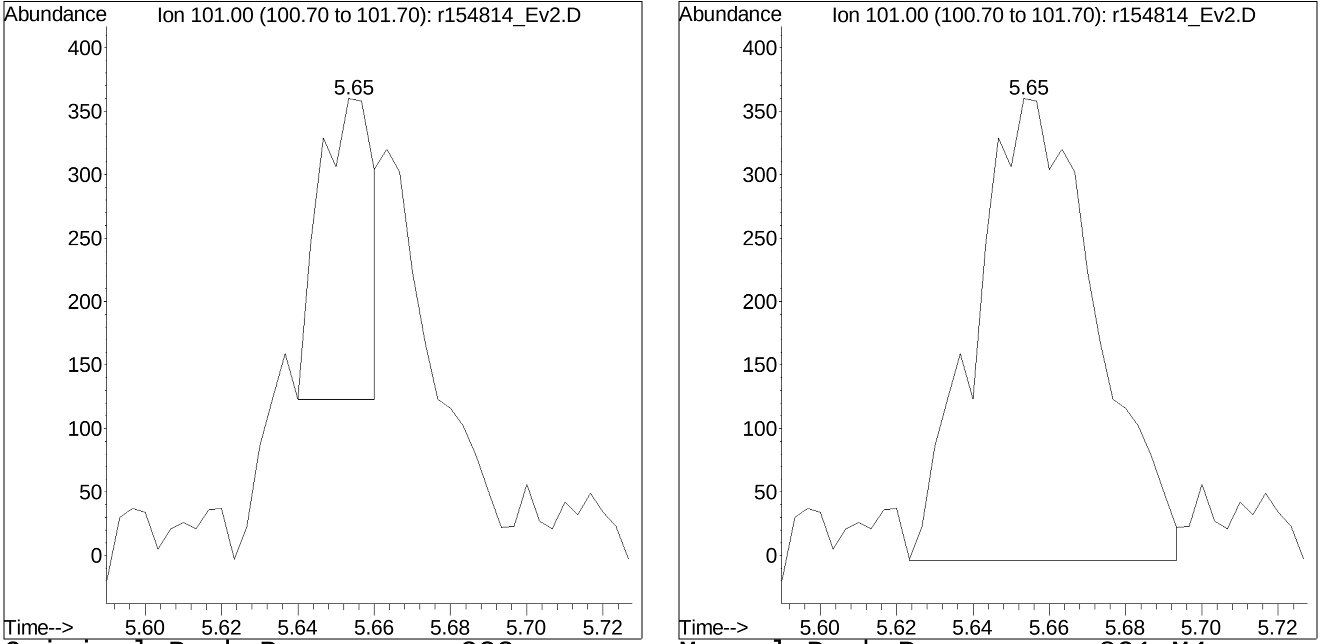
Manual Peak Response = 7264 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TSIM171222.M
Data File : r154814_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 3:32 PM Instrument :
Sample : ITO15-SIMSTD0.04 Quant Date : 12/23/2017 10:03 am

Compound #13: trichlorofluoromethane

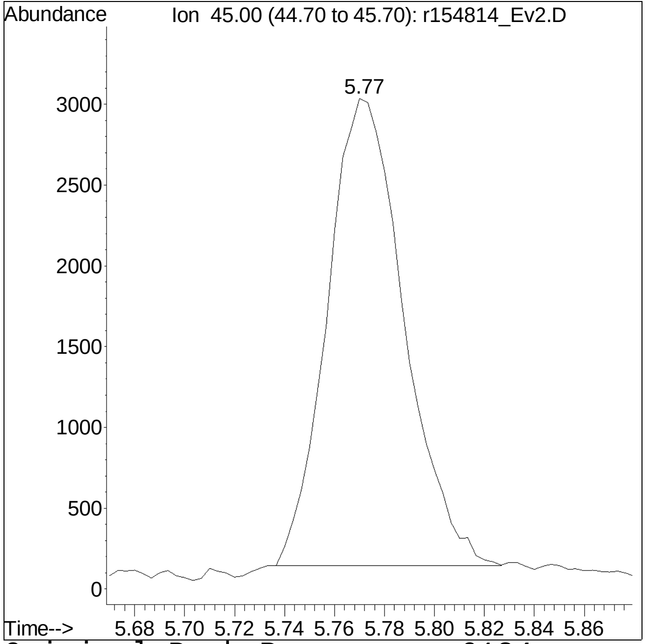


Original Peak Response = 233 Manual Peak Response = 801 M4
M4 = Poor automated baseline construction.

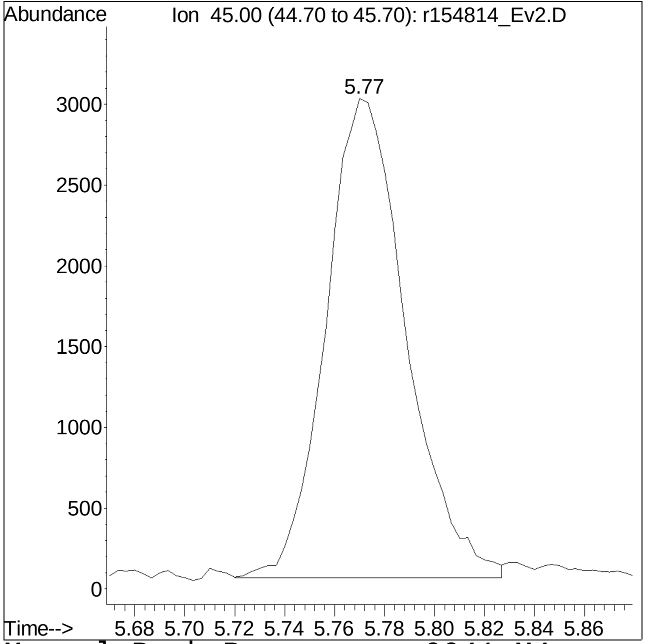
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154814_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  3:32 PM          Instrument  :
Sample      : ITO15-SIMSTD0.04             Quant Date  : 12/23/2017 10:03 am
```

Compound #14: isopropyl alcohol



Original Peak Response = 6184



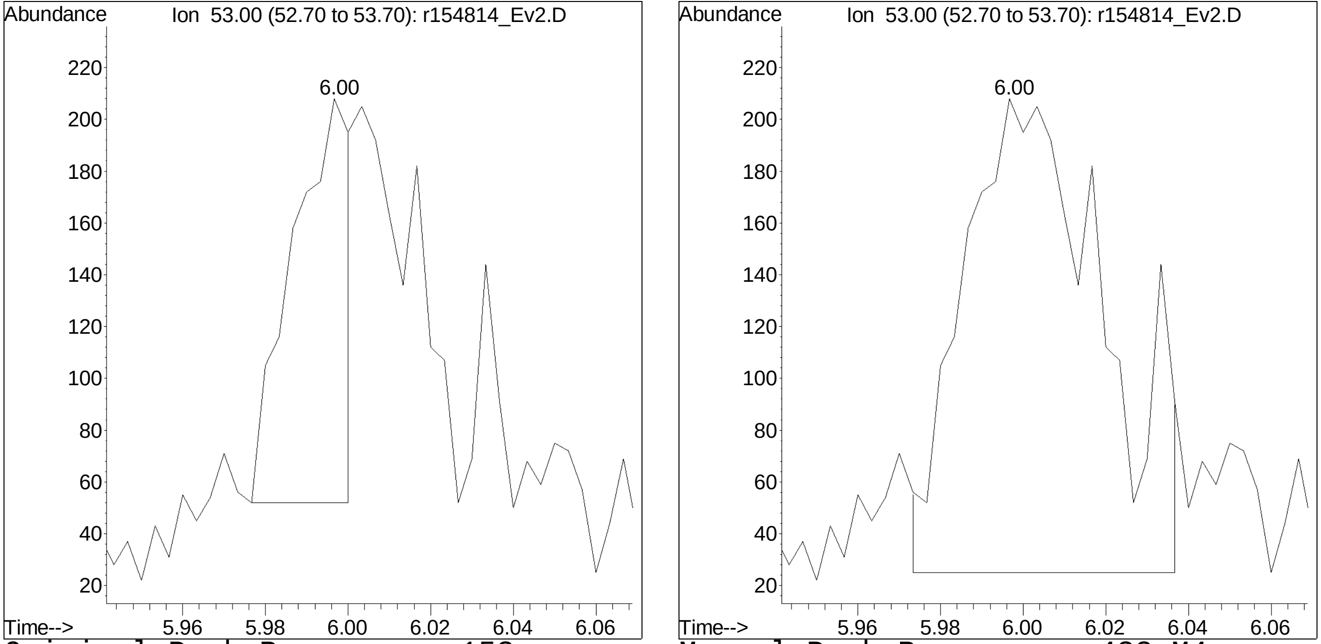
Manual Peak Response = 6641 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154814_Ev2.D                Operator   : AIRLAB15:RY
Date Inj'd  : 12/22/2017  3:32 PM          Instrument :
Sample      : ITO15-SIMSTD0.04             Quant Date : 12/23/2017 10:03 am
```

Compound #15: acrylonitrile



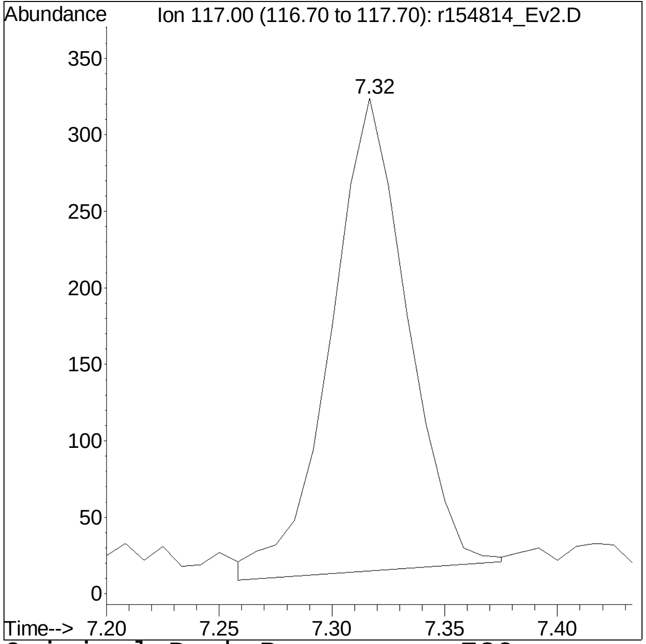
Original Peak Response = 153   Manual Peak Response = 432 M4

M4 = Poor automated baseline construction.

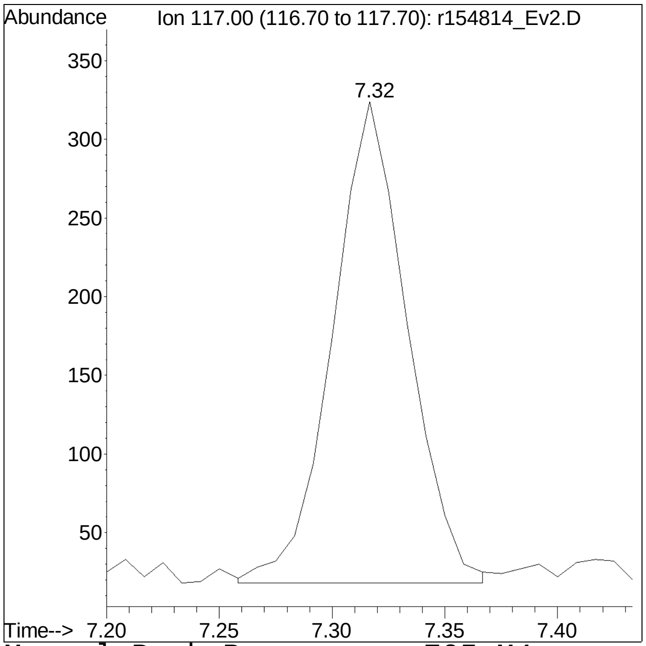
Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TSIM171222.M
Data File : r154814_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 3:32 PM Instrument :
Sample : ITO15-SIMSTD0.04 Quant Date : 12/23/2017 10:03 am

Compound #22: Halothane



Original Peak Response = 729



Manual Peak Response = 705 M4

M4 = Poor automated baseline construction.

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154815_Ev2.D
  Acq On    : 22 Dec 2017   4:12 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.1
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:09:34 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane            8.90   49   151127    10.000 ppbV     0.00
     Standard Area  =       152264                 Recovery   =   99.25%
    33) 1,4-difluorobenzene          11.14  114   362476    10.000 ppbV     0.00
     Standard Area  =       365341                 Recovery   =   99.22%
    51) chlorobenzene-D5             15.88   54    63874    10.000 ppbV     0.00
     Standard Area  =        65487                 Recovery   =   97.54%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4         9.78   65    77417    10.146 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.46%
    53) toluene-D8                   14.00   98   332549     9.819 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   98.19%
    67) bromofluorobenzene           17.23   95   183769    10.820 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  108.20%

   Target Compounds                                                  Qvalue
     2) propylene                     3.78   41      1408M6    0.123 ppbV
     3) dichlorodifluoromethane       3.85   85      1706      0.097 ppbV      97
     4) chloromethane                 4.00   50       963      0.099 ppbV      89
     5) Freon-114                     4.11   85      2192      0.101 ppbV      98
     6) vinyl chloride                4.23   62       908      0.098 ppbV      91
     7) 1,3-butadiene                 4.36   54       828      0.098 ppbV      85
     8) bromomethane                  4.64   94       960      0.110 ppbV      98
     9) chloroethane                  4.83   64       509M4     0.105 ppbV
    10) ethanol                       4.97   31      5682      0.749 ppbV      94
    11) vinyl bromide                 5.20  106       976      0.105 ppbV      96
    12) acetone                       5.49   43     10441      0.952 ppbV #    97
    13) trichlorofluoromethane        5.66  101      1602M4    0.109 ppbV
    14) isopropyl alcohol             5.77   45      8125      0.535 ppbV #    97
    15) acrylonitrile                 6.00   53       775M4    0.096 ppbV
    16) 1,1-dichloroethene            6.35   61      1150      0.095 ppbV      94
    17) tertiary butyl alcohol        6.43   59      1766      0.116 ppbV      94
    18) methylene chloride            6.49   49      1389      0.115 ppbV      96
    19) 3-chloropropene               6.63   41      1304      0.092 ppbV #    90
    20) carbon disulfide              6.79   76      2740      0.087 ppbV #     1
    21) Freon 113                     6.79  101      1626      0.088 ppbV      89
    22) Halothane                     7.32  117      1321      0.104 ppbV #    94
    23) trans-1,2-dichloroethene      7.54   61      1674      0.096 ppbV      97
    24) 1,1-dichloroethane            7.77   63      1960      0.094 ppbV      96
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154815_Ev2.D
  Acq On    : 22 Dec 2017   4:12 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.1
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:09:34 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) MTBE                           7.87   73      2561      0.091 ppbV #    92
    26) vinyl acetate                  7.97   43      2912      0.093 ppbV #    96
    27) 2-butanone                     8.25   43      3087      0.102 ppbV #    96
    28) cis-1,2-dichloroethene         8.72   61      1426      0.094 ppbV      95
    29) Ethyl Acetate                  9.02   61       416      0.096 ppbV      70
    30) chloroform                     9.06   83      1784      0.100 ppbV      96
    31) Tetrahydrofuran                9.56   42      1808      0.092 ppbV      97
    32) 1,2-dichloroethane             9.89   62      1206      0.104 ppbV #    92
    34) hexane                         8.97   57      1996      0.097 ppbV #    62
    36) 1,1,1-trichloroethane         10.18   97      1500      0.097 ppbV #    94
    37) benzene                       10.72   78      3901      0.104 ppbV      95
    38) carbon tetrachloride          10.89  117      1262      0.095 ppbV #    97
    39) cyclohexane                   11.03   56      2095      0.095 ppbV      91
    40) Dibromomethane                11.63   93      1301      0.112 ppbV #   100
    41) 1,2-dichloropropane           11.67   63      1433      0.099 ppbV #    95
    42) bromodichloromethane          11.89   83      1715      0.088 ppbV #    97
    43) 1,4-dioxane                   12.00   88       722      0.079 ppbV #    72
    44) trichloroethene               11.95  130      1366      0.094 ppbV      96
    45) 2,2,4-trimethylpentane        11.99   57      6359      0.092 ppbV #    97
    46) heptane                       12.31   43      2919      0.091 ppbV #    96
    47) cis-1,3-dichloropropene       12.96   75      1586      0.086 ppbV      95
    48) 4-methyl-2-pentanone          13.03   43      3178      0.085 ppbV #    96
    49) trans-1,3-dichloropropene     13.59   75      1462      0.086 ppbV      93
    50) 1,1,2-trichloroethane         13.79   97      1308      0.091 ppbV      95
    52) toluene                       14.11   91      4134      0.094 ppbV      96
    54) 2-hexanone                    14.43   43      2921      0.086 ppbV #    98
    55) dibromochloromethane          14.57  129      1559      0.084 ppbV #    94
    56) 1,2-dibromoethane             14.82  107      1869      0.091 ppbV      96
    57) tetrachloroethene             15.28  166      1509      0.097 ppbV      96
    58) 1,1,1,2-tetrachloroethane     15.90  131      1228      0.088 ppbV      95
    59) chlorobenzene                 15.92  112      3209      0.095 ppbV      97
    60) ethylbenzene                  16.26   91      4866      0.087 ppbV      97
    61) m+p-xylene                    16.42   91      8094      0.177 ppbV      99
    62) bromoform                     16.48  173      1102      0.073 ppbV      96
    63) styrene                       16.74  104      3004      0.081 ppbV      96
    64) 1,1,2,2-tetrachloroethane     16.82   83      2825      0.088 ppbV     100
    65) o-xylene                      16.83   91      4045      0.087 ppbV      98
    66) 1,2,3-Trichloropropane        16.94   75      2270      0.089 ppbV      98
    68) isopropylbenzene              17.34  105      5264      0.088 ppbV      99
    69) Bromobenzene                  17.42   77      3008      0.092 ppbV      98
```

```
                      Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154815_Ev2.D
  Acq On    : 22 Dec 2017   4:12 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.1
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:09:34 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    70) 4-ethyl toluene               17.90  105      5503      0.081 ppbV      99
    71) 1,3,5-trimethylbenzene        17.96  105      4421      0.081 ppbV      98
    72) tert-butylbenzene             18.31  119      4792      0.084 ppbV      99
    73) 1,2,4-trimethylbenzene        18.31  105      4325      0.080 ppbV      95
    74) Benzyl Chloride               18.43   91      2291      0.059 ppbV     100
    75) 1,3-dichlorobenzene           18.44  146      2927      0.083 ppbV      97
    76) 1,4-dichlorobenzene           18.50  146      2838      0.082 ppbV      95
    77) sec-butylbenzene              18.53  105      6516      0.083 ppbV      99
    78) p-isopropyltoluene            18.67  119      5433      0.079 ppbV      98
    79) 1,2-dichlorobenzene           18.79  146      2656      0.081 ppbV      96
    80) n-butylbenzene                19.02   91      4690      0.074 ppbV      97
    81) 1,2,4-trichlorobenzene        20.37  180      1405      0.058 ppbV      99
    82) naphthalene                   20.48  128      3786      0.053 ppbV      96
    83) 1,2,3-trichlorobenzene        20.74  180      1398      0.061 ppbV      95
    84) hexachlorobutadiene           20.81  225      1463      0.074 ppbV      97
   ---------------------------------------------------------------------------

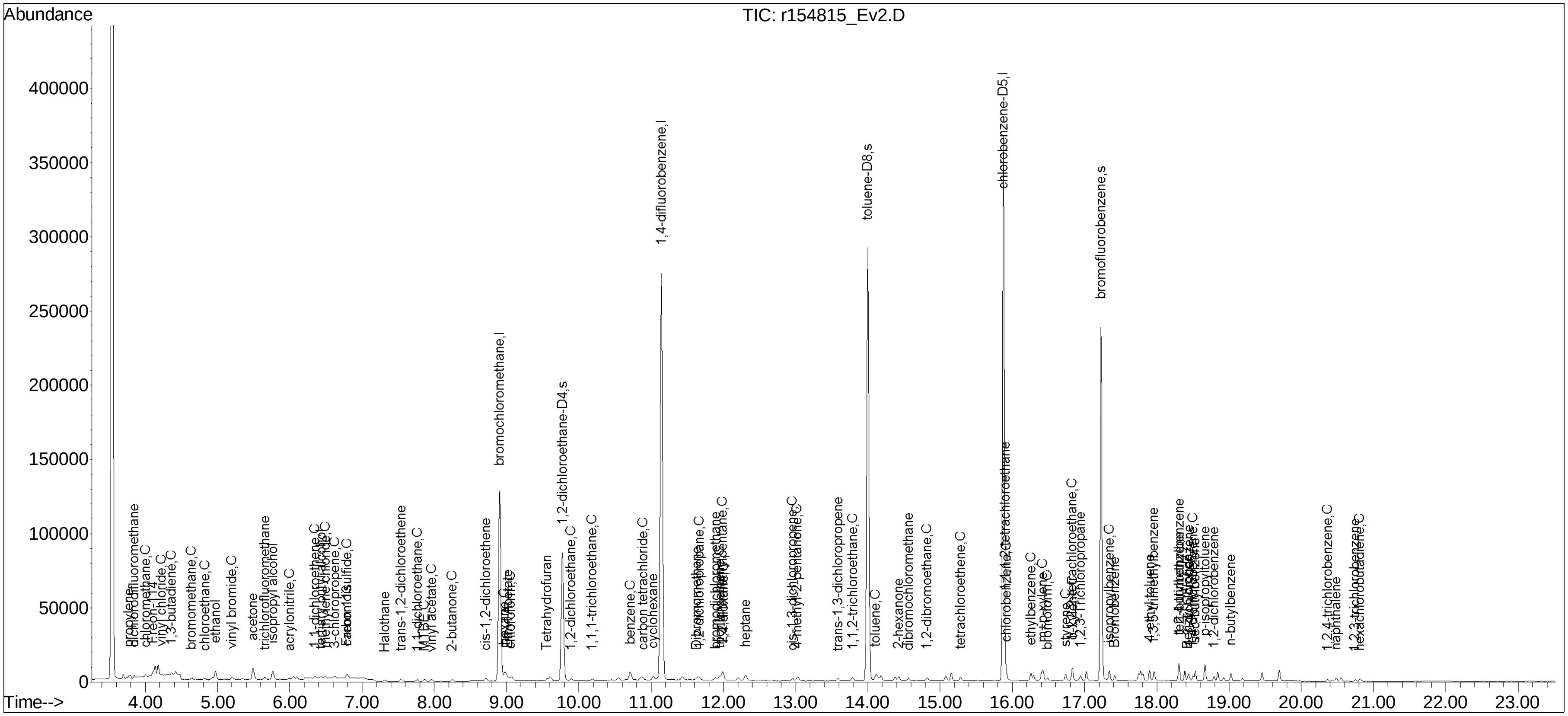
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154815_Ev2.D
Acq On    : 22 Dec 2017   4:12 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.1
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:09:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

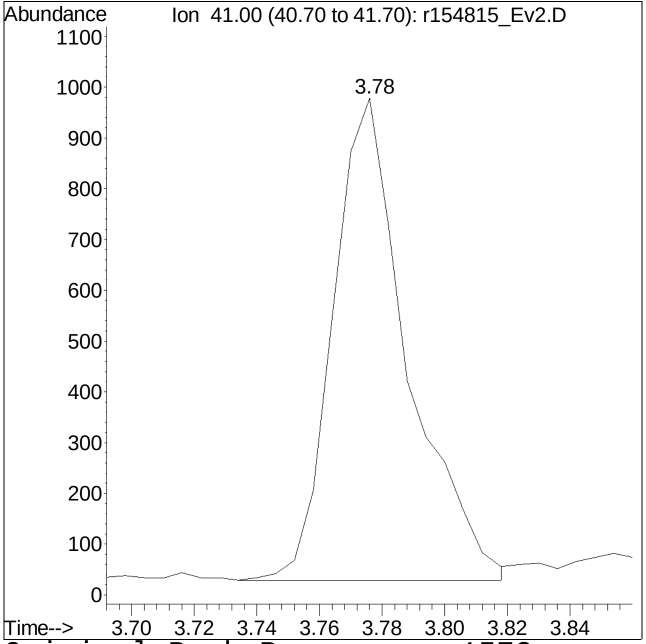


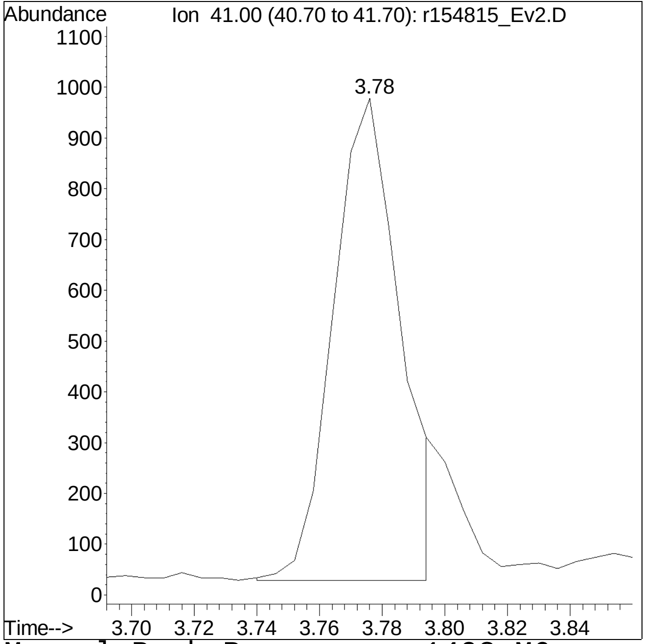
TSIM171222.M Sat Dec 23 11:27:04 2017   Page: 4

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154815_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:12 PM          Instrument  :
Sample      : ITO15-SIMSTD0.1              Quant Date  : 12/23/2017 10:03 am
```

Compound #2: propylene



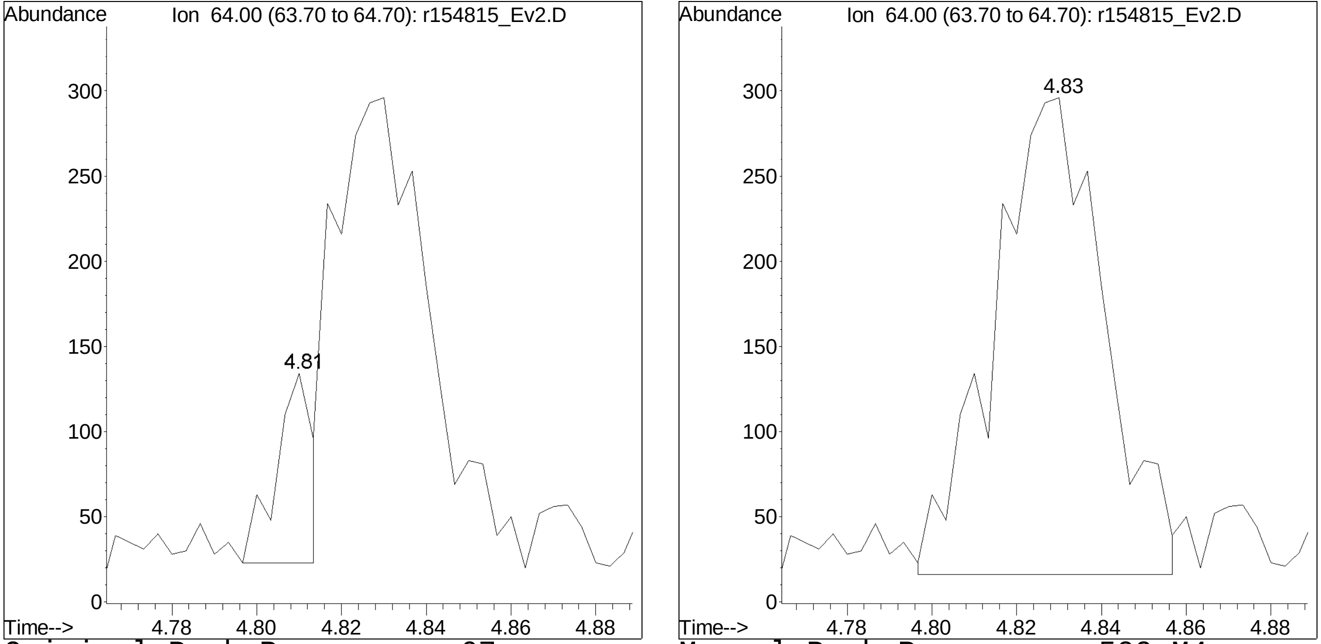


Original Peak Response = 1572   Manual Peak Response = 1408 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TSIM171222.M
Data File : r154815_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 4:12 PM Instrument :
Sample : ITO15-SIMSTD0.1 Quant Date : 12/23/2017 10:03 am

Compound #9: chloroethane



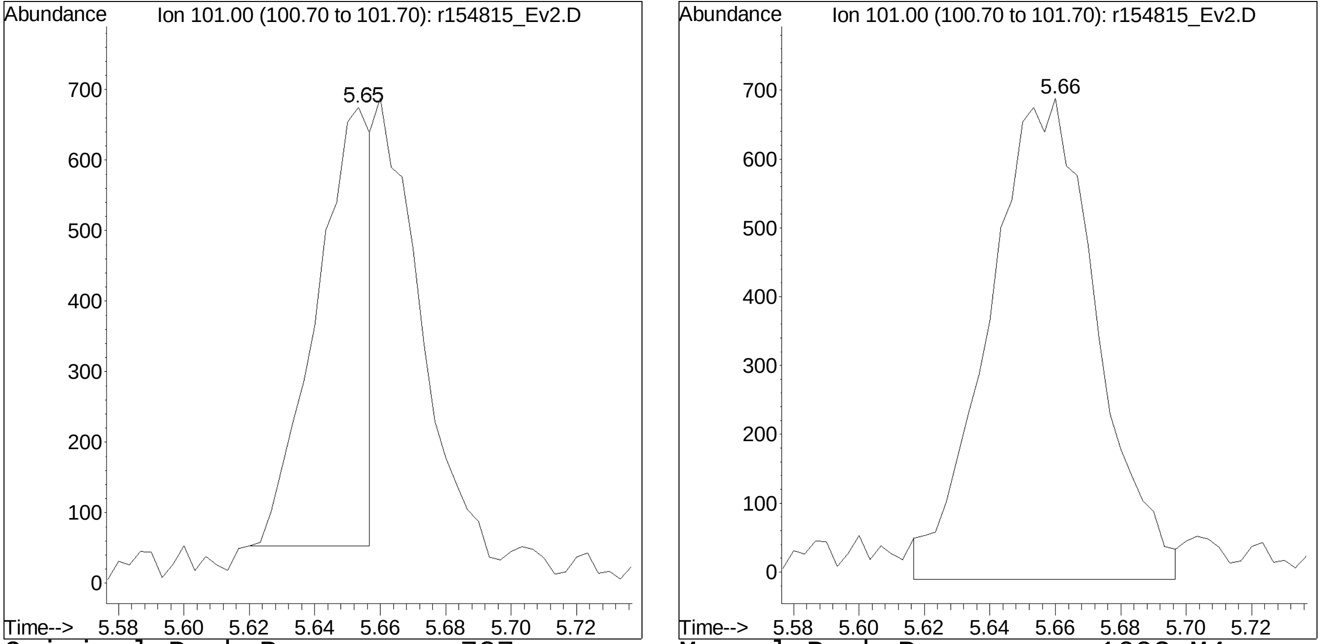
Original Peak Response = 67 Manual Peak Response = 509 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154815_Ev2.D             Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:12 PM       Instrument  :
Sample      : ITO15-SIMSTD0.1           Quant Date  : 12/23/2017 10:03 am
```

Compound #13: trichlorofluoromethane



Original Peak Response = 727   Manual Peak Response = 1602 M4

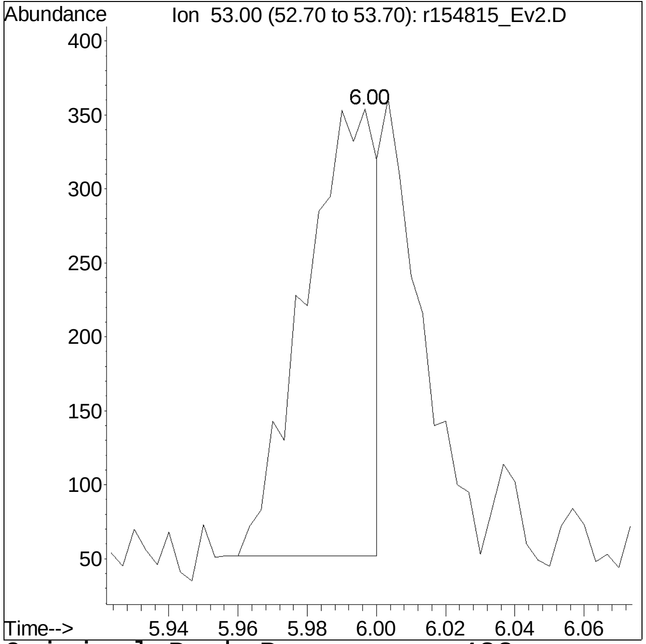
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

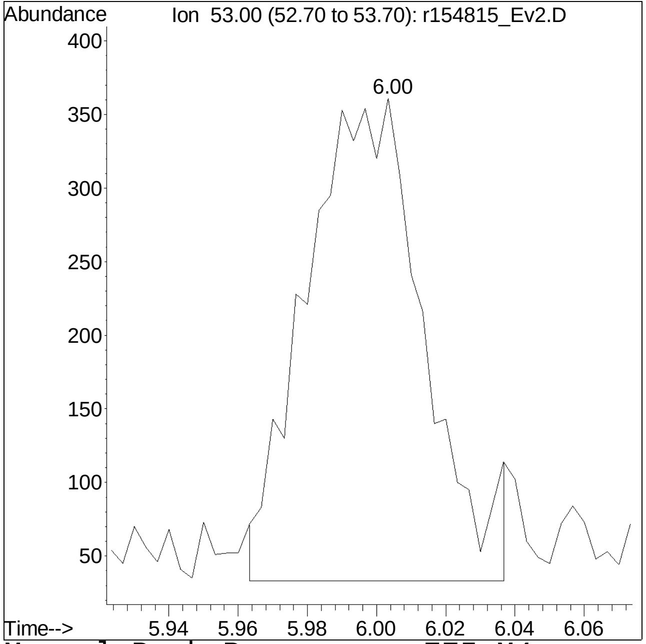
Data Path : O:\Forensics\Data\Airlab15\
Data File : r154815_Ev2.D
Date Inj'd : 12/22/2017 4:12 PM
Sample : ITO15-SIMSTD0.1

QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:03 am

Compound #15: acrylonitrile



Original Peak Response = 438



Manual Peak Response = 775 M4

M4 = Poor automated baseline construction.

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154816_Ev2.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.2
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:10:40 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   -----------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.90   49   150147    10.000 ppbV     0.00
     Standard Area  =       152264                 Recovery   =   98.61%
    33) 1,4-difluorobenzene         11.14  114   361380    10.000 ppbV     0.00
     Standard Area  =       365341                 Recovery   =   98.92%
    51) chlorobenzene-D5            15.88   54    64459    10.000 ppbV     0.00
     Standard Area  =        65487                 Recovery   =   98.43%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4        9.77   65    76179    10.014 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.14%
    53) toluene-D8                  14.00   98   328154     9.601 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   96.01%
    67) bromofluorobenzene          17.23   95   173632    10.130 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.30%

   Target Compounds                                                 Qvalue
     2) propylene                    3.78   41      2697M6    0.236 ppbV
     3) dichlorodifluoromethane      3.85   85      3777      0.216 ppbV      99
     4) chloromethane                4.00   50      2118      0.218 ppbV      96
     5) Freon-114                    4.11   85      4701      0.217 ppbV      98
     6) vinyl chloride               4.23   62      1999      0.216 ppbV      95
     7) 1,3-butadiene                4.37   54      1790      0.213 ppbV      96
     8) bromomethane                 4.64   94      1853      0.214 ppbV      94
     9) chloroethane                 4.83   64      1125      0.234 ppbV     100
    10) ethanol                      4.97   31     10148      1.346 ppbV      99
    11) vinyl bromide                5.20  106      2012      0.217 ppbV      95
    12) acetone                      5.49   43     16635      1.526 ppbV #    99
    13) trichlorofluoromethane       5.66  101      3137      0.214 ppbV      99
    14) isopropyl alcohol            5.76   45     12924      0.856 ppbV     100
    15) acrylonitrile                5.99   53      1633M4    0.203 ppbV
    16) 1,1-dichloroethene           6.35   61      2623      0.218 ppbV      97
    17) tertiary butyl alcohol       6.43   59      3277      0.216 ppbV      98
    18) methylene chloride           6.49   49      2739      0.229 ppbV      95
    19) 3-chloropropene              6.62   41      2913      0.207 ppbV      94
    20) carbon disulfide             6.79   76      6058      0.193 ppbV #     1
    21) Freon 113                    6.79  101      3819      0.208 ppbV     100
    22) Halothane                    7.32  117      2884      0.230 ppbV      97
    23) trans-1,2-dichloroethene     7.54   61      3559      0.206 ppbV      97
    24) 1,1-dichloroethane           7.76   63      4447      0.215 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154816_Ev2.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : IT015-SIMSTD0.2
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:10:40 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   -----------------------------------------------------------------------
    25) MTBE                          7.86   73      5767      0.205 ppbV      97
    26) vinyl acetate                 7.96   43      6140      0.196 ppbV     100
    27) 2-butanone                    8.24   43      6395      0.214 ppbV      97
    28) cis-1,2-dichloroethene        8.72   61      3163      0.209 ppbV      94
    29) Ethyl Acetate                 9.02   61       830      0.193 ppbV      78
    30) chloroform                    9.06   83      3822      0.215 ppbV      98
    31) Tetrahydrofuran               9.55   42      3913      0.200 ppbV      97
    32) 1,2-dichloroethane            9.89   62      2530      0.219 ppbV      93
    34) hexane                        8.97   57      4347      0.211 ppbV #    74
    36) 1,1,1-trichloroethane        10.18   97      3237      0.211 ppbV #    98
    37) benzene                      10.71   78      8093      0.217 ppbV      98
    38) carbon tetrachloride         10.88  117      2630      0.199 ppbV      95
    39) cyclohexane                  11.03   56      4460      0.203 ppbV      96
    40) Dibromomethane               11.63   93      2527      0.218 ppbV #   100
    41) 1,2-dichloropropane          11.66   63      3094      0.214 ppbV      97
    42) bromodichloromethane         11.89   83      3764      0.194 ppbV #    99
    43) 1,4-dioxane                  11.98   88      1881      0.206 ppbV #    67
    44) trichloroethene              11.94  130      3073      0.212 ppbV      97
    45) 2,2,4-trimethylpentane       11.99   57     14216      0.205 ppbV      98
    46) heptane                      12.31   43      6629      0.207 ppbV      96
    47) cis-1,3-dichloropropene      12.96   75      3506      0.190 ppbV      96
    48) 4-methyl-2-pentanone         13.02   43      7253      0.194 ppbV      99
    49) trans-1,3-dichloropropene    13.58   75      3160      0.187 ppbV      93
    50) 1,1,2-trichloroethane        13.79   97      2919      0.204 ppbV      98
    52) toluene                      14.11   91      9319      0.209 ppbV      98
    54) 2-hexanone                   14.42   43      6575      0.192 ppbV      97
    55) dibromochloromethane         14.57  129      3449      0.185 ppbV      98
    56) 1,2-dibromoethane            14.82  107      4249      0.204 ppbV      97
    57) tetrachloroethene            15.28  166      3425      0.217 ppbV      97
    58) 1,1,1,2-tetrachloroethane    15.90  131      2746      0.194 ppbV      98
    59) chlorobenzene                15.92  112      7183      0.210 ppbV      99
    60) ethylbenzene                 16.26   91     11262      0.199 ppbV     100
    61) m+p-xylene                   16.42   91     18587      0.402 ppbV     100
    62) bromoform                    16.48  173      2537      0.167 ppbV      99
    63) styrene                      16.73  104      7236      0.193 ppbV      98
    64) 1,1,2,2-tetrachloroethane    16.82   83      6610      0.204 ppbV      99
    65) o-xylene                     16.83   91      9478      0.202 ppbV      99
    66) 1,2,3-Trichloropropane       16.94   75      5262      0.204 ppbV      97
    68) isopropylbenzene             17.34  105     12119      0.202 ppbV     100
    69) Bromobenzene                 17.42   77      6757      0.205 ppbV      98
```

```
                       Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154816_Ev2.D
  Acq On    : 22 Dec 2017   4:49 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.2
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:10:40 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    70) 4-ethyl toluene              17.90  105     13385      0.195 ppbV      99
    71) 1,3,5-trimethylbenzene       17.96  105     10575      0.193 ppbV      99
    72) tert-butylbenzene            18.30  119     11039      0.192 ppbV      98
    73) 1,2,4-trimethylbenzene       18.31  105     10366      0.189 ppbV      98
    74) Benzyl Chloride              18.43   91      5848      0.149 ppbV      99
    75) 1,3-dichlorobenzene          18.44  146      6974      0.196 ppbV      99
    76) 1,4-dichlorobenzene          18.50  146      6902      0.197 ppbV      98
    77) sec-butylbenzene             18.53  105     15479      0.196 ppbV     100
    78) p-isopropyltoluene           18.66  119     13368      0.193 ppbV      96
    79) 1,2-dichlorobenzene          18.79  146      6501      0.197 ppbV      99
    80) n-butylbenzene               19.02   91     12231      0.191 ppbV      99
    81) 1,2,4-trichlorobenzene       20.36  180      4051      0.167 ppbV      98
    82) naphthalene                  20.48  128     12283      0.172 ppbV      98
    83) 1,2,3-trichlorobenzene       20.74  180      4015      0.174 ppbV      97
    84) hexachlorobutadiene          20.81  225      3684      0.185 ppbV      97
   --------------------------------------------------------------------------

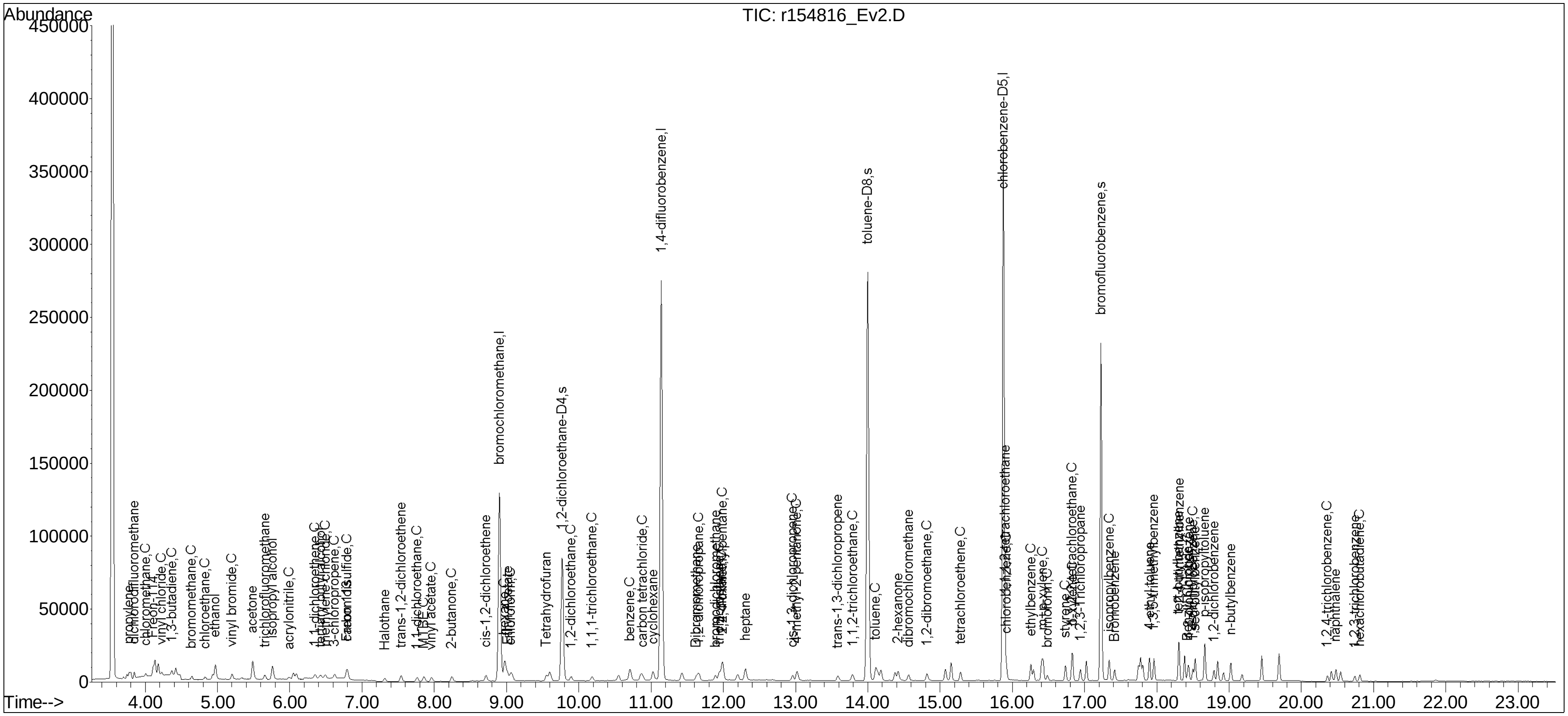
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154816_Ev2.D
Acq On    : 22 Dec 2017   4:49 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.2
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:10:40 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

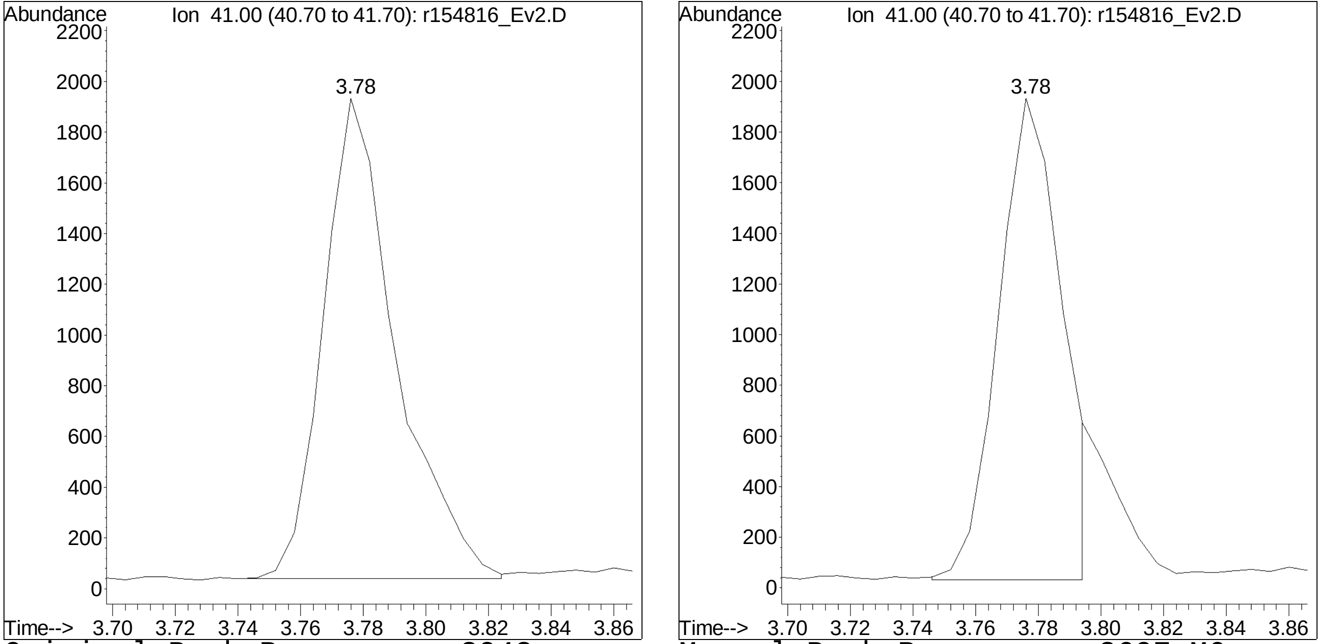


TSIM171222.M Sat Dec 23 11:27:12 2017   Page: 4

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TSIM171222.M
Data File : r154816_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 4:49 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 12/23/2017 10:03 am

Compound #2: propylene

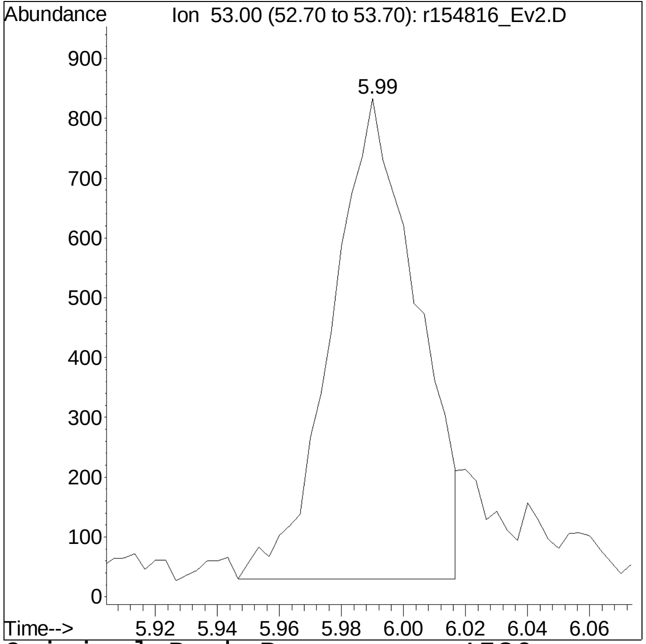


Original Peak Response = 3042 Manual Peak Response = 2697 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

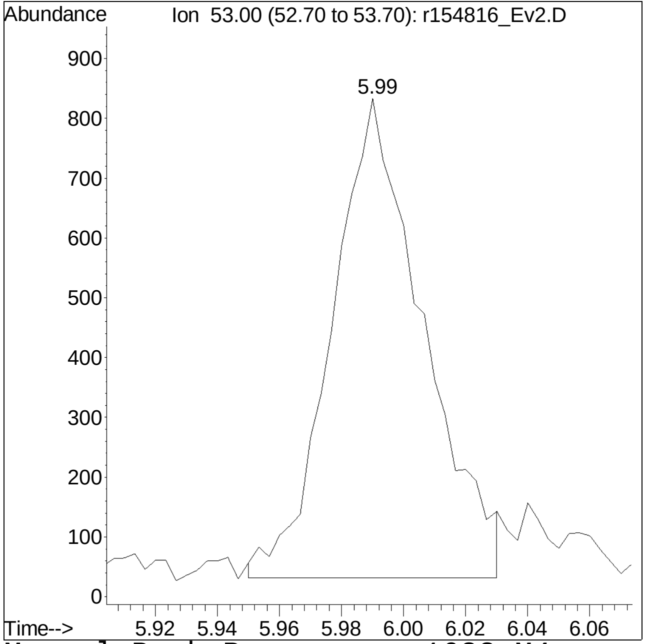
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154816_Ev2.D               Operator   : AIRLAB15:RY
Date Inj'd  : 12/22/2017  4:49 PM         Instrument :
Sample      : ITO15-SIMSTD0.2             Quant Date : 12/23/2017 10:03 am
```

Compound #15: acrylonitrile



Original Peak Response = 1536



Manual Peak Response = 1633 M4

M4 = Poor automated baseline construction.

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154817_Ev2.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:11:39 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.90   49   151135    10.000 ppbV     0.00
     Standard Area  =       152264                Recovery   =   99.26%
    33) 1,4-difluorobenzene         11.14  114   362323    10.000 ppbV     0.00
     Standard Area  =       365341                Recovery   =   99.17%
    51) chlorobenzene-D5            15.88   54    64249    10.000 ppbV     0.00
     Standard Area  =        65487                Recovery   =   98.11%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4        9.78   65    77204    10.123 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.23%
    53) toluene-D8                  14.00   98   331597     9.734 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.34%
    67) bromofluorobenzene          17.23   95   179816    10.526 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  105.26%

   Target Compounds                                                  Qvalue
     2) propylene                    3.78   41      6252M6    0.544 ppbV
     3) dichlorodifluoromethane      3.85   85      9137      0.520 ppbV     100
     4) chloromethane                4.00   50      5112      0.523 ppbV      99
     5) Freon-114                    4.11   85     11436      0.525 ppbV     100
     6) vinyl chloride               4.23   62      4865      0.522 ppbV      97
     7) 1,3-butadiene                4.37   54      4365      0.516 ppbV     100
     8) bromomethane                 4.64   94      4559      0.522 ppbV      99
     9) chloroethane                 4.83   64      2631M4    0.545 ppbV
    10) ethanol                      4.97   31     21649      2.853 ppbV      99
    11) vinyl bromide                5.20  106      4817      0.517 ppbV      91
    12) acetone                      5.48   43     34995      3.190 ppbV #   100
    13) trichlorofluoromethane       5.66  101      7703      0.523 ppbV      97
    14) isopropyl alcohol            5.75   45     24933      1.640 ppbV      99
    15) acrylonitrile                5.99   53      3959      0.490 ppbV      95
    16) 1,1-dichloroethene           6.35   61      6187      0.511 ppbV      97
    17) tertiary butyl alcohol       6.42   59      7914      0.519 ppbV      98
    18) methylene chloride           6.49   49      6422      0.533 ppbV      97
    19) 3-chloropropene              6.62   41      7253      0.513 ppbV      97
    20) carbon disulfide             6.79   76     14390      0.456 ppbV #    37
    21) Freon 113                    6.79  101      8610      0.466 ppbV      95
    22) Halothane                    7.32  117      7013      0.554 ppbV      98
    23) trans-1,2-dichloroethene     7.54   61      8880      0.511 ppbV     100
    24) 1,1-dichloroethane           7.77   63     10738      0.517 ppbV      99
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154817_Ev2.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:11:39 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) MTBE                         7.85   73     14170       0.502 ppbV      97
    26) vinyl acetate                7.96   43     15105       0.480 ppbV     100
    27) 2-butanone                   8.23   43     15540       0.515 ppbV      99
    28) cis-1,2-dichloroethene       8.72   61      7744       0.510 ppbV     100
    29) Ethyl Acetate                9.01   61      2183       0.504 ppbV      89
    30) chloroform                   9.06   83      9329       0.522 ppbV      98
    31) Tetrahydrofuran              9.54   42      9956       0.507 ppbV      98
    32) 1,2-dichloroethane           9.89   62      5983       0.514 ppbV      99
    34) hexane                       8.97   57     10697       0.518 ppbV      80
    36) 1,1,1-trichloroethane       10.18   97      7867       0.511 ppbV      99
    37) benzene                     10.72   78     19408       0.519 ppbV      99
    38) carbon tetrachloride        10.88  117      6506       0.491 ppbV      98
    39) cyclohexane                 11.03   56     11072       0.503 ppbV      98
    40) Dibromomethane              11.63   93      6159       0.529 ppbV #    98
    41) 1,2-dichloropropane         11.67   63      7391       0.510 ppbV      98
    42) bromodichloromethane        11.89   83      9387       0.483 ppbV      99
    43) 1,4-dioxane                 11.97   88      4677       0.510 ppbV      83
    44) trichloroethene             11.94  130      7420       0.510 ppbV      98
    45) 2,2,4-trimethylpentane      11.99   57     35231       0.508 ppbV      99
    46) heptane                     12.31   43     16332       0.509 ppbV      99
    47) cis-1,3-dichloropropene     12.96   75      8881       0.481 ppbV      99
    48) 4-methyl-2-pentanone        13.02   43     18301       0.488 ppbV      99
    49) trans-1,3-dichloropropene   13.58   75      7929       0.468 ppbV      97
    50) 1,1,2-trichloroethane       13.79   97      7282       0.508 ppbV      98
    52) toluene                     14.11   91     22862       0.516 ppbV     100
    54) 2-hexanone                  14.42   43     17194       0.502 ppbV      98
    55) dibromochloromethane        14.57  129      8350       0.449 ppbV      97
    56) 1,2-dibromoethane           14.82  107     10495       0.507 ppbV      99
    57) tetrachloroethene           15.28  166      8108       0.516 ppbV      99
    58) 1,1,1,2-tetrachloroethane   15.90  131      6714       0.477 ppbV      99
    59) chlorobenzene               15.92  112     17481       0.513 ppbV      99
    60) ethylbenzene                16.26   91     28300       0.501 ppbV     100
    61) m+p-xylene                  16.42   91     46628       1.011 ppbV      99
    62) bromoform                   16.48  173      6466       0.428 ppbV      97
    63) styrene                     16.73  104     18243       0.487 ppbV      98
    64) 1,1,2,2-tetrachloroethane   16.82   83     16260       0.503 ppbV     100
    65) o-xylene                    16.83   91     23721       0.508 ppbV      99
    66) 1,2,3-Trichloropropane      16.94   75     13091       0.509 ppbV      99
    68) isopropylbenzene            17.34  105     30155       0.503 ppbV      99
    69) Bromobenzene                17.42   77     16839       0.513 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154817_Ev2.D
  Acq On    : 22 Dec 2017   5:27 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD0.5
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:11:39 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    70) 4-ethyl toluene             17.90  105     33889      0.496 ppbV      99
    71) 1,3,5-trimethylbenzene      17.96  105     26875      0.491 ppbV     100
    72) tert-butylbenzene           18.31  119     28249      0.493 ppbV      99
    73) 1,2,4-trimethylbenzene      18.31  105     26694      0.489 ppbV      98
    74) Benzyl Chloride             18.43   91     15946      0.406 ppbV      98
    75) 1,3-dichlorobenzene         18.44  146     17843      0.503 ppbV      99
    76) 1,4-dichlorobenzene         18.50  146     17621      0.504 ppbV      98
    77) sec-butylbenzene            18.53  105     38718      0.491 ppbV     100
    78) p-isopropyltoluene          18.67  119     33943      0.491 ppbV      99
    79) 1,2-dichlorobenzene         18.79  146     16331      0.496 ppbV      98
    80) n-butylbenzene              19.02   91     31920      0.501 ppbV      98
    81) 1,2,4-trichlorobenzene      20.36  180     11460      0.474 ppbV      99
    82) naphthalene                 20.48  128     34580      0.486 ppbV      99
    83) 1,2,3-trichlorobenzene      20.74  180     10910      0.474 ppbV      99
    84) hexachlorobutadiene         20.81  225      9397      0.474 ppbV     100
   ---------------------------------------------------------------------------

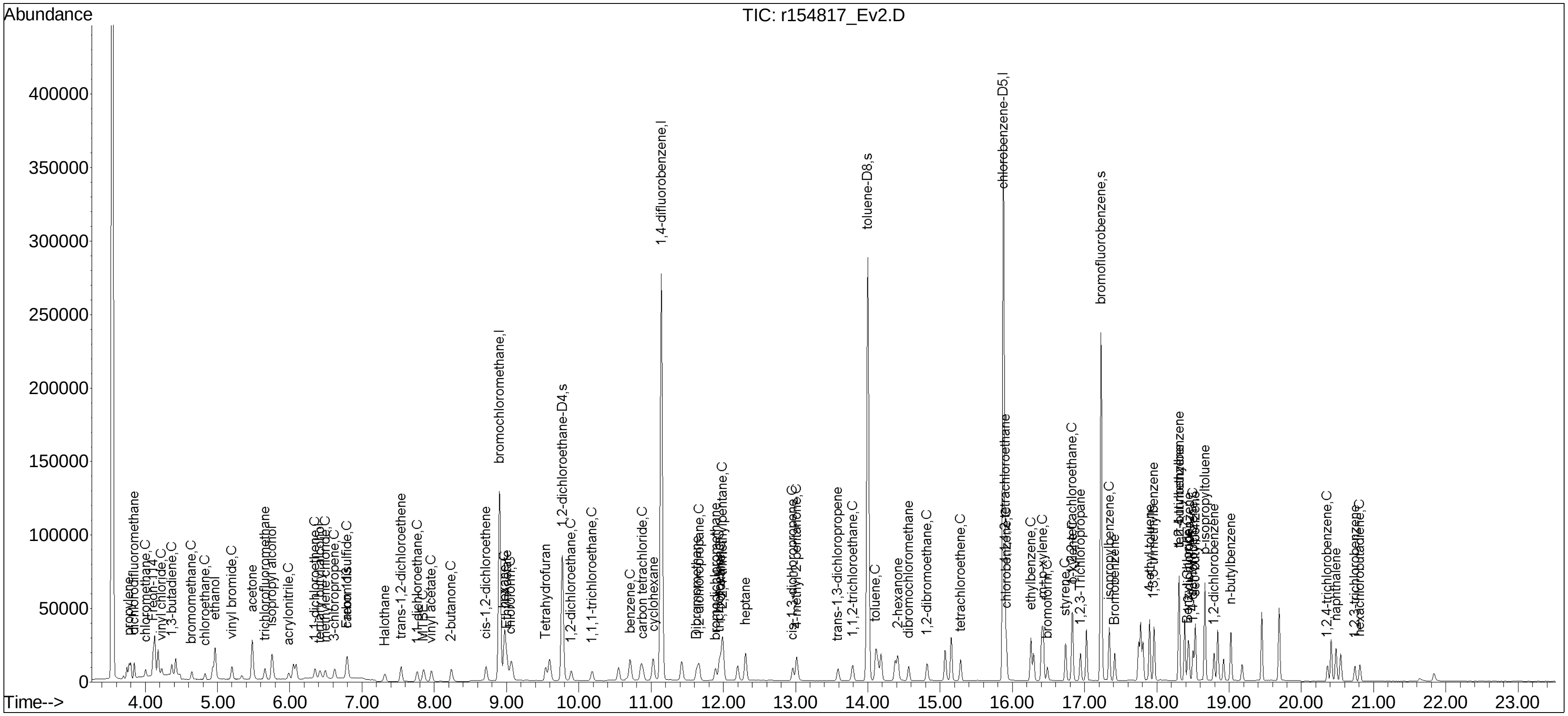
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154817_Ev2.D
Acq On    : 22 Dec 2017   5:27 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD0.5
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:11:39 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

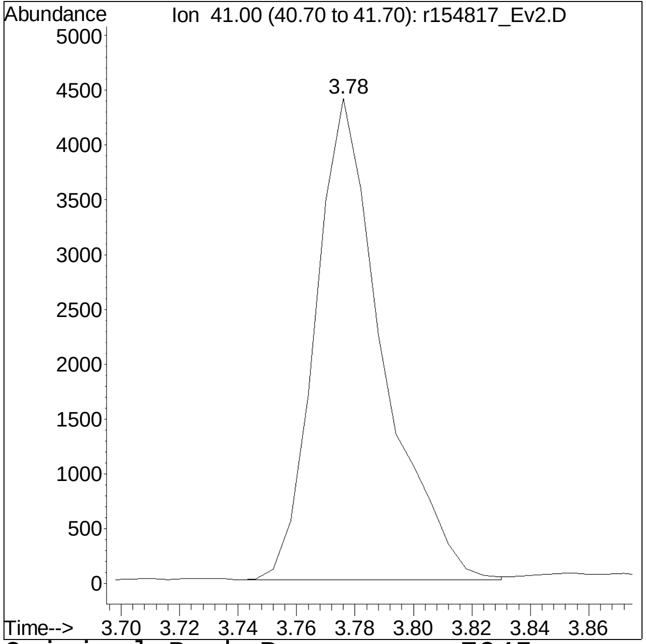
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

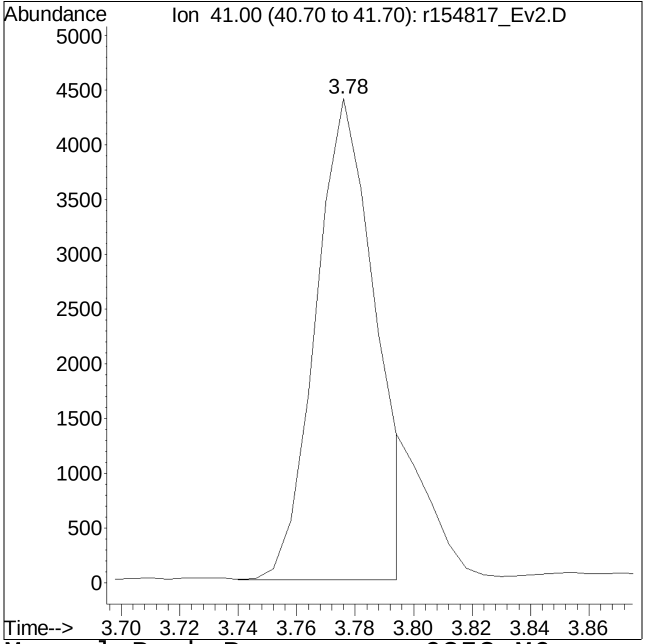


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154817_Ev2.D                Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  5:27 PM          Instrument   :
Sample      : ITO15-SIMSTD0.5              Quant Date   : 12/23/2017 10:03 am
```

Compound #2: propylene



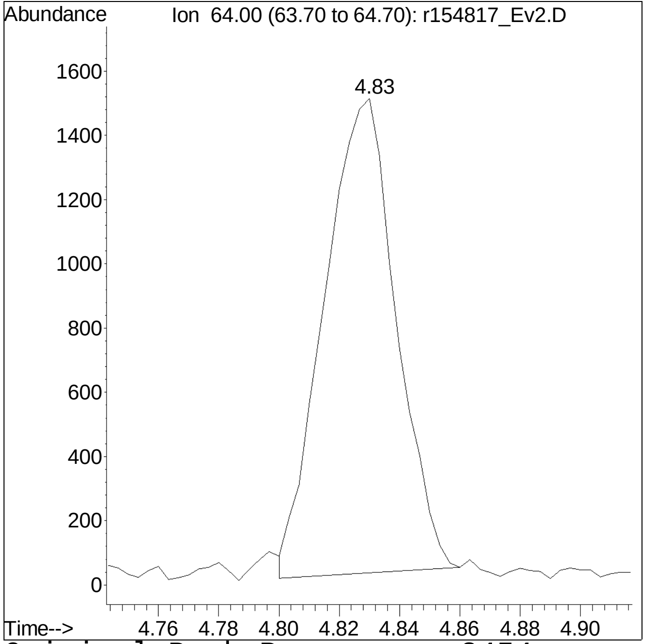


Original Peak Response = 7045   Manual Peak Response = 6252 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

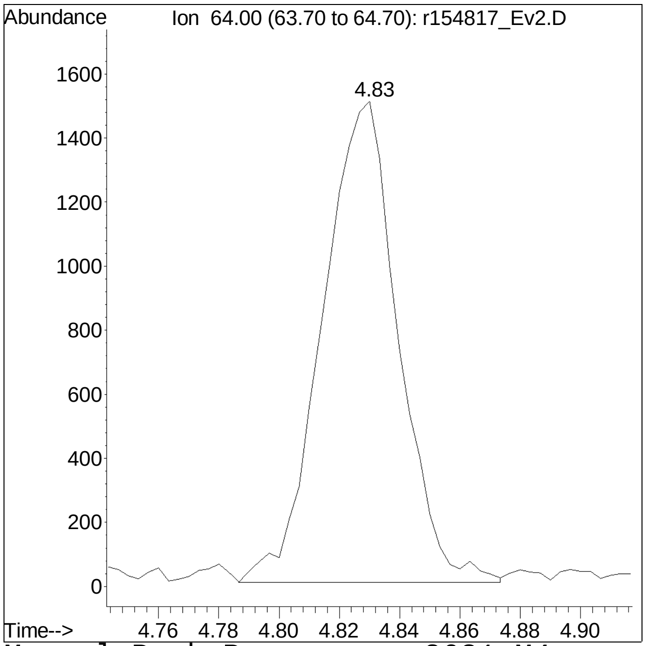
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154817_Ev2.D             Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  5:27 PM       Instrument   :
Sample      : ITO15-SIMSTD0.5           Quant Date   : 12/23/2017 10:03 am
```

Compound #9: chloroethane



Original Peak Response = 2454



Manual Peak Response = 2631 M4

M4 = Poor automated baseline construction.

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154818_Ev2.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:13:44 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   151501    10.000 ppbV     0.00
     Standard Area  =       152264                 Recovery   =   99.50%
    33) 1,4-difluorobenzene         11.14  114   367465    10.000 ppbV     0.00
     Standard Area  =       365341                 Recovery   =  100.58%
    51) chlorobenzene-D5            15.88   54    65553    10.000 ppbV     0.00
     Standard Area  =        65487                 Recovery   =  100.10%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4        9.78   65    77123     9.971 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.71%
    53) toluene-D8                  14.00   98   333342     9.590 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   95.90%
    67) bromofluorobenzene          17.23   95   186951    10.726 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  107.26%

   Target Compounds                                                 Qvalue
     2) propylene                    3.78   41     12432M6    1.080 ppbV
     3) dichlorodifluoromethane      3.85   85     18284      1.038 ppbV     100
     4) chloromethane                4.00   50     10286      1.051 ppbV      99
     5) Freon-114                    4.11   85     22761      1.042 ppbV     100
     6) vinyl chloride               4.23   62      9738      1.043 ppbV      99
     7) 1,3-butadiene                4.37   54      8663      1.022 ppbV      99
     8) bromomethane                 4.65   94      9301      1.062 ppbV      98
     9) chloroethane                 4.83   64      5090      1.051 ppbV      98
    10) ethanol                      4.96   31     39396      5.180 ppbV      97
    11) vinyl bromide                5.20  106      9626      1.031 ppbV      94
    12) acetone                      5.48   43     65940      5.996 ppbV      99
    13) trichlorofluoromethane       5.66  101     15425      1.044 ppbV      97
    14) isopropyl alcohol            5.75   45     45219      2.968 ppbV     100
    15) acrylonitrile                5.98   53      8278      1.021 ppbV      99
    16) 1,1-dichloroethene           6.35   61     12546      1.034 ppbV      99
    17) tertiary butyl alcohol       6.42   59     15903      1.041 ppbV      98
    18) methylene chloride           6.49   49     12687      1.050 ppbV      99
    19) 3-chloropropene              6.63   41     14514      1.024 ppbV      98
    20) carbon disulfide             6.79   76     29022      0.917 ppbV #    74
    21) Freon 113                    6.79  101     17279      0.933 ppbV      96
    22) Halothane                    7.32  117     14225      1.122 ppbV      98
    23) trans-1,2-dichloroethene     7.54   61     17779      1.021 ppbV      98
    24) 1,1-dichloroethane           7.77   63     21430      1.029 ppbV     100
```

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                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154818_Ev2.D
  Acq On    : 22 Dec 2017   6:07 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD1.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:13:44 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) MTBE                         7.85   73     28748      1.015 ppbV      99
    26) vinyl acetate                7.96   43     30696      0.973 ppbV      99
    27) 2-butanone                   8.23   43     31002      1.026 ppbV      99
    28) cis-1,2-dichloroethene       8.72   61     15556      1.021 ppbV      99
    29) Ethyl Acetate                9.01   61      4385      1.009 ppbV      92
    30) chloroform                   9.06   83     18659      1.041 ppbV     100
    31) Tetrahydrofuran              9.53   42     19527M6    0.991 ppbV
    32) 1,2-dichloroethane           9.90   62     12113      1.039 ppbV      99
    34) hexane                       8.97   57     21409      1.021 ppbV      99
    36) 1,1,1-trichloroethane       10.18   97     15591      0.998 ppbV      98
    37) benzene                     10.72   78     38437      1.013 ppbV      99
    38) carbon tetrachloride        10.89  117     13039      0.971 ppbV      98
    39) cyclohexane                 11.03   56     22483      1.007 ppbV      98
    40) Dibromomethane              11.63   93     12060      1.021 ppbV #    98
    41) 1,2-dichloropropane         11.67   63     14839      1.010 ppbV      99
    42) bromodichloromethane        11.89   83     19160      0.972 ppbV      99
    43) 1,4-dioxane                 11.97   88      9309      1.001 ppbV      90
    44) trichloroethene             11.95  130     14960      1.014 ppbV     100
    45) 2,2,4-trimethylpentane      11.99   57     71500      1.016 ppbV      99
    46) heptane                     12.31   43     32846      1.009 ppbV      99
    47) cis-1,3-dichloropropene     12.97   75     17658      0.944 ppbV      98
    48) 4-methyl-2-pentanone        13.02   43     37559      0.987 ppbV      99
    49) trans-1,3-dichloropropene   13.59   75     16174      0.942 ppbV      99
    50) 1,1,2-trichloroethane       13.79   97     14586      1.003 ppbV      99
    52) toluene                     14.12   91     45430      1.004 ppbV      99
    54) 2-hexanone                  14.41   43     35849      1.027 ppbV      99
    55) dibromochloromethane        14.57  129     17604      0.927 ppbV      99
    56) 1,2-dibromoethane           14.82  107     21122      0.999 ppbV      98
    57) tetrachloroethene           15.28  166     16418      1.025 ppbV      98
    58) 1,1,1,2-tetrachloroethane   15.91  131     13810      0.961 ppbV      96
    59) chlorobenzene               15.92  112     35225      1.013 ppbV     100
    60) ethylbenzene                16.26   91     57763      1.003 ppbV      99
    61) m+p-xylene                  16.42   91     94500      2.009 ppbV      99
    62) bromoform                   16.48  173     13512      0.876 ppbV      98
    63) styrene                     16.74  104     37047      0.970 ppbV      98
    64) 1,1,2,2-tetrachloroethane   16.83   83     33080      1.003 ppbV      99
    65) o-xylene                    16.83   91     47918      1.006 ppbV     100
    66) 1,2,3-Trichloropropane      16.94   75     26365      1.005 ppbV      99
    68) isopropylbenzene            17.34  105     61111      0.999 ppbV      99
    69) Bromobenzene                17.42   77     34048      1.018 ppbV     100
```

```
                     Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154818_Ev2.D
Acq On    : 22 Dec 2017   6:07 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD1.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:13:44 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  70) 4-ethyl toluene               17.90  105     70194      1.007 ppbV      99
  71) 1,3,5-trimethylbenzene        17.97  105     54321      0.973 ppbV      97
  72) tert-butylbenzene             18.31  119     57348      0.980 ppbV      98
  73) 1,2,4-trimethylbenzene        18.31  105     54696      0.981 ppbV      98
  74) Benzyl Chloride               18.43   91     34666      0.866 ppbV      98
  75) 1,3-dichlorobenzene           18.44  146     36375      1.005 ppbV      99
  76) 1,4-dichlorobenzene           18.50  146     35777      1.003 ppbV      96
  77) sec-butylbenzene              18.53  105     79449      0.988 ppbV     100
  78) p-isopropyltoluene            18.67  119     69867      0.991 ppbV      99
  79) 1,2-dichlorobenzene           18.79  146     33477      0.997 ppbV      97
  80) n-butylbenzene                19.02   91     65669      1.010 ppbV      98
  81) 1,2,4-trichlorobenzene        20.36  180     25113      1.017 ppbV      99
  82) naphthalene                   20.48  128     74530      1.026 ppbV      99
  83) 1,2,3-trichlorobenzene        20.74  180     23054      0.981 ppbV      99
  84) hexachlorobutadiene           20.81  225     19201      0.949 ppbV      99
 ---------------------------------------------------------------------------

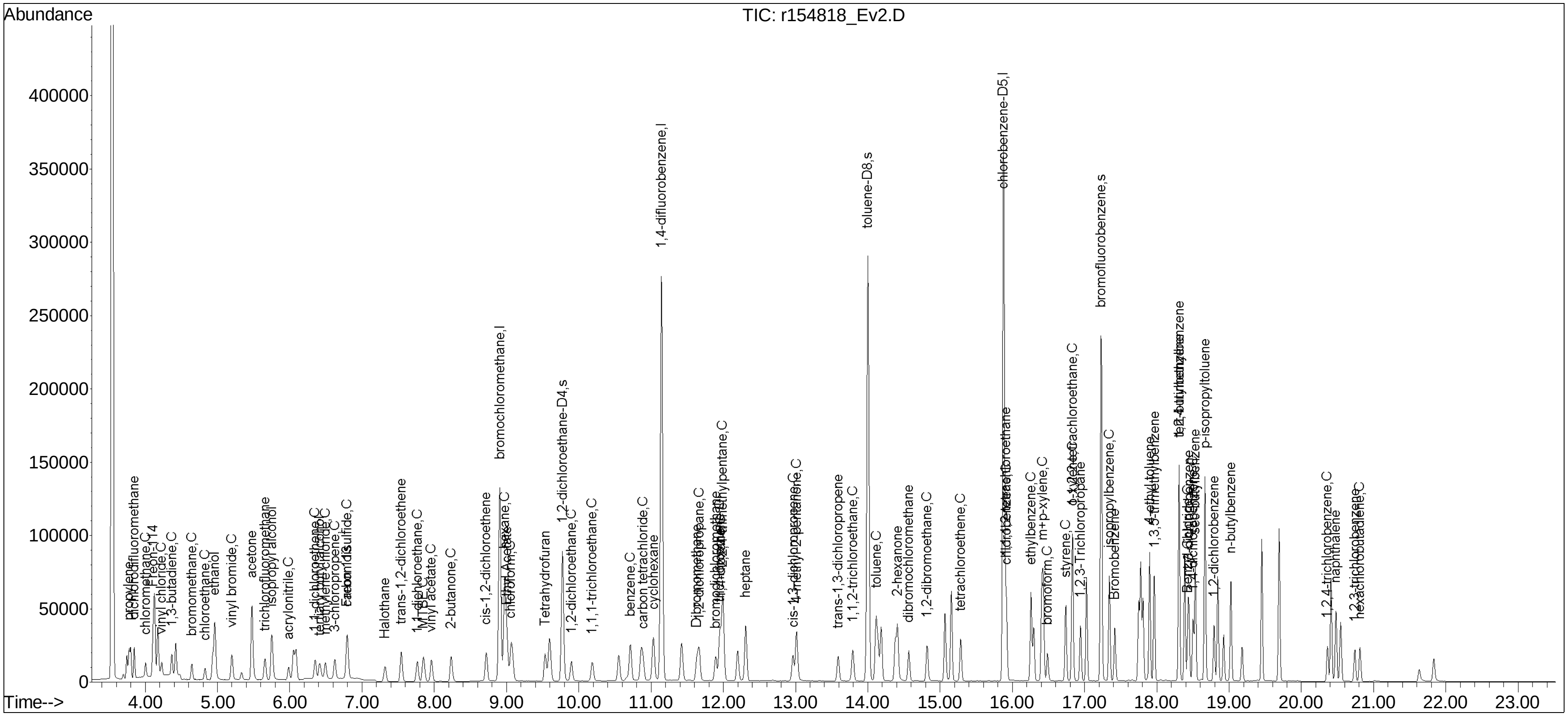
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154818_Ev2.D
Acq On    : 22 Dec 2017   6:07 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD1.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:13:44 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

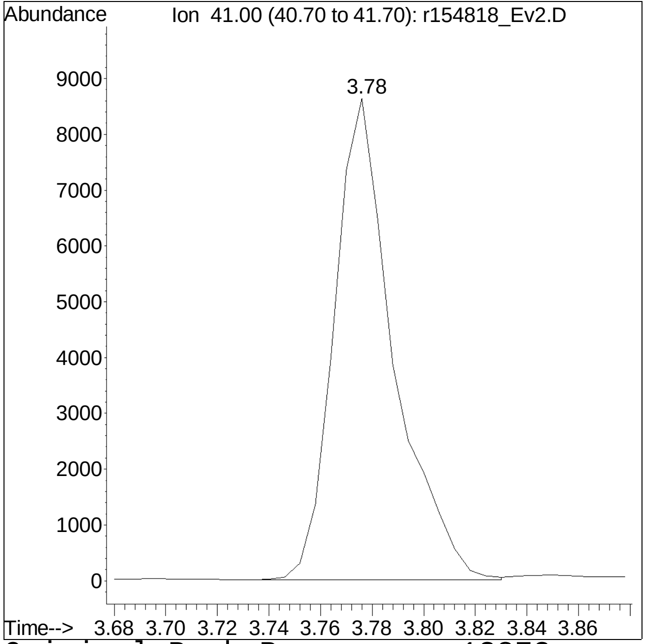
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```



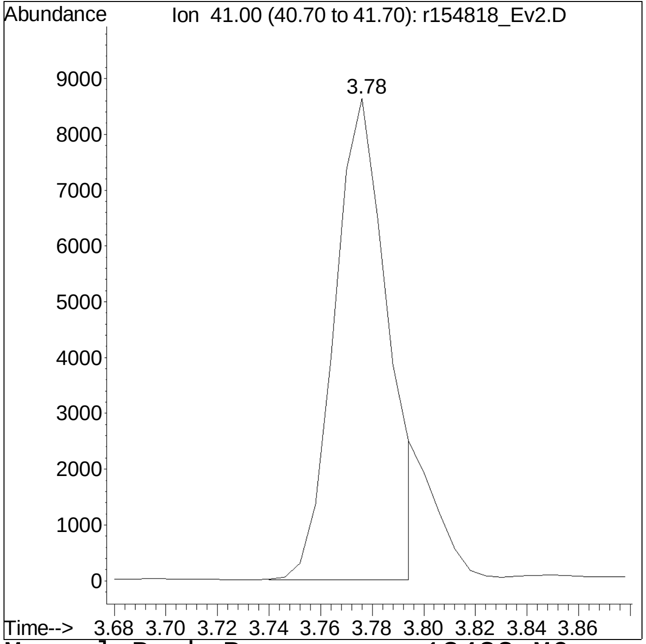
Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TSIM171222.M
Data File : r154818_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 6:07 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 12/23/2017 10:03 am

Compound #2: propylene



Original Peak Response = 13873



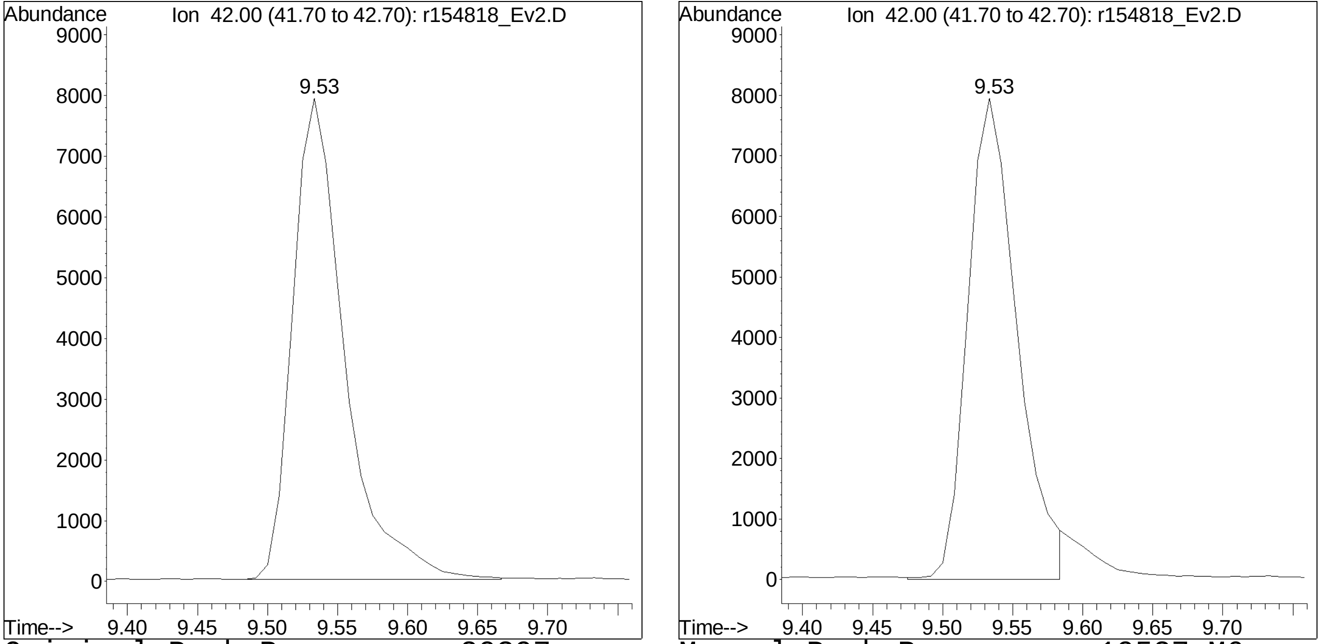
Manual Peak Response = 12432 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154818_Ev2.D               Operator     : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:07 PM         Instrument   :
Sample      : ITO15-SIMSTD1.0             Quant Date   : 12/23/2017 10:03 am
```

Compound #31: Tetrahydrofuran



Original Peak Response = 20397   Manual Peak Response = 19527 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154819_Ev2.D
  Acq On    : 22 Dec 2017   6:44 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:02:13 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:03:53 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   152264    10.000 ppbV   #-0.04
     Standard Area  =       152264                 Recovery   =  100.00%
    33) 1,4-difluorobenzene         11.14  114   365341    10.000 ppbV    -0.05
     Standard Area  =       365341                 Recovery   =  100.00%
    51) chlorobenzene-D5            15.88   54    65487    10.000 ppbV    -0.04
     Standard Area  =        65487                 Recovery   =  100.00%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4        9.78   65    76903     9.984 ppbV   -0.05
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   99.84%
    53) toluene-D8                  14.00   98   347233    13.385 ppbV   -0.04
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  133.85%#
    67) bromofluorobenzene          17.23   95   174129    12.799 ppbV   -0.04
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  127.99%

   Target Compounds                                                  Qvalue
     2) propylene                    3.78   41     57856M6    5.130 ppbV
     3) dichlorodifluoromethane      3.85   85     88550      4.864 ppbV     100
     4) chloromethane                4.00   50     49200      4.665 ppbV      97
     5) Freon-114                    4.11   85    109814      4.675 ppbV      93
     6) vinyl chloride               4.23   62     46904      3.836 ppbV      99
     7) 1,3-butadiene                4.37   54     42593      4.070 ppbV      93
     8) bromomethane                 4.64   94     43999      4.414 ppbV      97
     9) chloroethane                 4.83   64     24336      3.969 ppbV      93
    10) ethanol                      4.96   31    191107M3   16.405 ppbV
    11) vinyl bromide                5.20  106     46932      5.175 ppbV     100
    12) acetone                      5.47   43    276332     20.931 ppbV #    89
    13) trichlorofluoromethane       5.66  101     74232      5.110 ppbV      97
    14) isopropyl alcohol            5.74   45    191427     10.132 ppbV      98
    15) acrylonitrile                5.98   53     40738      3.752 ppbV      97
    16) 1,1-dichloroethene           6.35   61     60987      3.887 ppbV #    88
    17) tertiary butyl alcohol       6.40   59     76787      3.224 ppbV #    89
    18) methylene chloride           6.49   49     60717      4.667 ppbV     100
    19) 3-chloropropene              6.62   41     71249      4.208 ppbV      94
    20) carbon disulfide             6.79   76    159105      5.191 ppbV #    87
    21) Freon 113                    6.79  101     93032      5.886 ppbV      93
    22) Halothane                    7.32  117     63712      4.855 ppbV      92
    23) trans-1,2-dichloroethene     7.54   61     87488      5.319 ppbV      92
    24) 1,1-dichloroethane           7.77   63    104668      5.476 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154819_Ev2.D
  Acq On    : 22 Dec 2017   6:44 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:02:13 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Wed Dec 20 10:03:53 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    25) MTBE                           7.84   73    142307      5.372 ppbV      97
    26) vinyl acetate                  7.96   43    158574      5.653 ppbV     100
    27) 2-butanone                     8.22   43    151859      5.784 ppbV      98
    28) cis-1,2-dichloroethene         8.72   61     76554      5.270 ppbV      90
    29) Ethyl Acetate                  9.00   61     21829      5.494 ppbV      79
    30) chloroform                     9.06   83     90052      5.007 ppbV      99
    31) Tetrahydrofuran                9.51   42     99007M4    5.953 ppbV
    32) 1,2-dichloroethane             9.90   62     58585      5.293 ppbV      94
    34) hexane                         8.97   57    104196      4.222 ppbV      87
    36) 1,1,1-trichloroethane         10.18   97     77629      5.110 ppbV      94
    37) benzene                       10.72   78    188702      4.405 ppbV      96
    38) carbon tetrachloride          10.89  117     66783      4.633 ppbV      96
    39) cyclohexane                   11.03   56    111008      4.132 ppbV      91
    40) Dibromomethane                11.63   93     58716      4.544 ppbV #    93
    41) 1,2-dichloropropane           11.67   63     73015      4.818 ppbV      96
    42) bromodichloromethane          11.89   83     97986      4.339 ppbV      99
    43) 1,4-dioxane                   11.94   88     46219      4.815 ppbV      91
    44) trichloroethene               11.95  130     73333      5.114 ppbV      98
    45) 2,2,4-trimethylpentane        11.99   57    349763      4.231 ppbV #    94
    46) heptane                       12.31   43    161842      5.036 ppbV      91
    47) cis-1,3-dichloropropene       12.96   75     93032      4.748 ppbV      99
    48) 4-methyl-2-pentanone          13.00   43    189184      5.024 ppbV      94
    49) trans-1,3-dichloropropene     13.58   75     85370      4.692 ppbV      99
    50) 1,1,2-trichloroethane         13.79   97     72320      5.373 ppbV      88
    52) toluene                       14.11   91    225983      6.048 ppbV      98
    54) 2-hexanone                    14.40   43    174406      6.199 ppbV      91
    55) dibromochloromethane          14.57  129     94864      6.131 ppbV      99
    56) 1,2-dibromoethane             14.82  107    105559      6.381 ppbV      96
    57) tetrachloroethene             15.28  166     80006      6.575 ppbV      99
    58) 1,1,1,2-tetrachloroethane     15.90  131     71750      6.403 ppbV      98
    59) chlorobenzene                 15.92  112    173750      6.188 ppbV      93
    60) ethylbenzene                  16.26   91    287641      6.344 ppbV      99
    61) m+p-xylene                    16.42   91    470022     12.870 ppbV      99
    62) bromoform                     16.48  173     77040      6.656 ppbV      99
    63) styrene                       16.74  104    190776      6.730 ppbV      95
    64) 1,1,2,2-tetrachloroethane     16.82   83    164749      5.904 ppbV      99
    65) o-xylene                      16.83   91    237952      6.432 ppbV      99
    66) 1,2,3-Trichloropropane        16.94   75    131093      6.206 ppbV      97
    68) isopropylbenzene              17.34  105    305404      6.660 ppbV      98
    69) Bromobenzene                  17.42   77    167126      5.907 ppbV #    85
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                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154819_Ev2.D
Acq On    : 22 Dec 2017   6:44 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD5.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:02:13 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 20 10:03:53 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
  70) 4-ethyl toluene               17.90  105    348094      6.881 ppbV      98
  71) 1,3,5-trimethylbenzene        17.96  105    278762      6.930 ppbV     100
  72) tert-butylbenzene             18.31  119    292308      6.754 ppbV      97
  73) 1,2,4-trimethylbenzene        18.31  105    278459      6.937 ppbV     100
  74) Benzyl Chloride               18.43   91    200036      6.335 ppbV      99
  75) 1,3-dichlorobenzene           18.44  146    180841M3    7.158 ppbV
  76) 1,4-dichlorobenzene           18.50  146    178164      7.149 ppbV      95
  77) sec-butylbenzene              18.53  105    401548      6.881 ppbV      97
  78) p-isopropyltoluene            18.67  119    352002      6.843 ppbV      97
  79) 1,2-dichlorobenzene           18.79  146    167775      7.125 ppbV      94
  80) n-butylbenzene                19.02   91    324825      7.044 ppbV      97
  81) 1,2,4-trichlorobenzene        20.36  180    123324      7.872 ppbV      98
  82) naphthalene                   20.48  128    362936      7.662 ppbV      99
  83) 1,2,3-trichlorobenzene        20.74  180    117402      7.920 ppbV      95
  84) hexachlorobutadiene           20.81  225    101044      8.148 ppbV      95
 --------------------------------------------------------------------------

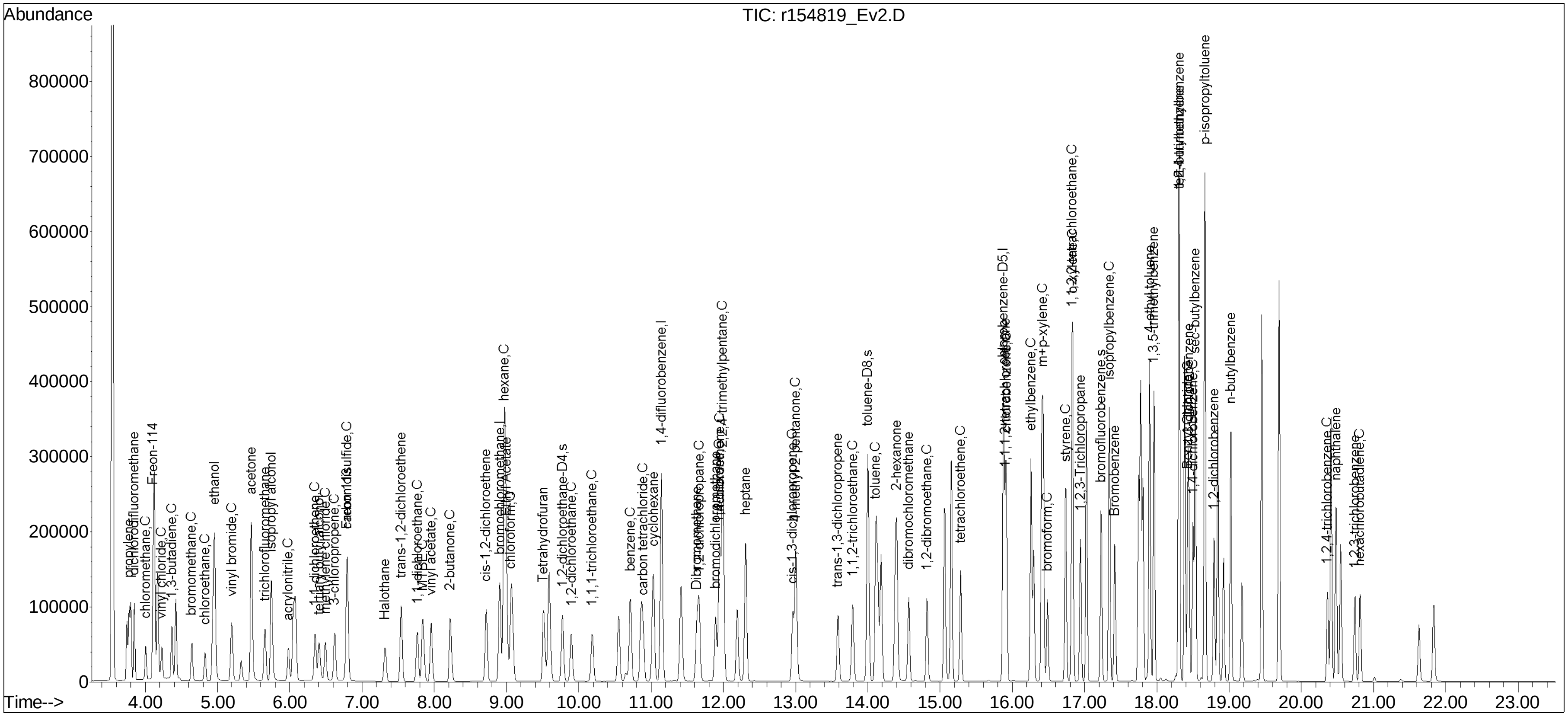
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154819_Ev2.D
Acq On    : 22 Dec 2017   6:44 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD5.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:02:13 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 20 10:03:53 2017
Response via : Initial Calibration

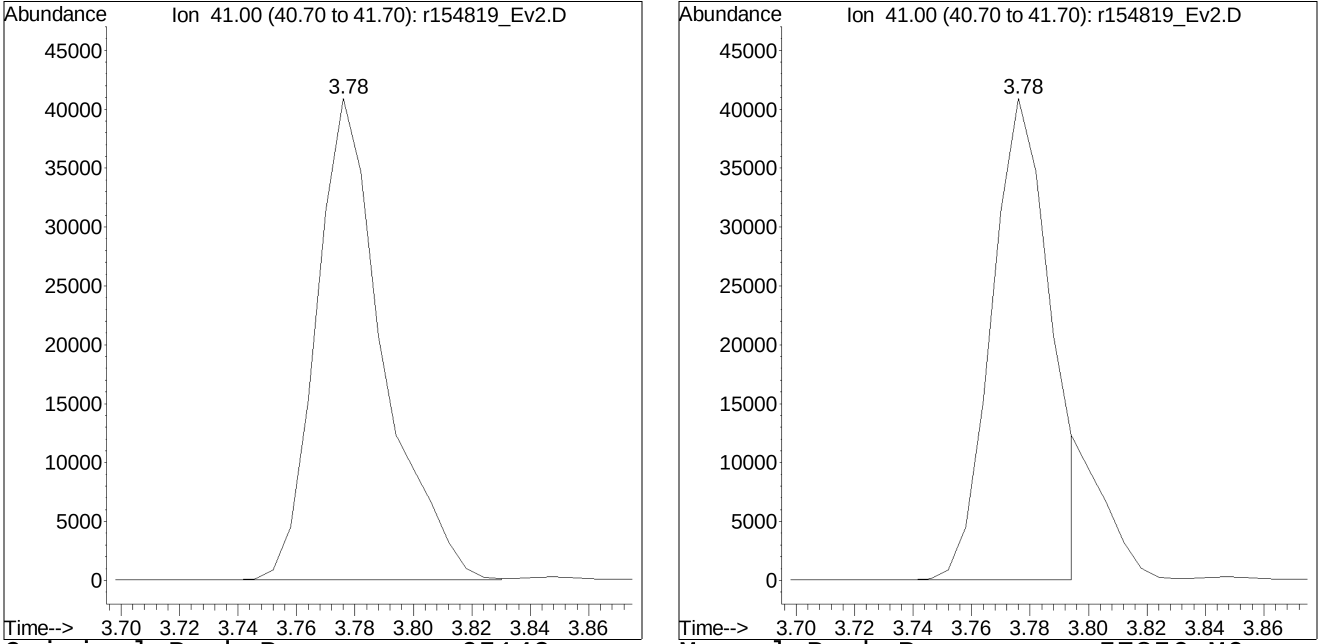
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154819_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:44 PM          Instrument  :
Sample      : ITO15-SIMSTD5.0              Quant Date  : 12/23/2017 10:01 am
```

Compound #2: propylene



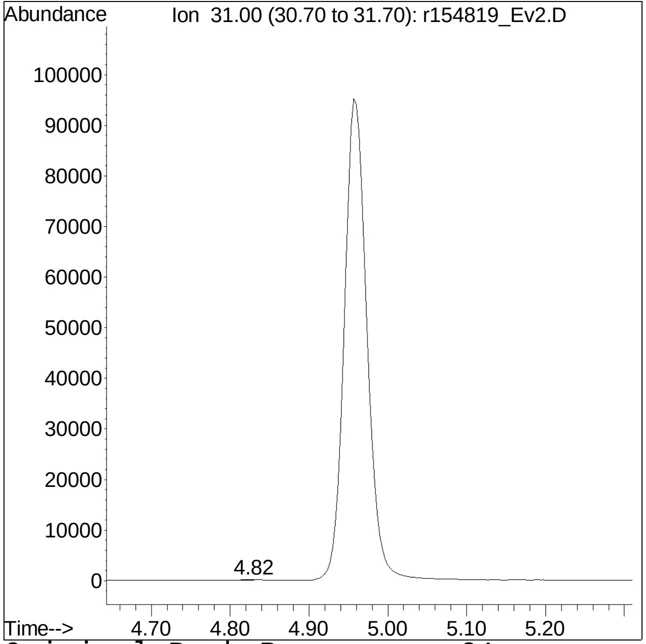
Original Peak Response = 65149   Manual Peak Response = 57856 M6

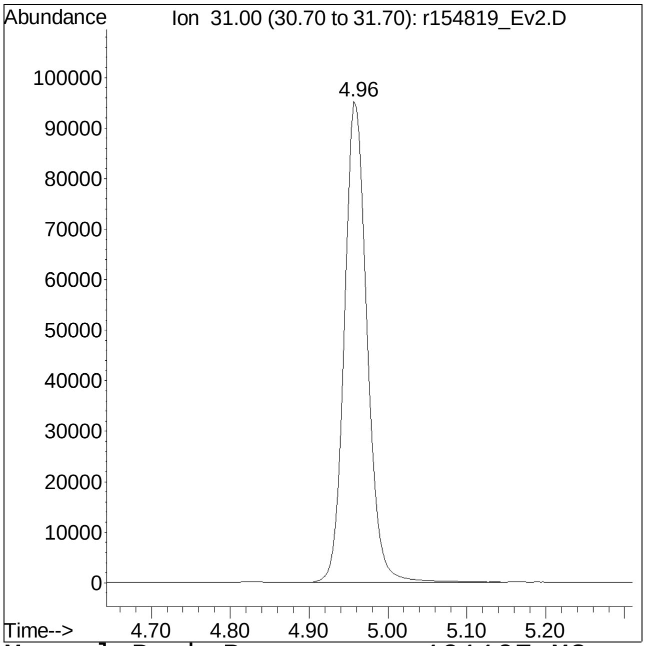
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154819_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:44 PM          Instrument  :
Sample      : ITO15-SIMSTD5.0              Quant Date  : 12/23/2017 10:01 am
```

Compound #10: ethanol



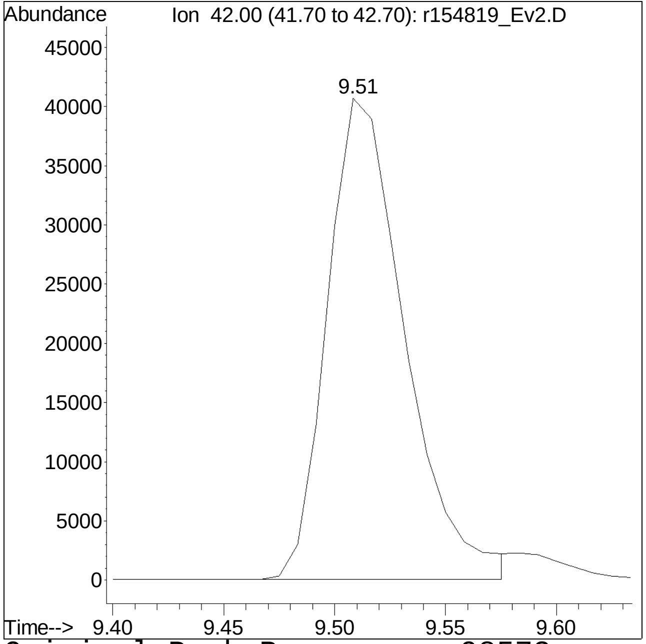


```
Original Peak Response = 91          Manual Peak Response = 191107 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as
1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks
not being split.
```

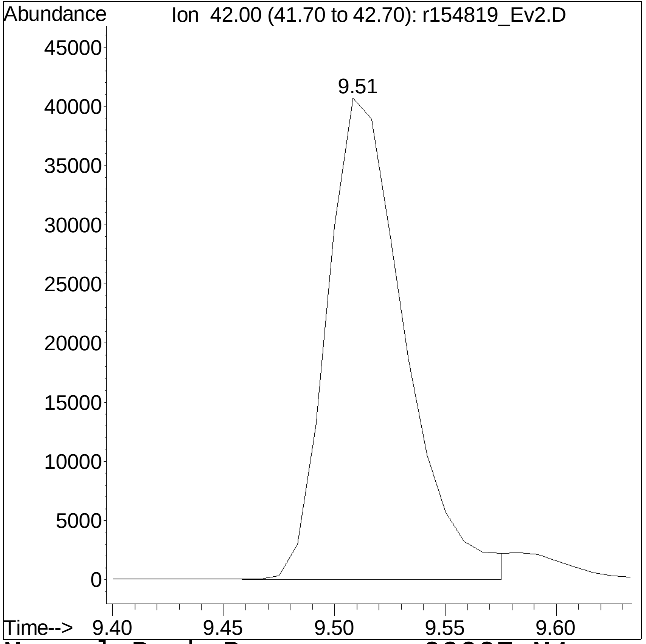
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154819_Ev2.D                Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  6:44 PM          Instrument  :
Sample      : ITO15-SIMSTD5.0              Quant Date  : 12/23/2017 10:01 am
```

Compound #31: Tetrahydrofuran



Original Peak Response = 98573



Manual Peak Response = 99007 M4

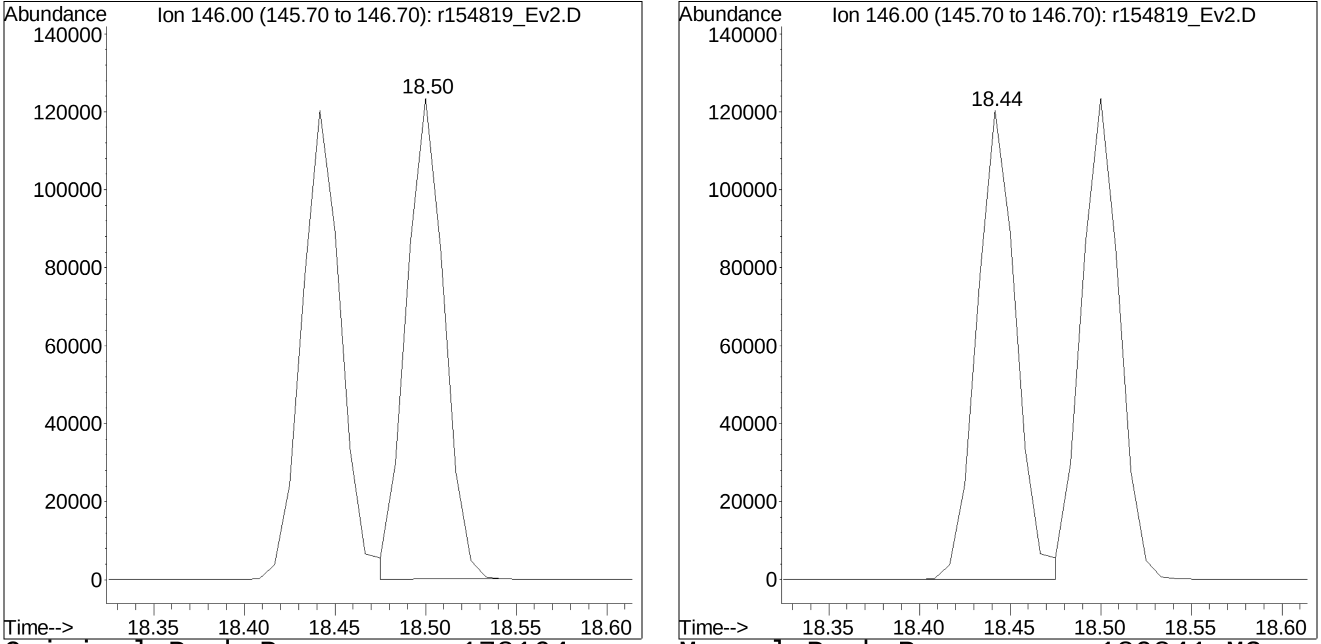
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154819_Ev2.D
Date Inj'd : 12/22/2017 6:44 PM
Sample : ITO15-SIMSTD5.0

QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 10:01 am

Compound #75: 1,3-dichlorobenzene



Original Peak Response = 178164   Manual Peak Response = 180841 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154820_Ev2.D
Acq On    : 22 Dec 2017   7:25 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD010
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:14:28 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                      R.T. QIon  Response  Conc Units Dev(Min)
 -----------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane              8.91   49   154117    10.000 ppbV     0.00
   Standard Area  =       152264                  Recovery   =  101.22%
  33) 1,4-difluorobenzene            11.15  114   367633    10.000 ppbV     0.00
   Standard Area  =       365341                  Recovery   =  100.63%
  51) chlorobenzene-D5               15.88   54    65379    10.000 ppbV     0.00
   Standard Area  =        65487                  Recovery   =   99.84%

 System Monitoring Compounds
  35) 1,2-dichloroethane-D4           9.78   65    77590    10.026 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.26%
  53) toluene-D8                     14.00   98   347533    10.025 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  100.25%
  67) bromofluorobenzene             17.23   95   180714    10.395 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  103.95%

 Target Compounds                                                   Qvalue
   2) propylene                       3.78   41    110804M6    9.461 ppbV
   3) dichlorodifluoromethane         3.85   85    172679      9.633 ppbV     100
   4) chloromethane                   4.01   50     95770      9.616 ppbV      99
   5) Freon-114                       4.11   85    215399      9.690 ppbV      99
   6) vinyl chloride                  4.23   62     92005      9.690 ppbV      99
   7) 1,3-butadiene                   4.37   54     84556      9.807 ppbV      98
   8) bromomethane                    4.65   94     85905      9.645 ppbV      99
   9) chloroethane                    4.83   64     47637      9.670 ppbV      99
  10) ethanol                         4.96   31    367999     47.562 ppbV      99
  11) vinyl bromide                   5.20  106     93642      9.856 ppbV      99
  12) acetone                         5.47   43    532391     47.587 ppbV     100
  13) trichlorofluoromethane          5.66  101    145176      9.661 ppbV     100
  14) isopropyl alcohol               5.75   45    372653     24.041 ppbV     100
  15) acrylonitrile                   5.98   53     81665      9.903 ppbV      99
  16) 1,1-dichloroethene              6.36   61    120709      9.777 ppbV      99
  17) tertiary butyl alcohol          6.40   59    153511      9.876 ppbV      99
  18) methylene chloride              6.49   49    120193      9.779 ppbV      98
  19) 3-chloropropene                 6.63   41    141520      9.812 ppbV      99
  20) carbon disulfide                6.79   76    297861      9.248 ppbV      94
  21) Freon 113                       6.80  101    164357      8.727 ppbV      95
  22) Halothane                       7.33  117    128659      9.976 ppbV      99
  23) trans-1,2-dichloroethene        7.54   61    175779      9.925 ppbV      96
  24) 1,1-dichloroethane              7.77   63    209173      9.872 ppbV      99

TSIM171222.M Sat Dec 23 11:27:40 2017                              Page: 1
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154820_Ev2.D
  Acq On    : 22 Dec 2017   7:25 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD010
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:14:28 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) MTBE                          7.84   73    287341      9.974 ppbV      99
    26) vinyl acetate                 7.96   43    326121     10.159 ppbV      99
    27) 2-butanone                    8.22   43    305359      9.933 ppbV      98
    28) cis-1,2-dichloroethene        8.72   61    152589      9.846 ppbV      96
    29) Ethyl Acetate                 9.00   61     44436     10.056 ppbV      83
    30) chloroform                    9.07   83    178984      9.818 ppbV      99
    31) Tetrahydrofuran               9.51   42    196340      9.796 ppbV      99
    32) 1,2-dichloroethane            9.90   62    116886      9.856 ppbV      99
    34) hexane                        8.97   57    207630      9.901 ppbV      89
    36) 1,1,1-trichloroethane        10.19   97    155236      9.936 ppbV      98
    37) benzene                      10.72   78    377211      9.933 ppbV      99
    38) carbon tetrachloride         10.89  117    134854     10.033 ppbV      99
    39) cyclohexane                  11.03   56    220919      9.889 ppbV      99
    40) Dibromomethane               11.63   93    115938      9.811 ppbV #    98
    41) 1,2-dichloropropane          11.67   63    144328      9.822 ppbV     100
    42) bromodichloromethane         11.90   83    199462     10.115 ppbV     100
    43) 1,4-dioxane                  11.94   88     92467      9.941 ppbV      98
    44) trichloroethene              11.95  130    147010      9.961 ppbV      98
    45) 2,2,4-trimethylpentane       11.99   57    694985      9.873 ppbV      99
    46) heptane                      12.31   43    322887      9.913 ppbV      99
    47) cis-1,3-dichloropropene      12.97   75    189931     10.144 ppbV      97
    48) 4-methyl-2-pentanone         13.00   43    377311      9.910 ppbV     100
    49) trans-1,3-dichloropropene    13.59   75    175333     10.205 ppbV      97
    50) 1,1,2-trichloroethane        13.79   97    143829      9.882 ppbV     100
    52) toluene                      14.12   91    446452      9.894 ppbV      99
    54) 2-hexanone                   14.40   43    355929     10.221 ppbV      99
    55) dibromochloromethane         14.57  129    193940     10.239 ppbV      99
    56) 1,2-dibromoethane            14.82  107    212241     10.070 ppbV     100
    57) tetrachloroethene            15.28  166    161792     10.128 ppbV      99
    58) 1,1,1,2-tetrachloroethane    15.91  131    144689     10.100 ppbV      96
    59) chlorobenzene                15.92  112    346007      9.973 ppbV      98
    60) ethylbenzene                 16.26   91    568191      9.893 ppbV      99
    61) m+p-xylene                   16.42   91    928152     19.780 ppbV      99
    62) bromoform                    16.48  173    160944     10.463 ppbV      99
    63) styrene                      16.74  104    382100     10.031 ppbV      99
    64) 1,1,2,2-tetrachloroethane    16.83   83    328553      9.988 ppbV      99
    65) o-xylene                     16.83   91    465550      9.799 ppbV      99
    66) 1,2,3-Trichloropropane       16.94   75    261157      9.977 ppbV      99
    68) isopropylbenzene             17.34  105    610030     10.004 ppbV     100
    69) Bromobenzene                 17.42   77    334124     10.013 ppbV     100
```

```
                     Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154820_Ev2.D
Acq On    : 22 Dec 2017   7:25 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD010
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:14:28 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                    R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
  70) 4-ethyl toluene              17.90  105    694502      9.992 ppbV     100
  71) 1,3,5-trimethylbenzene       17.96  105    552700      9.930 ppbV      99
  72) tert-butylbenzene            18.31  119    576983      9.886 ppbV      99
  73) 1,2,4-trimethylbenzene       18.31  105    555213      9.986 ppbV     100
  74) Benzyl Chloride              18.43   91    430505     10.778 ppbV      99
  75) 1,3-dichlorobenzene          18.44  146    367109     10.167 ppbV     100
  76) 1,4-dichlorobenzene          18.50  146    356022     10.008 ppbV      98
  77) sec-butylbenzene             18.53  105    801982     10.003 ppbV      99
  78) p-isopropyltoluene           18.67  119    703470     10.009 ppbV      99
  79) 1,2-dichlorobenzene          18.79  146    338582     10.107 ppbV     100
  80) n-butylbenzene               19.02   91    646586      9.969 ppbV      98
  81) 1,2,4-trichlorobenzene       20.36  180    263959     10.720 ppbV      99
  82) naphthalene                  20.48  128    773847     10.679 ppbV      98
  83) 1,2,3-trichlorobenzene       20.73  180    253535     10.816 ppbV      98
  84) hexachlorobutadiene          20.81  225    209865     10.402 ppbV      98
 --------------------------------------------------------------------------

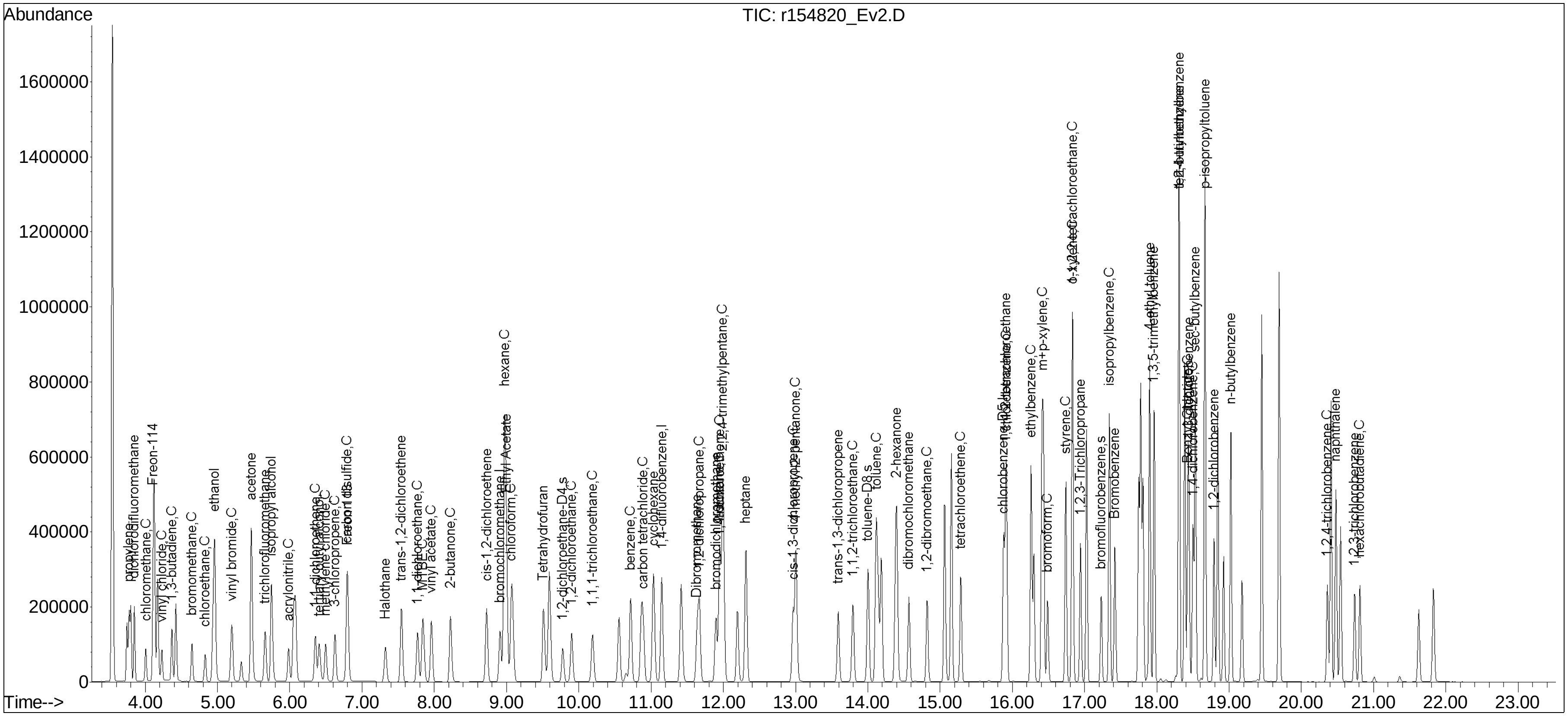
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154820_Ev2.D
Acq On    : 22 Dec 2017   7:25 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD010
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:14:28 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

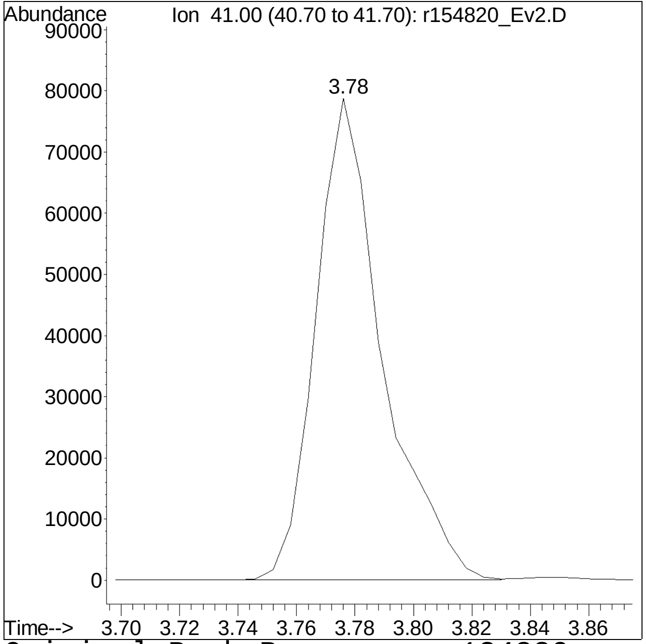
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

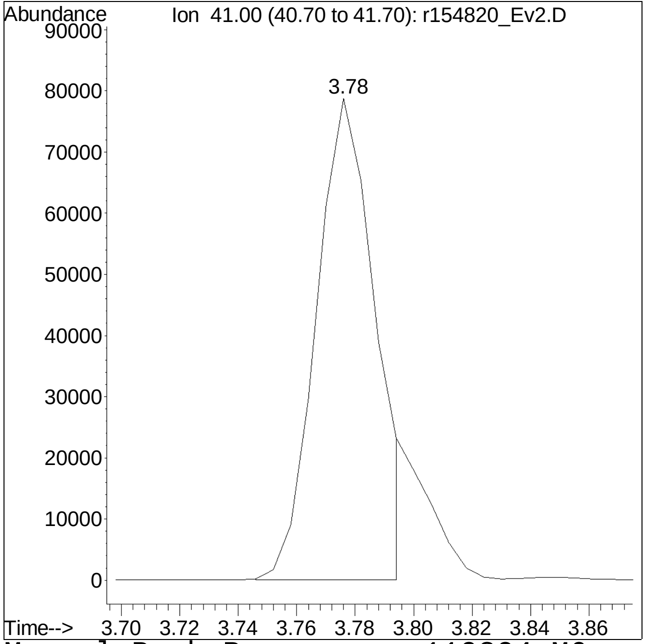


Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TSIM171222.M
Data File : r154820_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/22/2017 7:25 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 12/23/2017 10:03 am

Compound #2: propylene





Original Peak Response = 124880 Manual Peak Response = 110804 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154821_Ev2.D
  Acq On    : 22 Dec 2017   8:02 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD020
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:15:23 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   155952    10.000 ppbV     0.00
     Standard Area  =       152264                 Recovery   =  102.42%
    33) 1,4-difluorobenzene         11.15  114   369070    10.000 ppbV     0.00
     Standard Area  =       365341                 Recovery   =  101.02%
    51) chlorobenzene-D5            15.88   54    65260    10.000 ppbV     0.00
     Standard Area  =        65487                 Recovery   =   99.65%

   System Monitoring Compounds
    35) 1,2-dichloroethane-D4        9.78   65    75136     9.672 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   96.72%
    53) toluene-D8                  14.00   98   338446     9.781 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.81%
    67) bromofluorobenzene          17.23   95   200527    11.556 ppbV    0.00
     Spiked Amount     10.000   Range  70 - 130    Recovery   =  115.56%

   Target Compounds                                                   Qvalue
     2) propylene                    3.78   41    208940M6   17.630 ppbV
     3) dichlorodifluoromethane      3.85   85    313073     17.260 ppbV     100
     4) chloromethane                4.01   50    173745     17.239 ppbV      99
     5) Freon-114                    4.11   85    390959     17.380 ppbV     100
     6) vinyl chloride               4.23   62    167573     17.441 ppbV      99
     7) 1,3-butadiene                4.37   54    154693     17.730 ppbV      96
     8) bromomethane                 4.65   94    155822     17.289 ppbV      98
     9) chloroethane                 4.83   64     86368     17.325 ppbV      99
    10) ethanol                      4.96   31    667688     85.279 ppbV      98
    11) vinyl bromide                5.20  106    170596     17.745 ppbV      98
    12) acetone                      5.47   43   1002265     88.531 ppbV      96
    13) trichlorofluoromethane       5.66  101    259877     17.090 ppbV      98
    14) isopropyl alcohol            5.75   45    704512     44.916 ppbV     100
    15) acrylonitrile                5.98   53    151417     18.145 ppbV      98
    16) 1,1-dichloroethene           6.35   61    218793     17.513 ppbV     100
    17) tertiary butyl alcohol       6.40   59    281420     17.891 ppbV      97
    18) methylene chloride           6.49   49    217507     17.488 ppbV     100
    19) 3-chloropropene              6.63   41    253786     17.389 ppbV      98
    20) carbon disulfide             6.79   76    544703     16.713 ppbV #    92
    21) Freon 113                    6.79  101    296099     15.537 ppbV      93
    22) Halothane                    7.33  117    267951     20.531 ppbV      98
    23) trans-1,2-dichloroethene     7.54   61    316276     17.648 ppbV      99
    24) 1,1-dichloroethane           7.77   63    377128     17.589 ppbV     100
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154821_Ev2.D
  Acq On    : 22 Dec 2017   8:02 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD020
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:15:23 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) MTBE                           7.84   73    527386     18.092 ppbV      99
    26) vinyl acetate                  7.96   43    599308     18.450 ppbV     100
    27) 2-butanone                     8.22   43    553140     17.782 ppbV      98
    28) cis-1,2-dichloroethene         8.72   61    274960     17.534 ppbV      94
    29) Ethyl Acetate                  9.00   61     79476     17.774 ppbV      94
    30) chloroform                     9.07   83    323533     17.539 ppbV      99
    31) Tetrahydrofuran                9.50   42    356633     17.585 ppbV      99
    32) 1,2-dichloroethane             9.90   62    207292     17.273 ppbV      98
    34) hexane                         8.97   57    375022     17.814 ppbV      83
    36) 1,1,1-trichloroethane         10.19   97    282058     17.983 ppbV      96
    37) benzene                       10.72   78    692182     18.155 ppbV     100
    38) carbon tetrachloride          10.89  117    248609     18.425 ppbV     100
    39) cyclohexane                   11.03   56    404897     18.053 ppbV      98
    40) Dibromomethane                11.63   93    209343     17.647 ppbV #    96
    41) 1,2-dichloropropane           11.67   63    260640     17.668 ppbV      99
    42) bromodichloromethane          11.90   83    365098     18.442 ppbV     100
    43) 1,4-dioxane                   11.94   88    172226     18.443 ppbV      94
    44) trichloroethene               11.95  130    270945     18.287 ppbV      99
    45) 2,2,4-trimethylpentane        11.99   57   1255912     17.772 ppbV     100
    46) heptane                       12.31   43    582563     17.816 ppbV      99
    47) cis-1,3-dichloropropene       12.97   75    353175     18.790 ppbV      96
    48) 4-methyl-2-pentanone          13.00   43    680622     17.807 ppbV      99
    49) trans-1,3-dichloropropene     13.59   75    328152     19.025 ppbV      96
    50) 1,1,2-trichloroethane         13.79   97    261643     17.906 ppbV      99
    52) toluene                       14.12   91    806932     17.916 ppbV     100
    54) 2-hexanone                    14.40   43    639042     18.384 ppbV      96
    55) dibromochloromethane          14.57  129    360191     19.051 ppbV     100
    56) 1,2-dibromoethane             14.82  107    389122     18.496 ppbV     100
    57) tetrachloroethene             15.28  166    296747     18.610 ppbV     100
    58) 1,1,1,2-tetrachloroethane     15.91  131    267682     18.719 ppbV      98
    59) chlorobenzene                 15.92  112    632474     18.264 ppbV      98
    60) ethylbenzene                  16.26   91   1030021     17.967 ppbV      99
    61) m+p-xylene                    16.42   91   1658117     35.400 ppbV      98
    62) bromoform                     16.49  173    303352     19.756 ppbV      99
    63) styrene                       16.74  104    702222     18.468 ppbV      98
    64) 1,1,2,2-tetrachloroethane     16.83   83    596003     18.151 ppbV     100
    65) o-xylene                      16.83   91    837464     17.659 ppbV      98
    66) 1,2,3-Trichloropropane        16.94   75    476271     18.229 ppbV      98
    68) isopropylbenzene              17.34  105   1111510     18.261 ppbV     100
    69) Bromobenzene                  17.42   77    611701     18.364 ppbV     100
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154821_Ev2.D
Acq On    : 22 Dec 2017   8:02 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD020
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:15:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                    R.T. QIon  Response  Conc Units Dev(Min)
 -------------------------------------------------------------------------
  70) 4-ethyl toluene              17.90  105   1256448     18.110 ppbV      99
  71) 1,3,5-trimethylbenzene       17.97  105   1003003     18.053 ppbV      95
  72) tert-butylbenzene            18.31  119   1038425     17.824 ppbV      97
  73) 1,2,4-trimethylbenzene       18.31  105    985923     17.765 ppbV      99
  74) Benzyl Chloride              18.43   91    826967     20.742 ppbV      99
  75) 1,3-dichlorobenzene          18.44  146    663465     18.408 ppbV      98
  76) 1,4-dichlorobenzene          18.50  146    658843     18.554 ppbV      97
  77) sec-butylbenzene             18.53  105   1451113     18.132 ppbV      98
  78) p-isopropyltoluene           18.67  119   1266557     18.053 ppbV      99
  79) 1,2-dichlorobenzene          18.79  146    619555     18.528 ppbV     100
  80) n-butylbenzene               19.02   91   1154933     17.840 ppbV      98
  81) 1,2,4-trichlorobenzene       20.36  180    475109     19.330 ppbV      99
  82) naphthalene                  20.48  128   1357747     18.770 ppbV      98
  83) 1,2,3-trichlorobenzene       20.74  180    445527     19.040 ppbV      99
  84) hexachlorobutadiene          20.81  225    362688     18.009 ppbV      98
 -------------------------------------------------------------------------

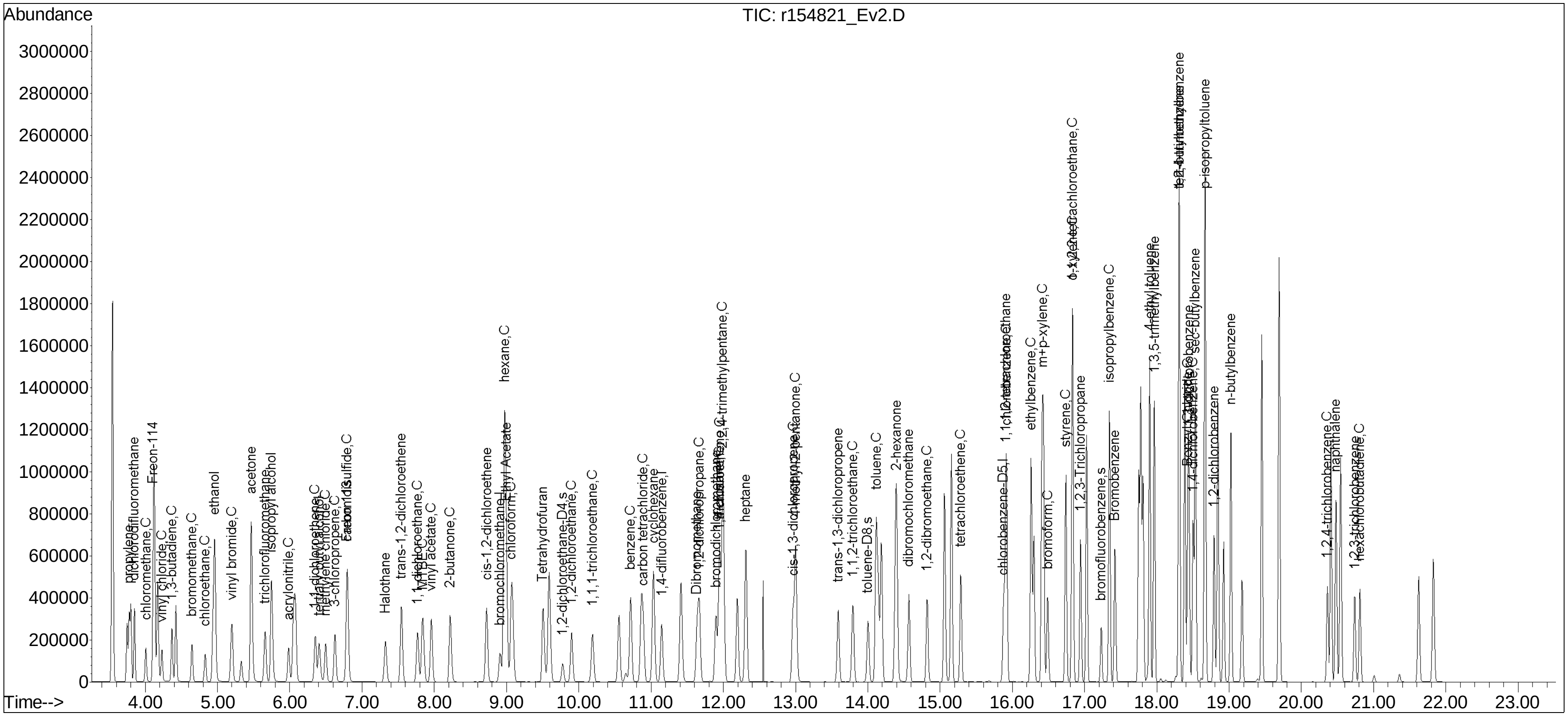
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154821_Ev2.D
Acq On    : 22 Dec 2017   8:02 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD020
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:15:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

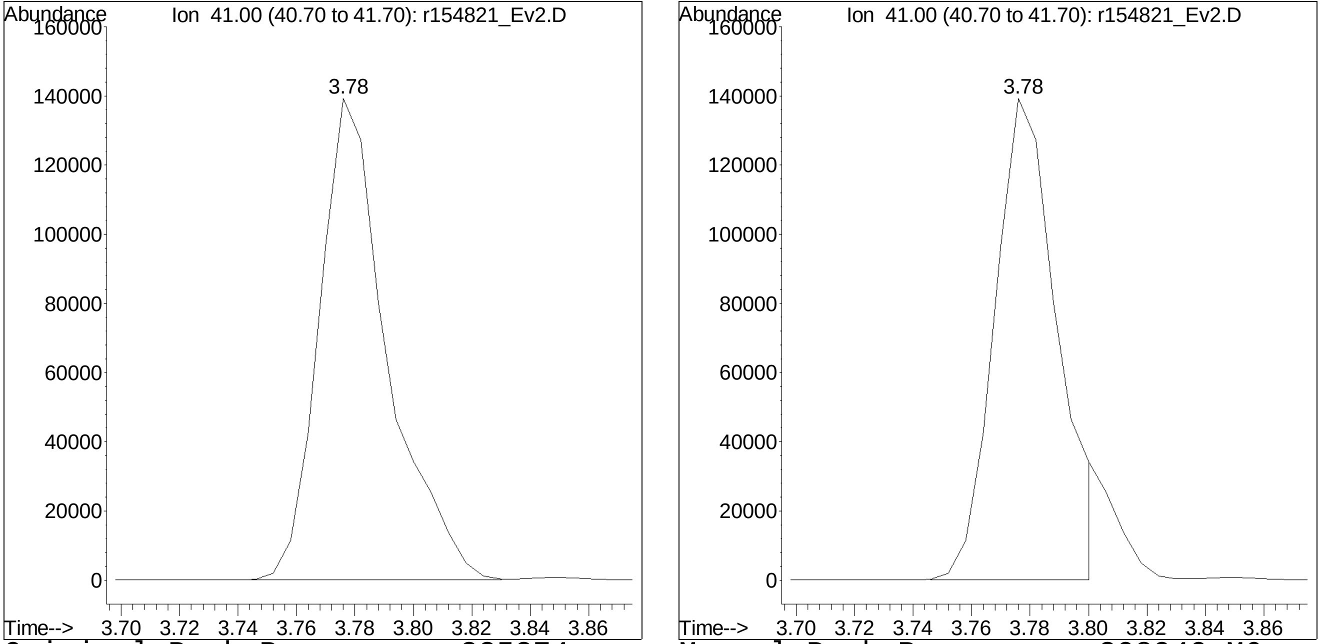
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\   QMethod     : TSIM171222.M
Data File   : r154821_Ev2.D                 Operator    : AIRLAB15:RY
Date Inj'd  : 12/22/2017  8:02 PM           Instrument  :
Sample      : ITO15-SIMSTD020               Quant Date  : 12/23/2017 10:03 am
```

Compound #2: propylene



Original Peak Response = 225274   Manual Peak Response = 208940 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154822_Ev2.D
Acq On    : 22 Dec 2017   8:41 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD050
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:16:15 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                    R.T. QIon  Response  Conc Units Dev(Min)
 ------------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane            8.92   49   161416    10.000 ppbV     0.00
   Standard Area  =       152264                  Recovery   =  106.01%
  33) 1,4-difluorobenzene          11.15  114   373964    10.000 ppbV     0.00
   Standard Area  =       365341                  Recovery   =  102.36%
  51) chlorobenzene-D5             15.88   54    65754    10.000 ppbV   # 0.00
   Standard Area  =        65487                  Recovery   =  100.41%

 System Monitoring Compounds
  35) 1,2-dichloroethane-D4         9.78   65    73001     9.274 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =   92.74%
  53) toluene-D8                   14.01   98   338806     9.718 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =   97.18%
  67) bromofluorobenzene           17.23   95   191078    10.929 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  109.29%

 Target Compounds                                                   Qvalue
   2) propylene                     3.78   41    487606M6   39.750 ppbV
   3) dichlorodifluoromethane       3.85   85    734720     39.134 ppbV      99
   4) chloromethane                 4.01   50    414154     39.702 ppbV      98
   5) Freon-114                     4.11   85    907175     38.963 ppbV      99
   6) vinyl chloride                4.23   62    407676     40.995 ppbV      99
   7) 1,3-butadiene                 4.37   54    376740     41.718 ppbV      94
   8) bromomethane                  4.65   94    376716     40.382 ppbV     100
   9) chloroethane                  4.83   64    206367     39.996 ppbV      98
  10) ethanol                       4.97   31   1568050    193.497 ppbV      95
  11) vinyl bromide                 5.21  106    399740     40.173 ppbV      98
  12) acetone                       5.47   43   2209862    188.593 ppbV #    92
  13) trichlorofluoromethane        5.66  101    608199     38.643 ppbV      99
  14) isopropyl alcohol             5.75   45   1610483     99.200 ppbV      99
  15) acrylonitrile                 5.99   53    373048     43.190 ppbV      99
  16) 1,1-dichloroethene            6.36   61    518258     40.080 ppbV      99
  17) tertiary butyl alcohol        6.41   59    682724     41.935 ppbV      95
  18) methylene chloride            6.50   49    512472     39.809 ppbV      96
  19) 3-chloropropene               6.63   41    591362     39.147 ppbV      97
  20) carbon disulfide              6.80   76   1247725     36.988 ppbV #    91
  21) Freon 113                     6.80  101    676267     34.285 ppbV      90
  22) Halothane                     7.33  117    662335     49.032 ppbV      97
  23) trans-1,2-dichloroethene      7.55   61    750035     40.435 ppbV      96
  24) 1,1-dichloroethane            7.78   63    895169     40.338 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154822_Ev2.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:16:15 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) MTBE                           7.84   73   1286160     42.627 ppbV      99
    26) vinyl acetate                  7.97   43   1455971     43.305 ppbV      99
    27) 2-butanone                     8.22   43   1328036     41.247 ppbV      96
    28) cis-1,2-dichloroethene         8.72   61    656126     40.424 ppbV      98
    29) Ethyl Acetate                  9.01   61    191195     41.311 ppbV      87
    30) chloroform                     9.07   83    779230     40.812 ppbV      98
    31) Tetrahydrofuran                9.51   42    849967     40.491 ppbV      91
    32) 1,2-dichloroethane             9.91   62    491367     39.559 ppbV      97
    34) hexane                         8.97   57    873687     40.958 ppbV      95
    36) 1,1,1-trichloroethane         10.19   97    675444     42.501 ppbV      97
    37) benzene                       10.73   78   1677816     43.432 ppbV      99
    38) carbon tetrachloride          10.90  117    612856     44.826 ppbV      99
    39) cyclohexane                   11.03   56    975613     42.930 ppbV      98
    40) Dibromomethane                11.64   93    504393     41.962 ppbV #    93
    41) 1,2-dichloropropane           11.68   63    617933     41.340 ppbV      98
    42) bromodichloromethane          11.90   83    893120     44.523 ppbV     100
    43) 1,4-dioxane                   11.94   88    419759     44.363 ppbV      92
    44) trichloroethene               11.96  130    665848     44.352 ppbV      97
    45) 2,2,4-trimethylpentane        12.00   57   2943721     41.111 ppbV      99
    46) heptane                       12.32   43   1359981     41.047 ppbV      96
    47) cis-1,3-dichloropropene       12.97   75    874012     45.891 ppbV      95
    48) 4-methyl-2-pentanone          13.00   43   1593572     41.146 ppbV      97
    49) trans-1,3-dichloropropene     13.59   75    811320     46.422 ppbV      96
    50) 1,1,2-trichloroethane         13.80   97    634824     42.878 ppbV      98
    52) toluene                       14.12   91   1915846     42.217 ppbV     100
    54) 2-hexanone                    14.40   43   1486523     42.444 ppbV      95
    55) dibromochloromethane          14.57  129    872344     45.792 ppbV      97
    56) 1,2-dibromoethane             14.82  107    939101     44.302 ppbV      98
    57) tetrachloroethene             15.29  166    720992     44.876 ppbV      98
    58) 1,1,1,2-tetrachloroethane     15.91  131    647503     44.939 ppbV      98
    59) chlorobenzene                 15.93  112   1515808     43.443 ppbV      98
    60) ethylbenzene                  16.27   91   2415511     41.818 ppbV      94
    61) m+p-xylene                    16.43   91   3804735     80.619 ppbV      95
    62) bromoform                     16.49  173    748346     48.371 ppbV      99
    63) styrene                       16.74  104   1687863     44.057 ppbV      96
    64) 1,1,2,2-tetrachloroethane     16.83   83   1369235     41.386 ppbV      99
    65) o-xylene                      16.84   91   1895838     39.675 ppbV      93
    66) 1,2,3-Trichloropropane        16.95   75   1160352     44.077 ppbV      97
    68) isopropylbenzene              17.35  105   2607937     42.523 ppbV      95
    69) Bromobenzene                  17.43   77   1479521     44.084 ppbV      98
```

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154822_Ev2.D
  Acq On    : 22 Dec 2017   8:41 PM
  Operator  : AIRLAB15:RY
  Sample    : ITO15-SIMSTD050
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 10:16:15 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:02:46 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    70) 4-ethyl toluene               17.90  105   2930601     41.924 ppbV      99
    71) 1,3,5-trimethylbenzene        17.97  105   2370270     42.342 ppbV      95
    72) tert-butylbenzene             18.31  119   2300403     39.189 ppbV      96
    73) 1,2,4-trimethylbenzene        18.32  105   2195412     39.261 ppbV      95
    74) Benzyl Chloride               18.43   91   2009132     50.015 ppbV      92
    75) 1,3-dichlorobenzene           18.45  146   1566920     43.147 ppbV      98
    76) 1,4-dichlorobenzene           18.51  146   1597641     44.654 ppbV      98
    77) sec-butylbenzene              18.53  105   3357290     41.635 ppbV      96
    78) p-isopropyltoluene            18.67  119   2791022     39.484 ppbV      96
    79) 1,2-dichlorobenzene           18.80  146   1508376     44.770 ppbV      99
    80) n-butylbenzene                19.02   91   2697200     41.349 ppbV      96
    81) 1,2,4-trichlorobenzene        20.37  180   1206304     48.709 ppbV      98
    82) naphthalene                   20.49  128   3314140     45.472 ppbV      97
    83) 1,2,3-trichlorobenzene        20.75  180   1152216     48.872 ppbV      99
    84) hexachlorobutadiene           20.82  225    898748     44.293 ppbV      97
   --------------------------------------------------------------------------

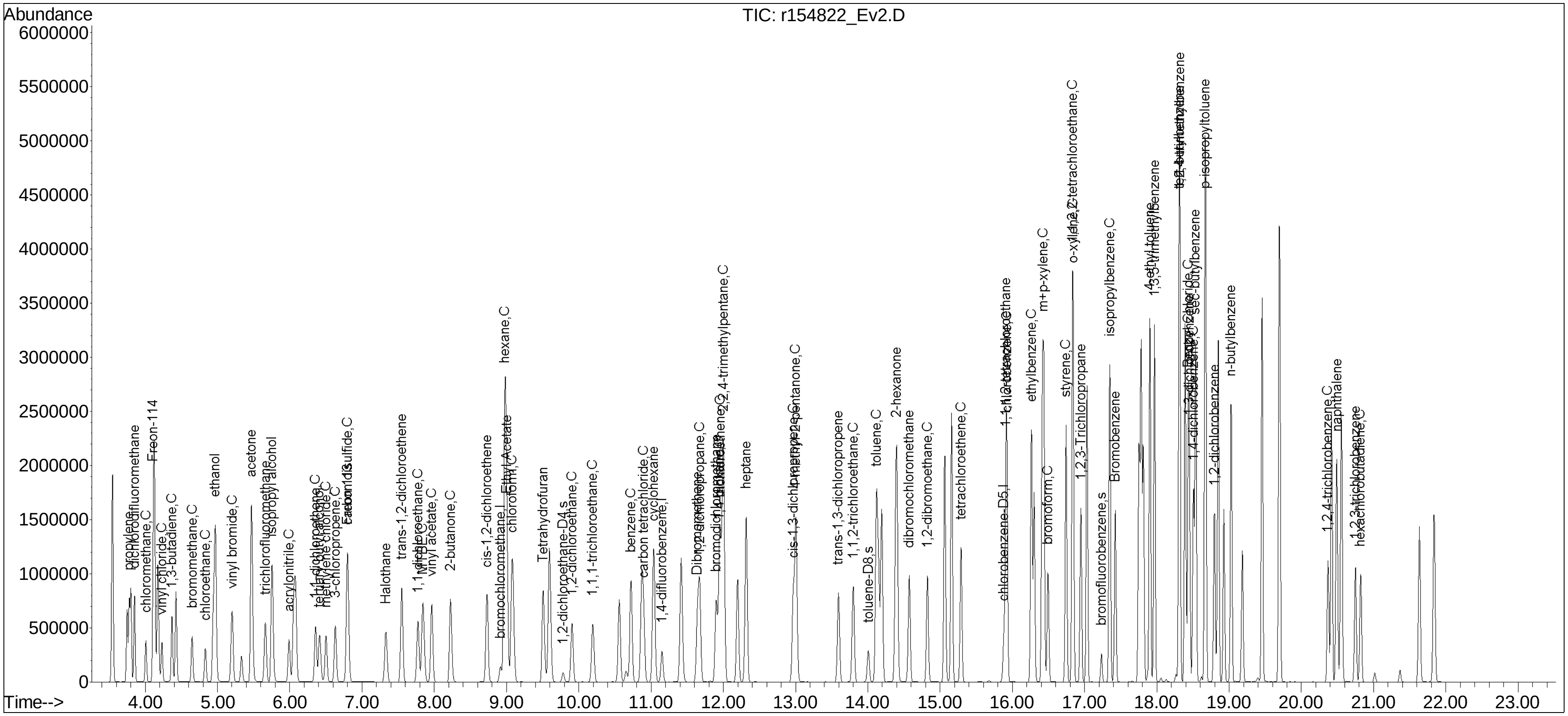
   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
                 Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154822_Ev2.D
Acq On    : 22 Dec 2017   8:41 PM
Operator  : AIRLAB15:RY
Sample    : ITO15-SIMSTD050
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 10:16:15 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:02:46 2017
Response via : Initial Calibration

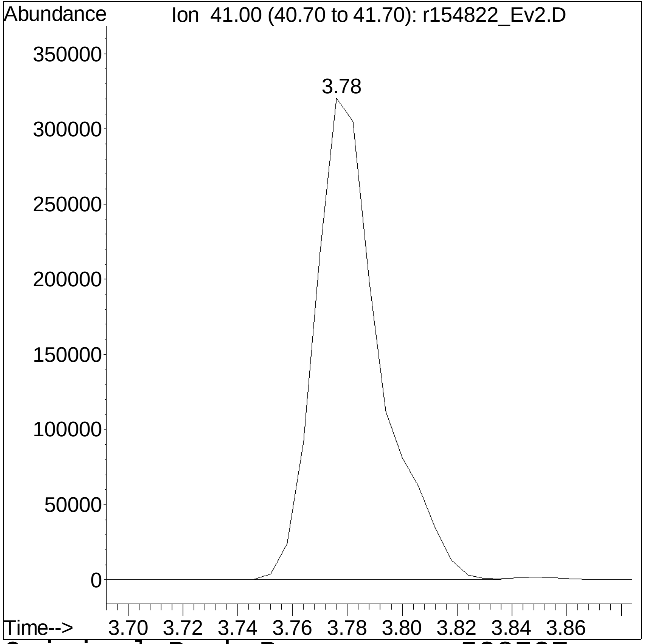
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

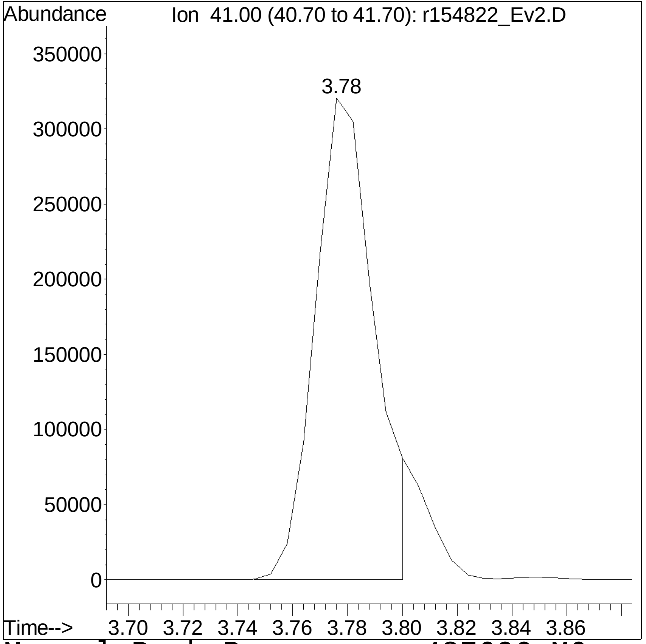


Manual Integration/Negative Proof Report

```
Data Path    : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File    : r154822_Ev2.D              Operator    : AIRLAB15:RY
Date Inj'd   : 12/22/2017  8:41 PM        Instrument  :
Sample       : ITO15-SIMSTD050            Quant Date  : 12/23/2017 10:04 am
```

Compound #2: propylene





Original Peak Response = 528727   Manual Peak Response = 487606 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154827_Ev2.D
  Acq On    : 23 Dec 2017  10:48 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 11:23:37 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      AvgRF   CCRF      %Dev Area% Dev(min)
  ----------------------------------------------------------------------------
  1 I    bromochloromethane             1.000   1.000       0.0   97   0.02
  2      propylene                      0.779   0.736       5.5   94   0.01
  3      dichlorodifluoromethane        1.172   1.093       6.7   91   0.01
  4 C    chloromethane                  0.655   0.577      11.9   87   0.02
  5      Freon-114                      1.472   1.370       6.9   92   0.01
  6 C    vinyl chloride                 0.642   0.571      11.1   90   0.02
  7 C    1,3-butadiene                  0.558   0.549       1.6   95   0.01
  8 C    bromomethane                   0.593   0.538       9.3   90   0.02
  9 C    chloroethane                   0.335   0.292      12.8   89   0.02
 10      ethanol                        0.482   0.438       9.1   85   0.02
 11 C    vinyl bromide                  0.653   0.564      13.6   89   0.02
 12      acetone                        0.787   0.720       8.5   96   0.02
 13      trichlorofluoromethane         1.001   0.886      11.5   88   0.02
 14      isopropyl alcohol              1.130   1.031       8.8  100   0.02
 15 C    acrylonitrile                  0.562   0.484      13.9   88   0.02
 16 C    1,1-dichloroethene             0.806   0.750       6.9   91   0.02
 17      tertiary butyl alcohol         1.126   0.905      19.6   87   0.02
 18 C    methylene chloride             0.766   0.728       5.0   89   0.02
 19 C    3-chloropropene                0.898   0.895       0.3   93   0.02
 20 C    carbon disulfide               1.879   1.714       8.8   80   0.02
 21      Freon 113                      1.107   1.017       8.1   81   0.02
 22      Halothane                      0.922   0.992      -7.6  115   0.03
 23      trans-1,2-dichloroethene       1.141   1.030       9.7   87   0.02
 24 C    1,1-dichloroethane             1.372   1.259       8.2   89   0.02
 25 C    MTBE                           1.833   1.838      -0.3   96   0.02
 26 C    vinyl acetate                  1.990   2.153      -8.2  100   0.02
 27 C    2-butanone                     1.947   1.856       4.7   90   0.03
 28      cis-1,2-dichloroethene         0.987   0.937       5.1   91   0.03
 29      Ethyl Acetate                  0.274   0.277      -1.1   94   0.03
 30 C    chloroform                     1.231   1.141       7.3   94   0.03
 31      Tetrahydrofuran                1.235   1.158       6.2   87   0.03
 32 C    1,2-dichloroethane             0.781   0.681      12.8   86   0.02

 33 I    1,4-difluorobenzene            1.000   1.000       0.0   99   0.02
 34 C    hexane                         0.554   0.534       3.6   93   0.03
 35 s    1,2-dichloroethane-D4          0.209   0.192       8.1   91   0.03
 36 C    1,1,1-trichloroethane          0.431   0.389       9.7   91   0.03
 37 C    benzene                        1.070   0.966       9.7   93   0.03
 38 C    carbon tetrachloride           0.361   0.342       5.3   93   0.02
```

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154827_Ev2.D
  Acq On    : 23 Dec 2017  10:48 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 11:23:37 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                       AvgRF   CCRF      %Dev Area% Dev(min)
  -----------------------------------------------------------------------------
 39      cyclohexane                     0.602   0.577       4.2   94   0.02
 40      Dibromomethane                  0.362   0.272      24.9   84   0.03
 41 C    1,2-dichloropropane             0.401   0.361      10.0   90   0.02
 42      bromodichloromethane            0.528   0.512       3.0   95   0.02
 43 C    1,4-dioxane                     0.246   0.243       1.2   95   0.03
 44 C    trichloroethene                 0.411   0.381       7.3   94   0.03
 45 C    2,2,4-trimethylpentane          1.865   1.800       3.5   93   0.03
 46      heptane                         0.872   0.815       6.5   91   0.03
 47 C    cis-1,3-dichloropropene         0.493   0.511      -3.7  100   0.02
 48 C    4-methyl-2-pentanone            0.997   0.944       5.3   91   0.03
 49      trans-1,3-dichloropropene       0.451   0.401      11.1   85   0.02
 50 C    1,1,2-trichloroethane           0.397   0.378       4.8   95   0.03

 51 I    chlorobenzene-D5                1.000   1.000       0.0   94   0.02
 52 C    toluene                         6.933   6.743       2.7   92   0.03
 53 s    toluene-D8                      5.176   5.331      -3.0   94   0.03
 54      2-hexanone                      5.013   4.987       0.5   88   0.03
 55      dibromochloromethane            2.801   3.025      -8.0   98   0.03
 56 C    1,2-dibromoethane               3.166   3.263      -3.1   95   0.03
 57 C    tetrachloroethene               2.516   2.476       1.6   95   0.03
 58      1,1,1,2-tetrachloroethane       2.131   2.037       4.4   87   0.03
 59 C    chlorobenzene                   5.313   5.400      -1.6   95   0.02
 60 C    ethylbenzene                    8.450   8.626      -2.1   92   0.02
 61 C    m+p-xylene                      6.882   6.980      -1.4   91   0.02
 62 C    bromoform                       2.124   2.467     -16.1   98   0.02
 63 C    styrene                         5.551   5.817      -4.8   94   0.00
 64 C    1,1,2,2-tetrachloroethane       4.911   5.058      -3.0   94   0.00
 65 C    o-xylene                        6.960   7.064      -1.5   91   0.00
 66      1,2,3-Trichloropropane          3.963   3.611       8.9   85   0.00
 67 s    bromofluorobenzene              2.788   2.821      -1.2   99   0.00
 68 C    isopropylbenzene                9.051   8.853       2.2   89  -0.02
 69      Bromobenzene                    5.077   4.727       6.9   87  -0.02
 70      4-ethyl toluene                 9.972  10.388      -4.2   92  -0.03
 71      1,3,5-trimethylbenzene          7.952   8.377      -5.3   92  -0.03
 72      tert-butylbenzene               8.401   8.066       4.0   85  -0.05
 73      1,2,4-trimethylbenzene          7.813   8.443      -8.1   93  -0.05
 74 C    Benzyl Chloride                 5.205   6.154     -18.2   94  -0.05
 75      1,3-dichlorobenzene             5.315   5.518      -3.8   94  -0.05
 76 C    1,4-dichlorobenzene             5.266   5.425      -3.0   94  -0.05
```

```
                        Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154827_Ev2.D
  Acq On    : 23 Dec 2017  10:48 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 11:23:37 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      AvgRF   CCRF      %Dev Area% Dev(min)
  ------------------------------------------------------------------------------
 77      sec-butylbenzene             11.489  11.289       1.7   86  -0.06
 78      p-isopropyltoluene            9.930   9.211       7.2   80  -0.07
 79      1,2-dichlorobenzene           4.896   5.163      -5.5   94  -0.07
 80      n-butylbenzene                8.953   9.198      -2.7   87  -0.07
 81 C    1,2,4-trichlorobenzene        3.405   3.909     -14.8   97  -0.10
 82      naphthalene                   9.689  10.306      -6.4   87  -0.11
 83      1,2,3-trichlorobenzene        3.231   3.450      -6.8   90  -0.11
 84 C    hexachlorobutadiene           2.843   3.186     -12.1   97  -0.10
 ---------------------------------------------------------------------------
          * Evaluation of CC level amount vs concentration.
    (#) = Out of Range               SPCC's out = 0  CCC's out = 0
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154827_Ev2.D
Acq On    : 23 Dec 2017  10:48 AM
Operator  : AIRLAB15:RY
Sample    : CTO15-SIMSTD5.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 11:23:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 -------------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane             8.93   49   148022    10.000 ppbV     0.02
   Standard Area  =       152264                  Recovery   =   97.21%
  33) 1,4-difluorobenzene           11.17  114   362731    10.000 ppbV     0.02
   Standard Area  =       365341                  Recovery   =   99.29%
  51) chlorobenzene-D5              15.89   54    61414    10.000 ppbV     0.02
   Standard Area  =        65487                  Recovery   =   93.78%

 System Monitoring Compounds
  35) 1,2-dichloroethane-D4          9.80   65    69679     9.200 ppbV    0.03
   Spiked Amount     10.000   Range  70 - 130    Recovery   =   92.00%
  53) toluene-D8                    14.03   98   327422    10.299 ppbV    0.03
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  102.99%
  67) bromofluorobenzene            17.22   95   173219    10.116 ppbV    0.00
   Spiked Amount     10.000   Range  70 - 130    Recovery   =  101.16%

 Target Compounds                                                   Qvalue
   2) propylene                      3.79   41     54486M6    4.726 ppbV
   3) dichlorodifluoromethane        3.86   85     80913      4.663 ppbV     100
   4) chloromethane                  4.02   50     42741      4.409 ppbV      97
   5) Freon-114                      4.12   85    101362      4.653 ppbV     100
   6) vinyl chloride                 4.24   62     42232      4.445 ppbV     100
   7) 1,3-butadiene                  4.38   54     40620      4.916 ppbV      99
   8) bromomethane                   4.66   94     39812      4.535 ppbV      98
   9) chloroethane                   4.84   64     21616      4.362 ppbV      99
  10) ethanol                        4.98   31    161929     22.717 ppbV      96
  11) vinyl bromide                  5.22  106     41772      4.321 ppbV      98
  12) acetone                        5.49   43    266287     22.847 ppbV      95
  13) trichlorofluoromethane         5.68  101     65598      4.427 ppbV      99
  14) isopropyl alcohol              5.76   45    190773     11.406 ppbV      99
  15) acrylonitrile                  6.00   53     35820      4.308 ppbV      97
  16) 1,1-dichloroethene             6.37   61     55473      4.649 ppbV      98
  17) tertiary butyl alcohol         6.43   59     66965      4.019 ppbV      96
  18) methylene chloride             6.51   49     53844      4.748 ppbV      96
  19) 3-chloropropene                6.64   41     66246      4.982 ppbV      96
  20) carbon disulfide               6.81   76    126836      4.561 ppbV      97
  21) Freon 113                      6.81  101     75235      4.591 ppbV      93
  22) Halothane                      7.34  117     73415      5.378 ppbV      98
  23) trans-1,2-dichloroethene       7.56   61     76200      4.511 ppbV     100
  24) 1,1-dichloroethane             7.78   63     93213      4.588 ppbV     100
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
  Data File : r154827_Ev2.D
  Acq On    : 23 Dec 2017  10:48 AM
  Operator  : AIRLAB15:RY
  Sample    : CTO15-SIMSTD5.0
  Misc      : WG1075925
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Dec 23 11:23:37 2017
  Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
  Sub List     : Default - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    25) MTBE                            7.87   73    136025      5.013 ppbV      98
    26) vinyl acetate                   7.97   43    159362      5.410 ppbV     100
    27) 2-butanone                      8.24   43    137364      4.767 ppbV      97
    28) cis-1,2-dichloroethene          8.74   61     69338      4.746 ppbV      95
    29) Ethyl Acetate                   9.03   61     20465      5.037 ppbV      83
    30) chloroform                      9.08   83     84428      4.633 ppbV      99
    31) Tetrahydrofuran                 9.53   42     85738M4    4.692 ppbV
    32) 1,2-dichloroethane              9.92   62     50367      4.357 ppbV      97
    34) hexane                          8.99   57     96790      4.813 ppbV      97
    36) 1,1,1-trichloroethane          10.21   97     70640      4.514 ppbV      97
    37) benzene                        10.74   78    175223      4.516 ppbV      99
    38) carbon tetrachloride           10.92  117     62100      4.742 ppbV      99
    39) cyclohexane                    11.05   56    104690      4.798 ppbV      97
    40) Dibromomethane                 11.66   93     49394      3.759 ppbV #    94
    41) 1,2-dichloropropane            11.68   63     65400      4.495 ppbV      99
    42) bromodichloromethane           11.92   83     92904      4.854 ppbV     100
    43) 1,4-dioxane                    11.97   88     44054      4.945 ppbV      97
    44) trichloroethene                11.98  130     69140      4.633 ppbV      99
    45) 2,2,4-trimethylpentane         12.02   57    326486      4.827 ppbV      98
    46) heptane                        12.33   43    147781      4.671 ppbV      97
    47) cis-1,3-dichloropropene        12.98   75     92757      5.184 ppbV      95
    48) 4-methyl-2-pentanone           13.03   43    171288      4.734 ppbV      98
    49) trans-1,3-dichloropropene      13.61   75     72696      4.441 ppbV      96
    50) 1,1,2-trichloroethane          13.82   97     68477      4.751 ppbV      98
    52) toluene                        14.13   91    207044      4.863 ppbV     100
    54) 2-hexanone                     14.43   43    153142      4.974 ppbV      97
    55) dibromochloromethane           14.59  129     92877      5.400 ppbV      99
    56) 1,2-dibromoethane              14.84  107    100199      5.153 ppbV      98
    57) tetrachloroethene              15.31  166     76026      4.920 ppbV      98
    58) 1,1,1,2-tetrachloroethane      15.93  131     62552      4.780 ppbV      97
    59) chlorobenzene                  15.93  112    165822      5.082 ppbV     100
    60) ethylbenzene                   16.27   91    264874      5.104 ppbV      98
    61) m+p-xylene                     16.43   91    428662     10.142 ppbV      97
    62) bromoform                      16.50  173     75764      5.809 ppbV      99
    63) styrene                        16.74  104    178637      5.240 ppbV      99
    64) 1,1,2,2-tetrachloroethane      16.82   83    155309      5.149 ppbV      98
    65) o-xylene                       16.83   91    216926      5.075 ppbV      99
    66) 1,2,3-Trichloropropane         16.94   75    110895      4.556 ppbV      98
    68) isopropylbenzene               17.32  105    271864      4.891 ppbV      99
    69) Bromobenzene                   17.40   77    145167      4.656 ppbV     100
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154827_Ev2.D
Acq On    : 23 Dec 2017  10:48 AM
Operator  : AIRLAB15:RY
Sample    : CTO15-SIMSTD5.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 11:23:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\r154819_Ev2.D
Sub List     : Default - All compounds listed

        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
  70) 4-ethyl toluene               17.87  105    318985      5.208 ppbV      99
  71) 1,3,5-trimethylbenzene        17.93  105    257227      5.267 ppbV      97
  72) tert-butylbenzene             18.26  119    247693      4.801 ppbV      99
  73) 1,2,4-trimethylbenzene        18.26  105    259266      5.403 ppbV      95
  74) Benzyl Chloride               18.38   91    188957      5.911 ppbV      98
  75) 1,3-dichlorobenzene           18.39  146    169436M3    5.190 ppbV
  76) 1,4-dichlorobenzene           18.45  146    166591      5.151 ppbV      95
  77) sec-butylbenzene              18.48  105    346646      4.913 ppbV      97
  78) p-isopropyltoluene            18.60  119    282849      4.638 ppbV      99
  79) 1,2-dichlorobenzene           18.73  146    158544      5.273 ppbV      97
  80) n-butylbenzene                18.95   91    282442      5.137 ppbV      98
  81) 1,2,4-trichlorobenzene        20.26  180    120046      5.742 ppbV      97
  82) naphthalene                   20.38  128    316458      5.318 ppbV     100
  83) 1,2,3-trichlorobenzene        20.63  180    105953      5.340 ppbV      99
  84) hexachlorobutadiene           20.71  225     97839      5.604 ppbV      98
 ---------------------------------------------------------------------------

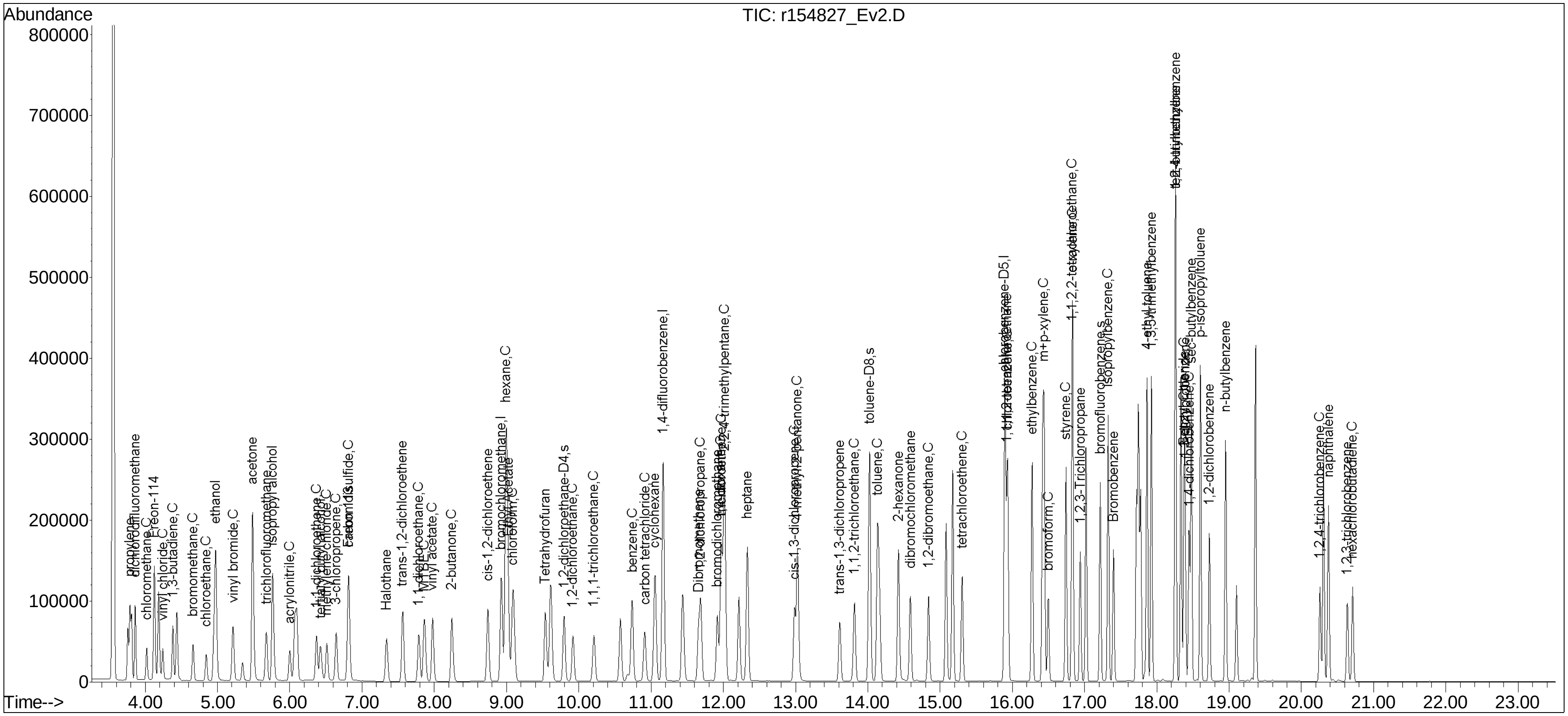
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

Quantitation Report   (QT Reviewed)

```
Data Path : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\
Data File : r154827_Ev2.D
Acq On    : 23 Dec 2017  10:48 AM
Operator  : AIRLAB15:RY
Sample    : CTO15-SIMSTD5.0
Misc      : WG1075925
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Dec 23 11:23:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\171222SIM_ICAL\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

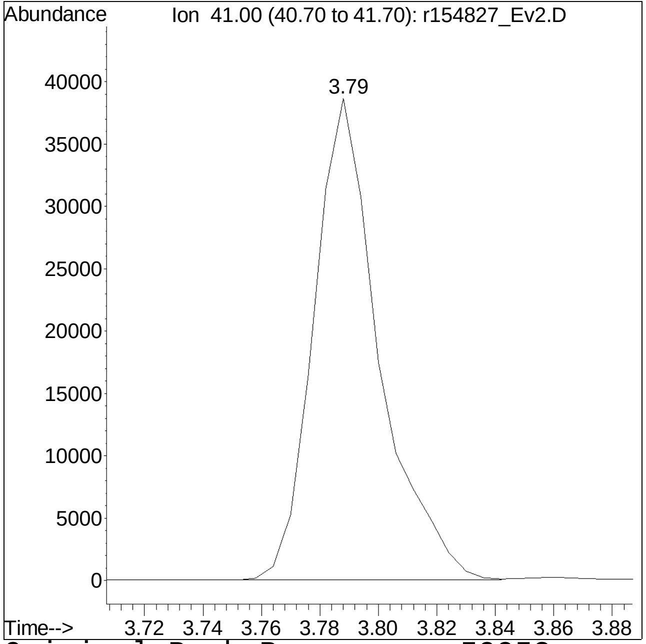
Sub List     : Default - All compounds listed7\171222SIM_ICAL\r154819_Ev2.D
```

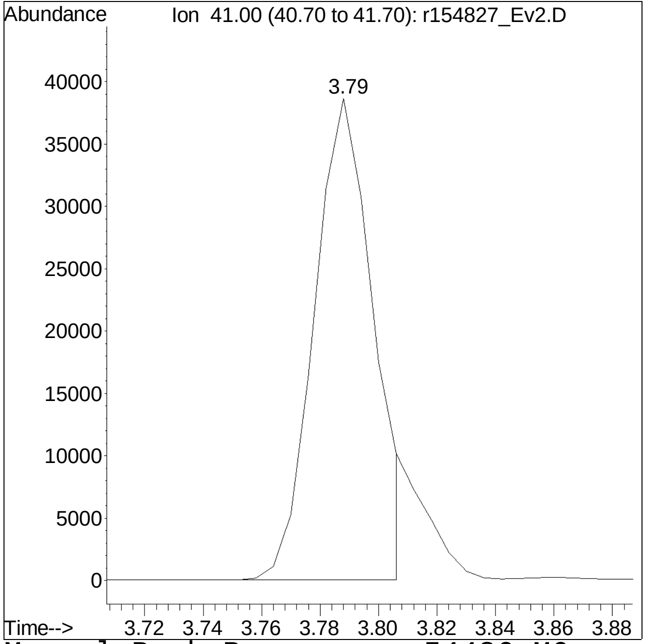


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154827_Ev2.D             Operator    : AIRLAB15:RY
Date Inj'd  : 12/23/2017 10:48 AM       Instrument  :
Sample      : CTO15-SIMSTD5.0           Quant Date  : 12/23/2017 11:22 am
```

Compound #2: propylene





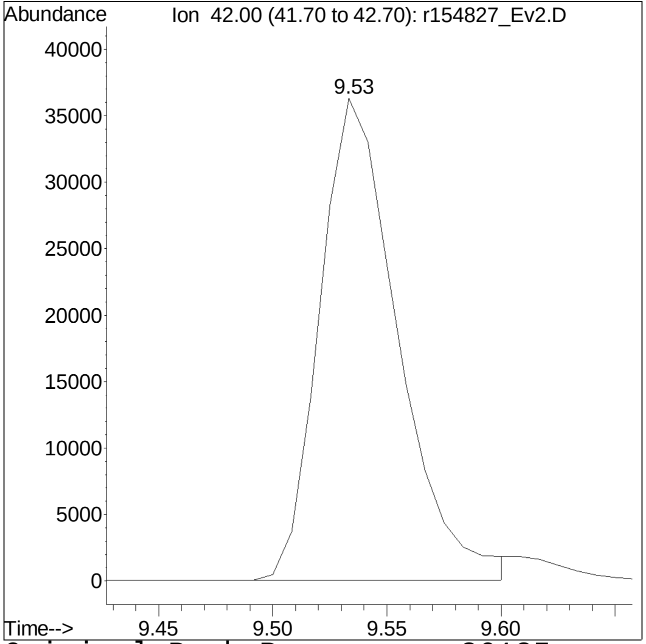
Original Peak Response = 59952 Manual Peak Response = 54486 M6

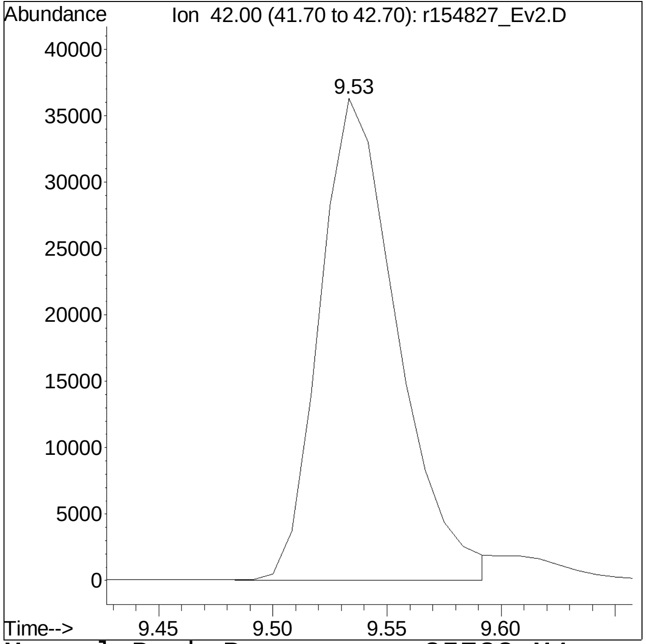
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TSIM171222.M
Data File : r154827_Ev2.D Operator : AIRLAB15:RY
Date Inj'd : 12/23/2017 10:48 AM Instrument :
Sample : CTO15-SIMSTD5.0 Quant Date : 12/23/2017 11:22 am

Compound #31: Tetrahydrofuran





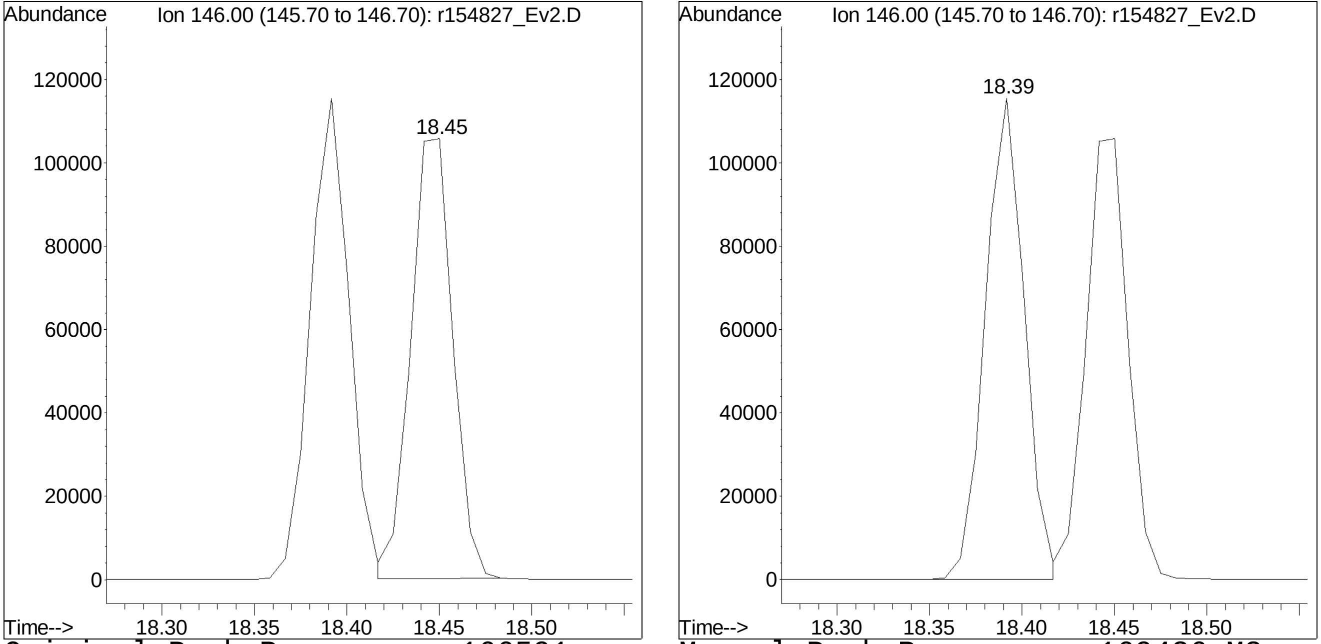
Original Peak Response = 86135 Manual Peak Response = 85738 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\
Data File : r154827_Ev2.D
Date Inj'd : 12/23/2017 10:48 AM
Sample : CTO15-SIMSTD5.0
QMethod : TSIM171222.M
Operator : AIRLAB15:RY
Instrument :
Quant Date : 12/23/2017 11:22 am

Compound #75: 1,3-dichlorobenzene



Original Peak Response = 166591 Manual Peak Response = 169436 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Continuing Calibration

Continuing Calibration
Form 7

Client	: Sterling Environmental Eng	**Lab Number**	: L1747754	
Project Name	: EHS 2017 IA	**Project Number**	: 28014	
Instrument ID	: AIRLAB15	**Calibration Date**	: 01/02/18 12:12	
Lab File ID	: R154990_EV2	**Init. Calib. Date(s)**	: 12/22/17	12/22/17
Sample No	: WG1078229-2	**Init. Calib. Times**	: 14:54	20:41
Channel	:			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
bromochloromethane	1	1	-	0	30	85	0
propylene	0.779	0.732	-	6	30	82	0
dichlorodifluoromethane	1.172	1.079	-	7.9	30	79	0
chloromethane	0.655	0.532	-	18.8	30	70	0
Freon-114	1.472	1.278	-	13.2	30	76	0
vinyl chloride	0.642	0.559	-	12.9	30	77	0
1,3-butadiene	0.558	0.491	-	12	30	75	0
bromomethane	0.593	0.532	-	10.3	30	79	0
chloroethane	0.335	0.283	-	15.5	30	76	0
ethanol	0.482	0.381	-	21	30	65	0
vinyl bromide	0.653	0.55	-	15.8	30	76	0
acetone	0.787	0.702	-	10.8	30	83	0
trichlorofluoromethane	1.001	0.947	-	5.4	30	83	0
isopropyl alcohol	1.13	0.94	-	16.8	30	80	0
acrylonitrile	0.562	0.411	-	26.9	30	66	0
1,1-dichloroethene	0.806	0.728	-	9.7	30	78	0
tertiary butyl alcohol	1.126	0.763	-	32.2*	30	65	0
methylene chloride	0.766	0.652	-	14.9	30	70	0
3-chloropropene	0.898	0.836	-	6.9	30	76	0
carbon disulfide	1.879	1.502	-	20.1	30	61	0
Freon 113	1.107	1.038	-	6.2	30	73	0
Halothane	0.922	1.013	-	-9.9	30	103	0
trans-1,2-dichloroethene	1.141	1.096	-	3.9	30	81	0
1,1-dichloroethane	1.372	1.325	-	3.4	30	82	0
MTBE	1.833	1.647	-	10.1	30	75	0
vinyl acetate	1.99	2.006	-	-0.8	30	82	0
2-butanone	1.947	1.766	-	9.3	30	76	.02
cis-1,2-dichloroethene	0.987	1.004	-	-1.7	30	85	0
Ethyl Acetate	0.274	0.283	-	-3.3	30	84	0
chloroform	1.231	1.221	-	0.8	30	88	0
Tetrahydrofuran	1.235	1.111	-	10	30	73	.02
1,2-dichloroethane	0.781	0.779	-	0.3	30	86	0
1,4-difluorobenzene	1	1	-	0	30	93	.02
hexane	0.554	0.516	-	6.9	30	84	.02
1,1,1-trichloroethane	0.431	0.401	-	7	30	87	.02
benzene	1.07	0.895	-	16.4	30	80	0
carbon tetrachloride	0.361	0.352	-	2.5	30	89	0
cyclohexane	0.602	0.549	-	8.8	30	84	0
Dibromomethane	0.362	0.275	-	24	30	79	.02
1,2-dichloropropane	0.401	0.355	-	11.5	30	82	0
bromodichloromethane	0.528	0.508	-	3.8	30	88	.02
1,4-dioxane	0.246	0.233	-	5.3	30	85	.02
trichloroethene	0.411	0.373	-	9.2	30	86	0
2,2,4-trimethylpentane	1.865	1.75	-	6.2	30	85	.02
heptane	0.872	0.745	-	14.6	30	78	.02

* Value outside of QC limits.

Continuing Calibration
Form 7

Client : Sterling Environmental Eng
Project Name : EHS 2017 IA
Instrument ID : AIRLAB15
Lab File ID : R154990_EV2
Sample No : WG1078229-2
Channel :

Lab Number : L1747754
Project Number : 28014
Calibration Date : 01/02/18 12:12
Init. Calib. Date(s) : 12/22/17 12/22/17
Init. Calib. Times : 14:54 20:41

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
cis-1,3-dichloropropene	0.493	0.45	-	8.7	30	82	.02
4-methyl-2-pentanone	0.997	0.855	-	14.2	30	77	.02
trans-1,3-dichloropropene	0.451	0.357	-	20.8	30	71	.02
1,1,2-trichloroethane	0.397	0.368	-	7.3	30	86	0
chlorobenzene-D5	1	1	-	0	30	89	0
toluene	6.933	6.504	-	6.2	30	84	.02
2-hexanone	5.013	4.438	-	11.5	30	74	.02
dibromochloromethane	2.801	2.963	-	-5.8	30	91	0
1,2-dibromoethane	3.166	3.092	-	2.3	30	85	.02
tetrachloroethene	2.516	2.383	-	5.3	30	87	0
1,1,1,2-tetrachloroethane	2.131	1.945	-	8.7	30	79	0
chlorobenzene	5.313	5.093	-	4.1	30	85	0
ethylbenzene	8.45	8.311	-	1.6	30	84	0
m+p-xylene	6.882	6.784	-	1.4	30	84	0
bromoform	2.124	2.356	-	-10.9	30	89	0
styrene	5.551	5.359	-	3.5	30	82	0
1,1,2,2-tetrachloroethane	4.911	4.864	-	1	30	86	0
o-xylene	6.96	6.941	-	0.3	30	85	0
1,2,3-Trichloropropane	3.963	3.46	-	12.7	30	77	-.02
isopropylbenzene	9.051	8.328	-	8	30	79	-.02
Bromobenzene	5.077	4.446	-	12.4	30	77	-.03
4-ethyl toluene	9.972	9.741	-	2.3	30	81	-.05
1,3,5-trimethylbenzene	7.952	7.953	-	-0	30	83	-.05
tert-butylbenzene	8.401	7.789	-	7.3	30	78	-.07
1,2,4-trimethylbenzene	7.813	8.025	-	-2.7	30	84	-.07
Benzyl Chloride	5.205	5.453	-	-4.8	30	79	-.07
1,3-dichlorobenzene	5.315	5.345	-	-0.6	30	86	-.07
1,4-dichlorobenzene	5.266	5.216	-	0.9	30	85	-.07
sec-butylbenzene	11.489	10.641	-	7.4	30	77	-.07
p-isopropyltoluene	9.93	8.793	-	11.5	30	73	-.08
1,2-dichlorobenzene	4.896	4.967	-	-1.5	30	86	-.08
n-butylbenzene	8.953	8.803	-	1.7	30	79	-.09
1,2,4-trichlorobenzene	3.405	3.837	-	-12.7	30	91	-.12
naphthalene	9.689	10.077	-	-4	30	81	-.13
1,2,3-trichlorobenzene	3.231	3.396	-	-5.1	30	84	-.13
hexachlorobutadiene	2.843	3.249	-	-14.3	30	94	-.12

* Value outside of QC limits.

```
                    Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                         AvgRF   CCRF      %Dev Area% Dev(min)
  -------------------------------------------------------------------------------
  1 I    bromochloromethane                1.000   1.000       0.0   85   0.00
  2      propylene                         0.779   0.732       6.0   82   0.00
  3      dichlorodifluoromethane           1.172   1.079       7.9   79   0.00
  4 C    chloromethane                     0.655   0.532      18.8   70   0.00
  5      Freon-114                         1.472   1.278      13.2   76   0.00
  6 C    vinyl chloride                    0.642   0.559      12.9   77   0.00
  7 C    1,3-butadiene                     0.558   0.491      12.0   75   0.00
  8 C    bromomethane                      0.593   0.532      10.3   79   0.00
  9 C    chloroethane                      0.335   0.283      15.5   76   0.00
 10      ethanol                           0.482   0.381      21.0   65   0.00
 11 C    vinyl bromide                     0.653   0.550      15.8   76   0.00
 12      acetone                           0.787   0.702      10.8   83   0.00
 13      trichlorofluoromethane            1.001   0.947       5.4   83   0.00
 14      isopropyl alcohol                 1.130   0.940      16.8   80   0.00
 15 C    acrylonitrile                     0.562   0.411      26.9   66   0.00
 16 C    1,1-dichloroethene                0.806   0.728       9.7   78   0.00
 17      tertiary butyl alcohol            1.126   0.763      32.2#  65   0.00
 18 C    methylene chloride                0.766   0.652      14.9   70   0.00
 19 C    3-chloropropene                   0.898   0.836       6.9   76   0.00
 20 C    carbon disulfide                  1.879   1.502      20.1   61   0.00
 21      Freon 113                         1.107   1.038       6.2   73   0.00
 22      Halothane                         0.922   1.013      -9.9  103   0.00
 23      trans-1,2-dichloroethene          1.141   1.096       3.9   81   0.00
 24 C    1,1-dichloroethane                1.372   1.325       3.4   82   0.00
 25 C    MTBE                              1.833   1.647      10.1   75   0.00
 26 C    vinyl acetate                     1.990   2.006      -0.8   82   0.00
 27 C    2-butanone                        1.947   1.766       9.3   76   0.02
 28      cis-1,2-dichloroethene            0.987   1.004      -1.7   85   0.00
 29      Ethyl Acetate                     0.274   0.283      -3.3   84   0.00
 30 C    chloroform                        1.231   1.221       0.8   88   0.00
 31      Tetrahydrofuran                   1.235   1.111      10.0   73   0.02
 32 C    1,2-dichloroethane                0.781   0.779       0.3   86   0.00

 33 I    1,4-difluorobenzene               1.000   1.000       0.0   93   0.02
 34 C    hexane                            0.554   0.516       6.9   84   0.02
 36 C    1,1,1-trichloroethane             0.431   0.401       7.0   87   0.02
 37 C    benzene                           1.070   0.895      16.4   80   0.00
 38 C    carbon tetrachloride              0.361   0.352       2.5   89   0.00
 39      cyclohexane                       0.602   0.549       8.8   84   0.00
```

```
                     Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                         AvgRF   CCRF      %Dev Area% Dev(min)
  -----------------------------------------------------------------------------
 40      Dibromomethane                   0.362   0.275      24.0   79   0.02
 41 C    1,2-dichloropropane              0.401   0.355      11.5   82   0.00
 42      bromodichloromethane             0.528   0.508       3.8   88   0.02
 43 C    1,4-dioxane                      0.246   0.233       5.3   85   0.02
 44 C    trichloroethene                  0.411   0.373       9.2   86   0.00
 45 C    2,2,4-trimethylpentane           1.865   1.750       6.2   85   0.02
 46      heptane                          0.872   0.745      14.6   78   0.02
 47 C    cis-1,3-dichloropropene          0.493   0.450       8.7   82   0.02
 48 C    4-methyl-2-pentanone             0.997   0.855      14.2   77   0.02
 49      trans-1,3-dichloropropene        0.451   0.357      20.8   71   0.02
 50 C    1,1,2-trichloroethane            0.397   0.368       7.3   86   0.00

 51 I    chlorobenzene-D5                 1.000   1.000       0.0   89   0.00
 52 C    toluene                          6.933   6.504       6.2   84   0.02
 54      2-hexanone                       5.013   4.438      11.5   74   0.02
 55      dibromochloromethane             2.801   2.963      -5.8   91   0.00
 56 C    1,2-dibromoethane                3.166   3.092       2.3   85   0.02
 57 C    tetrachloroethene                2.516   2.383       5.3   87   0.00
 58      1,1,1,2-tetrachloroethane        2.131   1.945       8.7   79   0.00
 59 C    chlorobenzene                    5.313   5.093       4.1   85   0.00
 60 C    ethylbenzene                     8.450   8.311       1.6   84   0.00
 61 C    m+p-xylene                       6.882   6.784       1.4   84   0.00
 62 C    bromoform                        2.124   2.356     -10.9   89   0.00
 63 C    styrene                          5.551   5.359       3.5   82   0.00
 64 C    1,1,2,2-tetrachloroethane        4.911   4.864       1.0   86   0.00
 65 C    o-xylene                         6.960   6.941       0.3   85   0.00
 66      1,2,3-Trichloropropane           3.963   3.460      12.7   77  -0.02
 68 C    isopropylbenzene                 9.051   8.328       8.0   79  -0.02
 69      Bromobenzene                     5.077   4.446      12.4   77  -0.03
 70      4-ethyl toluene                  9.972   9.741       2.3   81  -0.05
 71      1,3,5-trimethylbenzene           7.952   7.953      -0.0   83  -0.05
 72      tert-butylbenzene                8.401   7.789       7.3   78  -0.07
 73      1,2,4-trimethylbenzene           7.813   8.025      -2.7   84  -0.07
 74 C    Benzyl Chloride                  5.205   5.453      -4.8   79  -0.07
 75      1,3-dichlorobenzene              5.315   5.345      -0.6   86  -0.07
 76 C    1,4-dichlorobenzene              5.266   5.216       0.9   85  -0.07
 77      sec-butylbenzene                11.489  10.641       7.4   77  -0.07
 78      p-isopropyltoluene               9.930   8.793      11.5   73  -0.08
 79      1,2-dichlorobenzene              4.896   4.967      -1.5   86  -0.08
```

```
                         Evaluate Continuing Calibration Report

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration


  Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
  Max. RRF Dev :  30%     Max. Rel. Area : 140%

         Compound                      AvgRF   CCRF      %Dev Area% Dev(min)
  ----------------------------------------------------------------------------
 80      n-butylbenzene                 8.953   8.803       1.7   79  -0.09
 81 C    1,2,4-trichlorobenzene         3.405   3.837     -12.7   91  -0.12
 82      naphthalene                    9.689  10.077      -4.0   81  -0.13
 83      1,2,3-trichlorobenzene         3.231   3.396      -5.1   84  -0.13
 84 C    hexachlorobutadiene            2.843   3.249     -14.3   94  -0.12
 ----------------------------------------------------------------------------
          * Evaluation of CC level amount vs concentration.
   (#) = Out of Range               SPCC's out = 0  CCC's out = 0
```

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.92   49   130072    10.000 ppbV     0.00
     Standard Area  =       130072                Recovery   =  100.00%
    33) 1,4-difluorobenzene         11.16  114   339026    10.000 ppbV     0.02
     Standard Area  =       339026                Recovery   =  100.00%
    51) chlorobenzene-D5            15.88   54    58190    10.000 ppbV     0.00
     Standard Area  =        58190                Recovery   =  100.00%

   System Monitoring Compounds

   Target Compounds                                                 Qvalue
     2) propylene                    3.78   41     47603M6    4.699 ppbV
     3) dichlorodifluoromethane      3.85   85     70148      4.601 ppbV     100
     4) chloromethane                4.00   50     34573      4.058 ppbV      99
     5) Freon-114                    4.11   85     83097      4.341 ppbV      95
     6) vinyl chloride               4.23   62     36349      4.354 ppbV     100
     7) 1,3-butadiene                4.37   54     31957      4.402 ppbV      99
     8) bromomethane                 4.65   94     34599      4.485 ppbV      96
     9) chloroethane                 4.83   64     18407      4.227 ppbV      95
    10) ethanol                      4.96   31    123873     19.776 ppbV      97
    11) vinyl bromide                5.20  106     35802      4.214 ppbV      94
    12) acetone                      5.47   43    228188     22.280 ppbV      99
    13) trichlorofluoromethane       5.66  101     61594      4.731 ppbV      99
    14) isopropyl alcohol            5.75   45    152881     10.402 ppbV     100
    15) acrylonitrile                5.98   53     26746      3.660 ppbV      97
    16) 1,1-dichloroethene           6.36   61     47340      4.515 ppbV      98
    17) tertiary butyl alcohol       6.41   59     49614      3.388 ppbV      92
    18) methylene chloride           6.49   49     42382      4.253 ppbV      96
    19) 3-chloropropene              6.63   41     54386      4.654 ppbV      99
    20) carbon disulfide             6.80   76     97659      3.996 ppbV      95
    21) Freon 113                    6.80  101     67487      4.686 ppbV      94
    22) Halothane                    7.33  117     65851      5.489 ppbV      97
    23) trans-1,2-dichloroethene     7.55   61     71286      4.803 ppbV      99
    24) 1,1-dichloroethane           7.77   63     86171      4.827 ppbV      98
    25) MTBE                         7.85   73    107091      4.491 ppbV      98
    26) vinyl acetate                7.97   43    130433      5.039 ppbV      98
    27) 2-butanone                   8.23   43    114877      4.537 ppbV      96
    28) cis-1,2-dichloroethene       8.72   61     65321      5.088 ppbV      98
    29) Ethyl Acetate                9.01   61     18416      5.158 ppbV      88
    30) chloroform                   9.07   83     79399      4.958 ppbV      99
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    31) Tetrahydrofuran                9.53   42     72270M6    4.500 ppbV
    32) 1,2-dichloroethane             9.91   62     50654      4.987 ppbV      97
    34) hexane                         8.98   57     87395      4.649 ppbV      99
    36) 1,1,1-trichloroethane         10.20   97     67916      4.644 ppbV      98
    37) benzene                       10.73   78    151646      4.181 ppbV     100
    38) carbon tetrachloride          10.90  117     59726      4.879 ppbV      99
    39) cyclohexane                   11.04   56     93090      4.564 ppbV      97
    40) Dibromomethane                11.65   93     46541      3.789 ppbV #    99
    41) 1,2-dichloropropane           11.68   63     60211      4.428 ppbV      99
    42) bromodichloromethane          11.91   83     86055      4.811 ppbV      99
    43) 1,4-dioxane                   11.96   88     39460      4.739 ppbV      99
    44) trichloroethene               11.96  130     63210      4.532 ppbV      98
    45) 2,2,4-trimethylpentane        12.01   57    296721      4.694 ppbV      97
    46) heptane                       12.32   43    126316      4.272 ppbV      94
    47) cis-1,3-dichloropropene       12.98   75     76295      4.562 ppbV      98
    48) 4-methyl-2-pentanone          13.02   43    144963      4.287 ppbV      95
    49) trans-1,3-dichloropropene     13.60   75     60546      3.957 ppbV      98
    50) 1,1,2-trichloroethane         13.80   97     62357      4.629 ppbV      98
    52) toluene                       14.13   91    189220      4.691 ppbV      99
    54) 2-hexanone                    14.42   43    129130      4.427 ppbV      94
    55) dibromochloromethane          14.57  129     86200      5.289 ppbV      99
    56) 1,2-dibromoethane             14.83  107     89949      4.883 ppbV      99
    57) tetrachloroethene             15.29  166     69324      4.735 ppbV      99
    58) 1,1,1,2-tetrachloroethane     15.91  131     56604      4.565 ppbV      99
    59) chlorobenzene                 15.93  112    148191      4.793 ppbV      98
    60) ethylbenzene                  16.26   91    241821      4.918 ppbV      98
    61) m+p-xylene                    16.43   91    394738      9.857 ppbV      99
    62) bromoform                     16.48  173     68540      5.546 ppbV      98
    63) styrene                       16.73  104    155910      4.827 ppbV      99
    64) 1,1,2,2-tetrachloroethane     16.82   83    141526      4.952 ppbV      99
    65) o-xylene                      16.82   91    201953      4.986 ppbV     100
    66) 1,2,3-Trichloropropane        16.93   75    100680      4.366 ppbV      97
    68) isopropylbenzene              17.32  105    242315      4.601 ppbV      98
    69) Bromobenzene                  17.38   77    129357      4.378 ppbV      98
    70) 4-ethyl toluene               17.85  105    283414      4.884 ppbV      99
    71) 1,3,5-trimethylbenzene        17.91  105    231405      5.001 ppbV     100
    72) tert-butylbenzene             18.24  119    226633      4.636 ppbV      96
    73) 1,2,4-trimethylbenzene        18.24  105    233486      5.136 ppbV      97
    74) Benzyl Chloride               18.36   91    158659      5.239 ppbV      98
    75) 1,3-dichlorobenzene           18.38  146    155500M3    5.027 ppbV
```

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-2,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

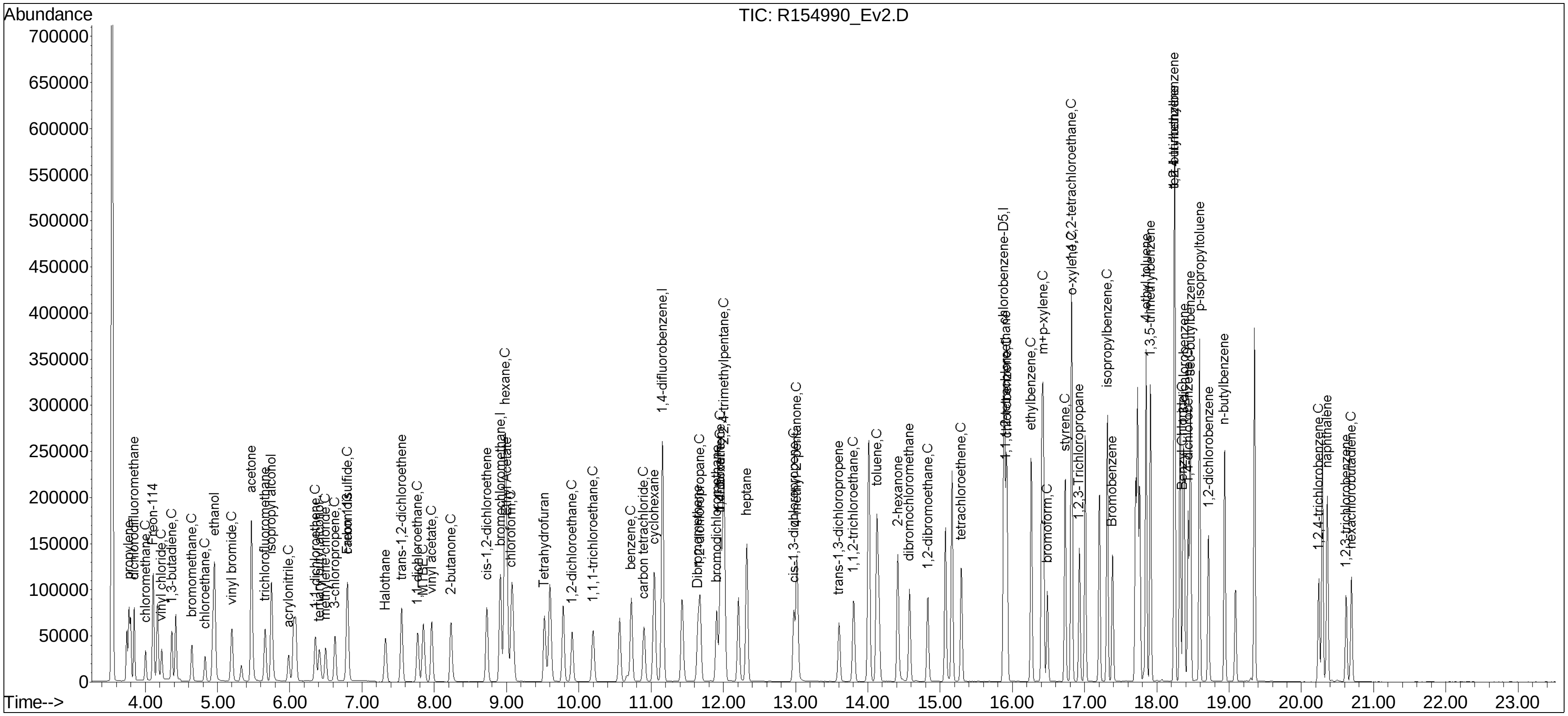
          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    76) 1,4-dichlorobenzene         18.43  146    151760      4.952 ppbV      98
    77) sec-butylbenzene            18.47  105    309599      4.631 ppbV      98
    78) p-isopropyltoluene          18.59  119    255845      4.428 ppbV      99
    79) 1,2-dichlorobenzene         18.72  146    144515      5.073 ppbV      96
    80) n-butylbenzene              18.93   91    256123      4.916 ppbV      94
    81) 1,2,4-trichlorobenzene      20.24  180    111634      5.635 ppbV      98
    82) naphthalene                 20.36  128    293176      5.200 ppbV      99
    83) 1,2,3-trichlorobenzene      20.62  180     98813      5.256 ppbV      97
    84) hexachlorobutadiene         20.69  225     94541      5.715 ppbV      99
   --------------------------------------------------------------------------

   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : Default-SIM-LCS - All compounds listedSIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : R154990_Ev2.D
Acq On    :  2 Jan 2018  12:12 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-2,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

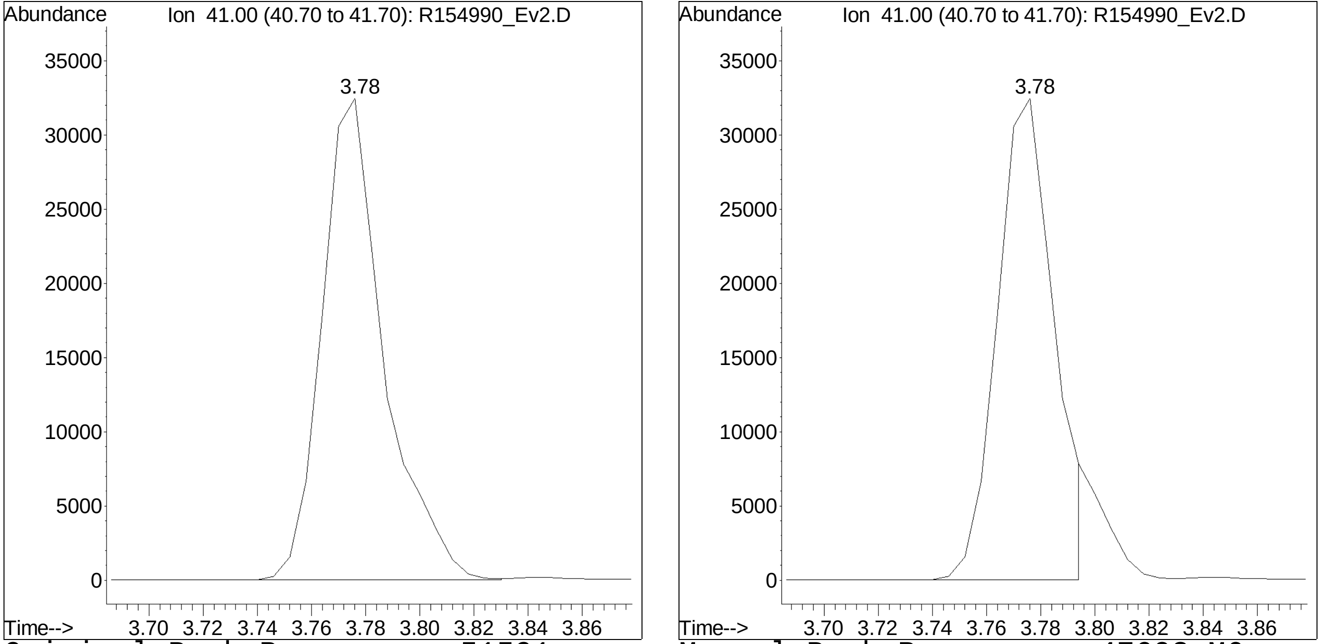
Quant Time: Jan 02 13:05:00 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : R154990_Ev2.D                Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 12:12 PM            Instrument  :
Sample      : WG1078229-2,3,250,250        Quant Date  : 1/2/2018  1:03 pm
```

Compound #2: propylene



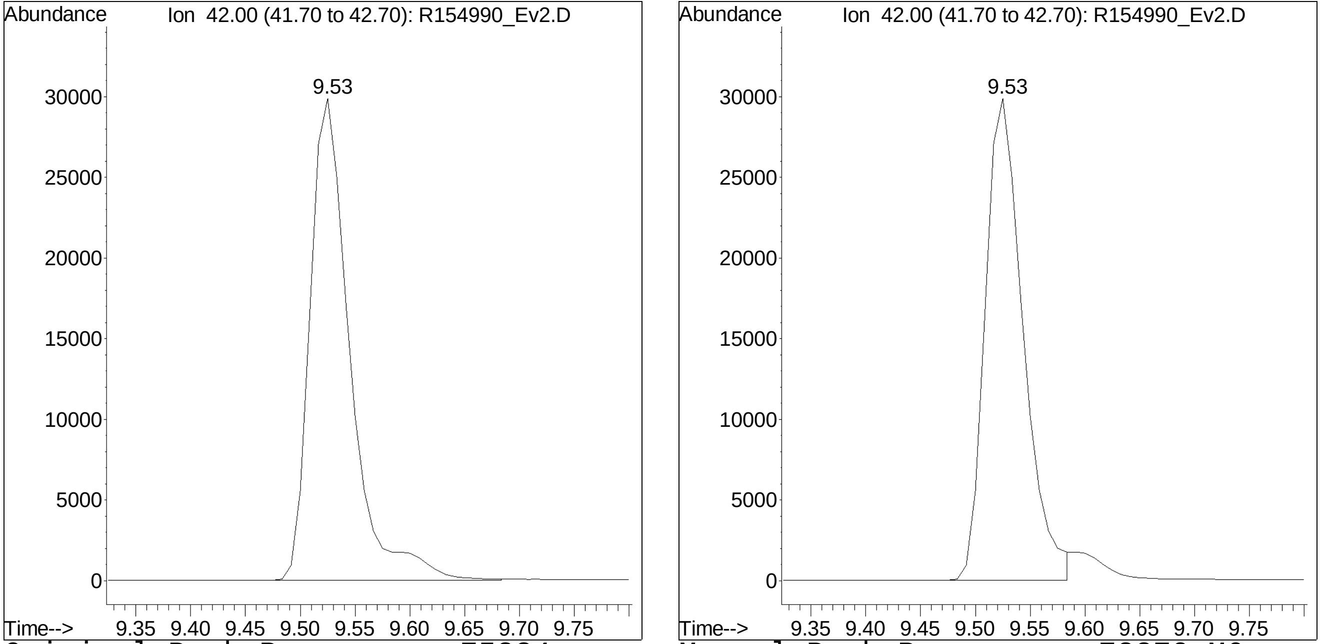
Original Peak Response = 51591   Manual Peak Response = 47603 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : R154990_Ev2.D              Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 12:12 PM          Instrument  :
Sample      : WG1078229-2,3,250,250      Quant Date  : 1/2/2018  1:03 pm
```

Compound #31: Tetrahydrofuran



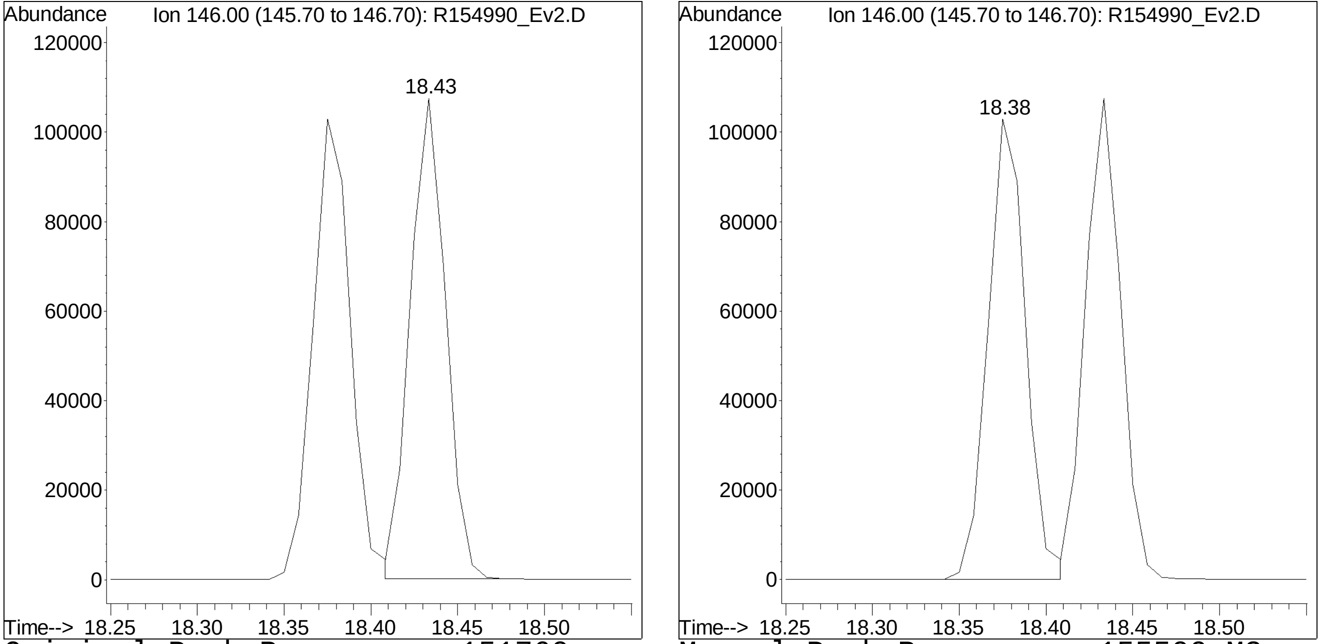
Original Peak Response = 75834   Manual Peak Response = 72270 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : R154990_Ev2.D             Operator     : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 12:12 PM         Instrument   :
Sample      : WG1078229-2,3,250,250     Quant Date   : 1/2/2018  1:03 pm
```

Compound #75: 1,3-dichlorobenzene



Original Peak Response = 151760   Manual Peak Response = 155500 M3

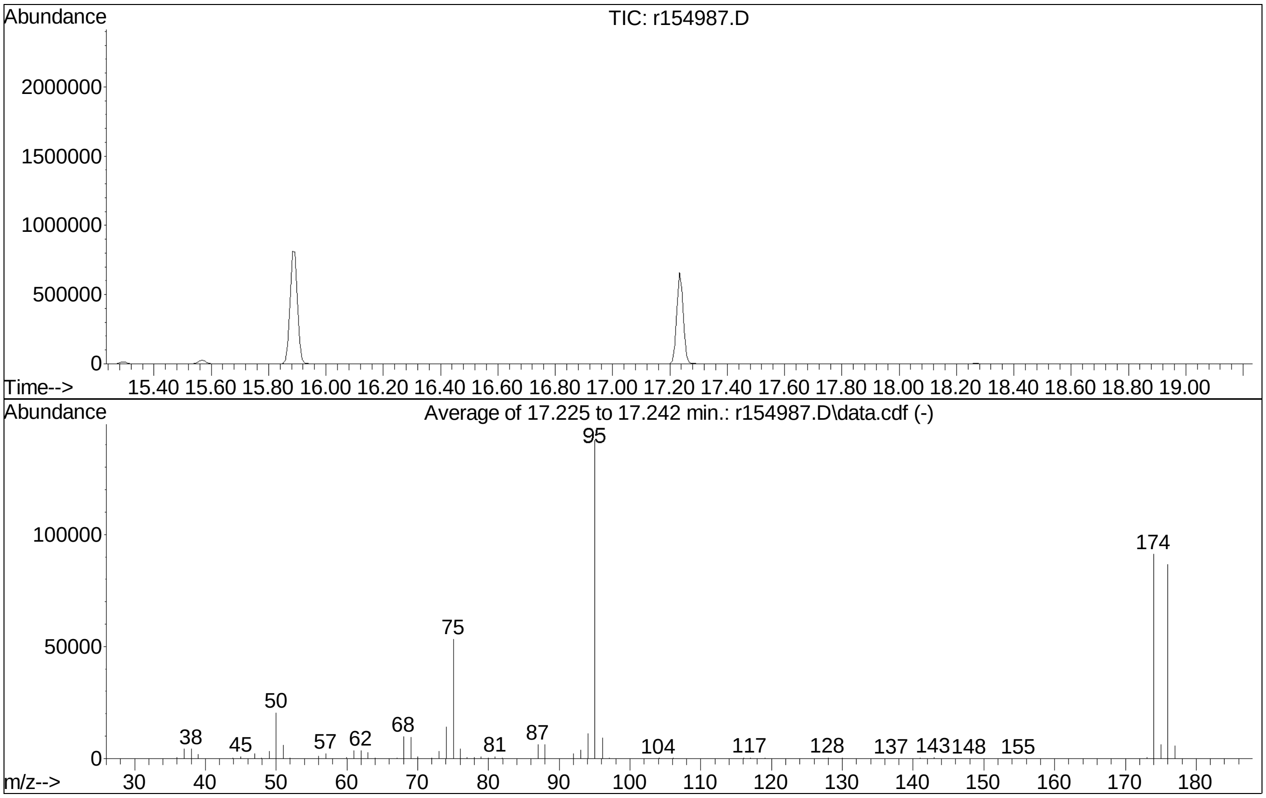
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

```
                                 BFB

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : r154987.D
  Acq On    :  2 Jan 2018   9:54 AM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-1,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Integration File: rteint.p

  Method    : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Title     : TO-14A/TO-15 SIM/Full Scan Analysis
  Last Update  : Sat Dec 23 10:16:56 2017
```



```
    AutoFind: Scans 2073, 2074, 2075; Background Corrected with Scan 2068

    | Target | Rel. to | Lower  | Upper  |  Rel.  |    Raw    |   Result  |
    |  Mass  |  Mass   | Limit% | Limit% |  Abn%  |    Abn    | Pass/Fail |
    -------------------------------------------------------------------
    |   50   |    95   |      8 |     40 |  14.5  |     20565 |   PASS    |
    |   75   |    95   |     30 |     66 |  37.4  |     53249 |   PASS    |
    |   95   |    95   |    100 |    100 | 100.0  |    142241 |   PASS    |
    |   96   |    95   |      5 |      9 |   6.6  |      9365 |   PASS    |
    |  173   |   174   |   0.00 |      2 |   0.5  |       458 |   PASS    |
    |  174   |    95   |     50 |    120 |  64.2  |     91314 |   PASS    |
    |  175   |   174   |      4 |      9 |   7.0  |      6388 |   PASS    |
    |  176   |   174   |     93 |    101 |  94.8  |     86580 |   PASS    |
    |  177   |   176   |      5 |      9 |   6.7  |      5816 |   PASS    |
    -------------------------------------------------------------------
```

Volatiles Raw QC Data

```
                     Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : r154992_Ev2.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-4,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 16:48:46 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

          Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane           8.91   49   127846    10.000 ppbV     0.00
     Standard Area  =       130072                 Recovery   =   98.29%
    33) 1,4-difluorobenzene         11.16  114   335353    10.000 ppbV     0.02
     Standard Area  =       339026                 Recovery   =   98.92%
    51) chlorobenzene-D5            15.88   54    57004    10.000 ppbV     0.00
     Standard Area  =        58190                 Recovery   =   97.96%

   System Monitoring Compounds

   Target Compounds                                                   Qvalue
     2) propylene                    3.78   41       284      0.029 ppbV #    87
     3) dichlorodifluoromethane      0.00              0       N.D.
     4) chloromethane                0.00              0       N.D.
     5) Freon-114                    0.00              0       N.D.
     6) vinyl chloride               0.00              0       N.D.
     7) 1,3-butadiene                0.00              0       N.D.
     8) bromomethane                 0.00              0       N.D.
     9) chloroethane                 0.00              0       N.D.
    10) ethanol                      0.00              0       N.D. d
    11) vinyl bromide                0.00              0       N.D.
    12) acetone                      5.51   43       676M3    0.067 ppbV
    13) trichlorofluoromethane       0.00              0       N.D.
    14) isopropyl alcohol            5.78   45      1732M1    0.120 ppbV
    15) acrylonitrile                0.00              0       N.D.
    16) 1,1-dichloroethene           0.00              0       N.D.
    17) tertiary butyl alcohol       0.00              0       N.D.
    18) methylene chloride           6.50   49       114      0.012 ppbV #    77
    19) 3-chloropropene              0.00              0       N.D.
    20) carbon disulfide             6.80              0       N.D.
    21) Freon 113                    0.00              0       N.D.
    22) Halothane                    0.00              0       N.D.
    23) trans-1,2-dichloroethene     0.00              0       N.D.
    24) 1,1-dichloroethane           0.00              0       N.D.
    25) MTBE                         0.00              0       N.D.
    26) vinyl acetate                0.00              0       N.D. d
    27) 2-butanone                   8.28              0       N.D.
    28) cis-1,2-dichloroethene       0.00              0       N.D.
    29) Ethyl Acetate                0.00              0       N.D.
    30) chloroform                   0.00              0       N.D.
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : r154992_Ev2.D
  Acq On    :  2 Jan 2018   3:23 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-4,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 16:48:46 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

          Compound                    R.T. QIon  Response  Conc Units Dev(Min)
   --------------------------------------------------------------------------
    31) Tetrahydrofuran              0.00             0       N.D.
    32) 1,2-dichloroethane           0.00             0       N.D.
    34) hexane                       8.97             0       N.D.
    36) 1,1,1-trichloroethane        0.00             0       N.D.
    37) benzene                     10.73             0       N.D.
    38) carbon tetrachloride         0.00             0       N.D.
    39) cyclohexane                  0.00             0       N.D. d
    40) Dibromomethane              11.64   93      159      0.013 ppbV #    97
    41) 1,2-dichloropropane          0.00             0       N.D.
    42) bromodichloromethane         0.00             0       N.D.
    43) 1,4-dioxane                  0.00             0       N.D.
    44) trichloroethene              0.00             0       N.D.
    45) 2,2,4-trimethylpentane       0.00             0       N.D.
    46) heptane                      0.00             0       N.D.
    47) cis-1,3-dichloropropene      0.00             0       N.D.
    48) 4-methyl-2-pentanone        13.06             0       N.D.
    49) trans-1,3-dichloropropene   13.60             0       N.D.
    50) 1,1,2-trichloroethane        0.00             0       N.D.
    52) toluene                     14.13             0       N.D.
    54) 2-hexanone                  14.47             0       N.D.
    55) dibromochloromethane         0.00             0       N.D.
    56) 1,2-dibromoethane           14.83             0       N.D.
    57) tetrachloroethene            0.00             0       N.D.
    58) 1,1,1,2-tetrachloroethane   15.96             0       N.D.
    59) chlorobenzene                0.00             0       N.D.
    60) ethylbenzene                 0.00             0       N.D.
    61) m+p-xylene                  16.43             0       N.D.
    62) bromoform                    0.00             0       N.D.
    63) styrene                     16.73             0       N.D.
    64) 1,1,2,2-tetrachloroethane    0.00             0       N.D.
    65) o-xylene                    16.83             0       N.D.
    66) 1,2,3-Trichloropropane       0.00             0       N.D.
    68) isopropylbenzene             0.00             0       N.D.
    69) Bromobenzene                 0.00             0       N.D.
    70) 4-ethyl toluene             17.93             0       N.D.
    71) 1,3,5-trimethylbenzene      17.93             0       N.D.
    72) tert-butylbenzene           18.25             0       N.D.
    73) 1,2,4-trimethylbenzene      18.26             0       N.D.
    74) Benzyl Chloride             18.38             0       N.D.
    75) 1,3-dichlorobenzene         18.44             0       N.D.
```

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r154992_Ev2.D
Acq On    :  2 Jan 2018   3:23 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-4,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 16:48:46 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
Sub List     : Default-SIM-LCS - All compounds listed

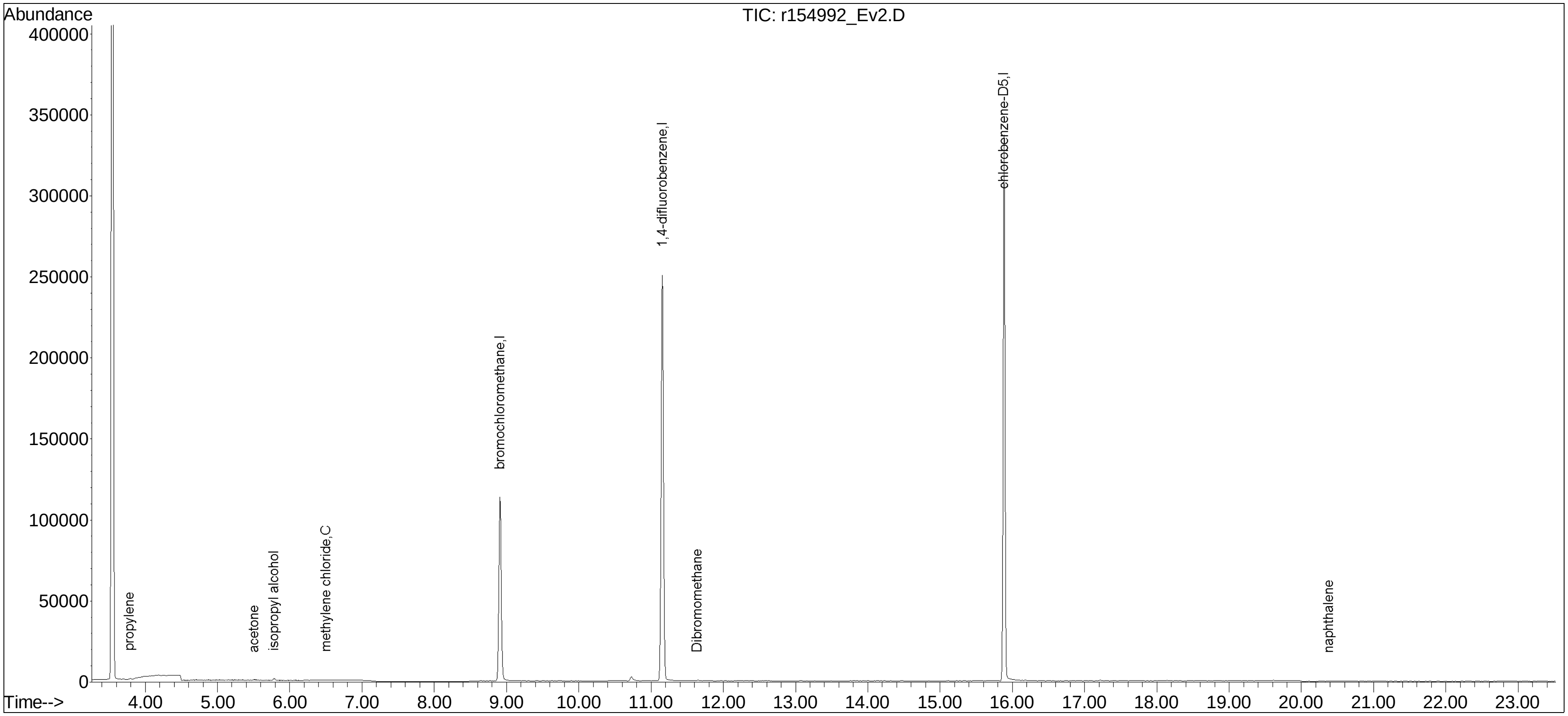
        Compound                     R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
  76) 1,4-dichlorobenzene          18.44                0       N.D.
  77) sec-butylbenzene             18.48                0       N.D.
  78) p-isopropyltoluene           18.60                0       N.D.
  79) 1,2-dichlorobenzene          18.73                0       N.D.
  80) n-butylbenzene               18.95                0       N.D.
  81) 1,2,4-trichlorobenzene       20.26                0       N.D.
  82) naphthalene                  20.38  128       572M1    0.010 ppbV
  83) 1,2,3-trichlorobenzene       20.63                0       N.D.
  84) hexachlorobutadiene          20.70                0       N.D.
 --------------------------------------------------------------------------

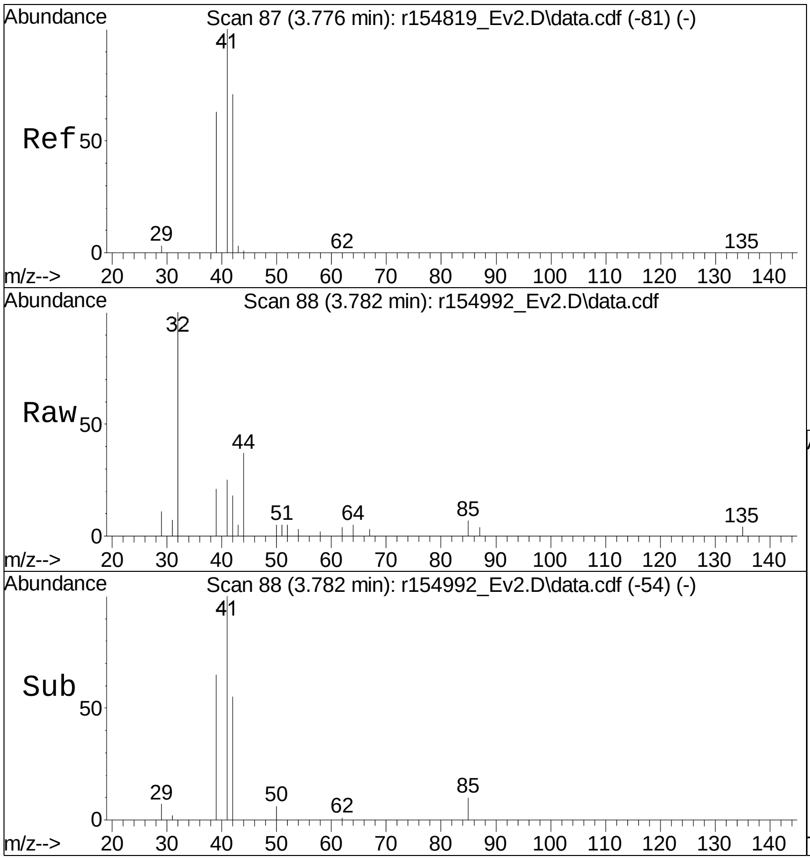
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : Default-SIM-LCS - All compounds listedSIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r154992_Ev2.D
Acq On    :  2 Jan 2018   3:23 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-4,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

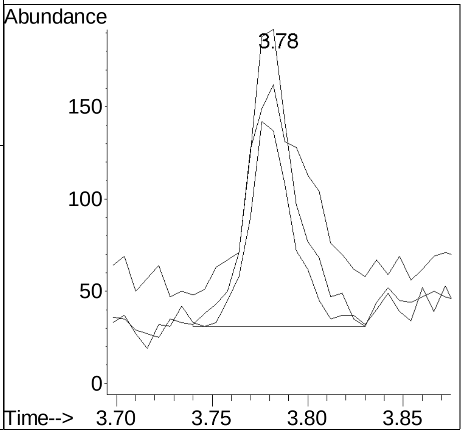
Quant Time: Jan 02 16:48:46 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
```

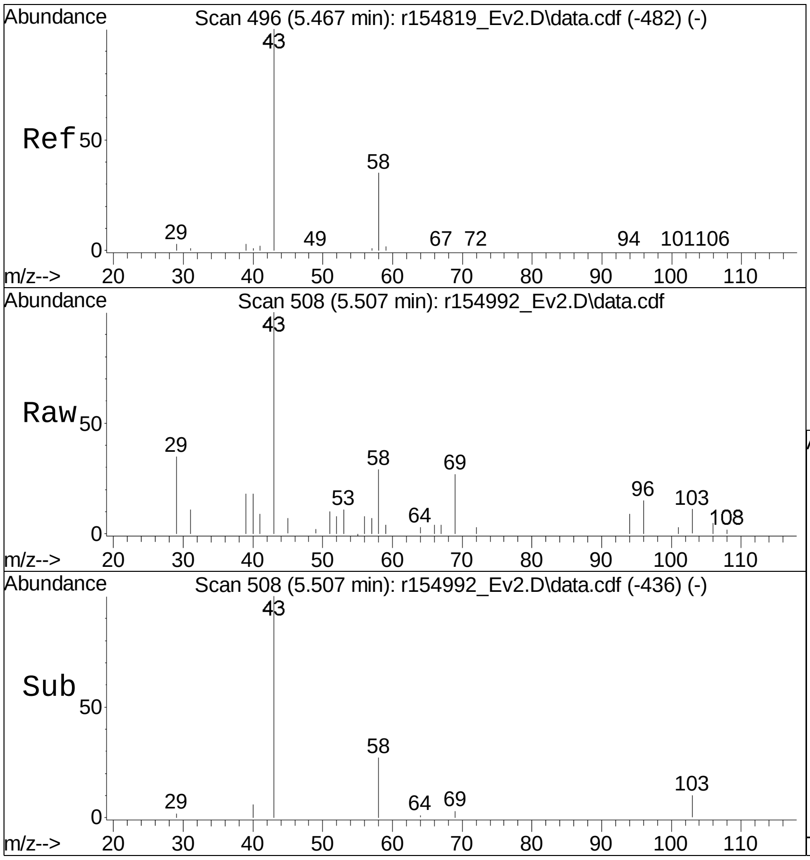




```
#2
propylene
Concen:    0.03 ppbV
RT:    3.78 min  Scan# 88
Delta R.T.  0.006 min
Lab File:   r154992_Ev2.D
Acq:  2 Jan 2018   3:23 PM

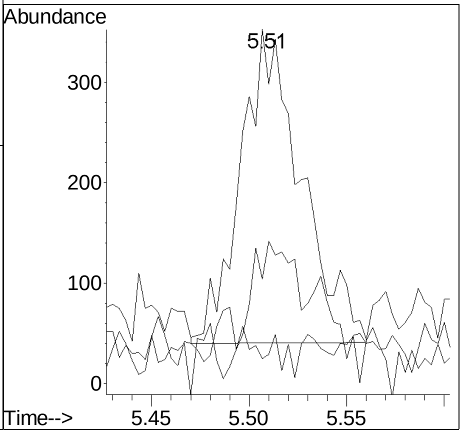
Tgt Ion: 41 Resp:     284
Ion  Ratio  Lower  Upper
 41  100
 42   71.4   57.2   85.8
 39   84.4   50.2   75.4#
```

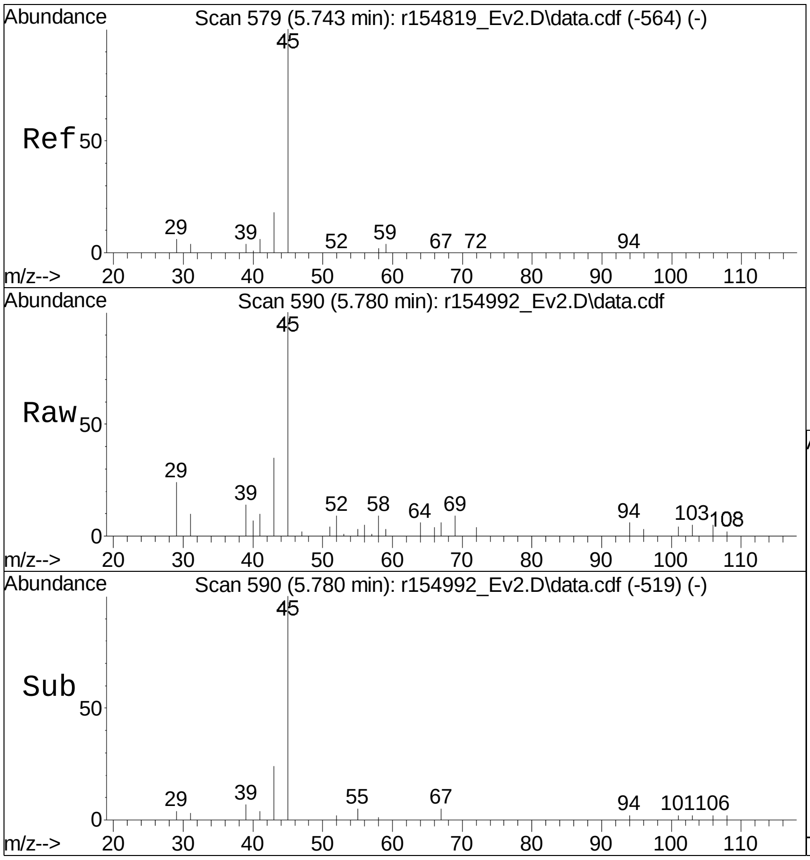




```
#12
acetone
Concen:    0.07 ppbV m
RT:    5.51 min  Scan# 508
Delta R.T.  0.040 min
Lab File:   r154992_Ev2.D
Acq:  2 Jan 2018   3:23 PM

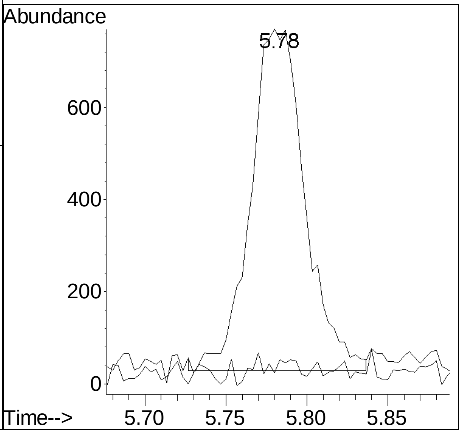
Tgt Ion: 43 Resp:      676
Ion  Ratio  Lower  Upper
 43  100
 58   29.5   27.8   41.6
 57    7.1    0.7    1.1#
```

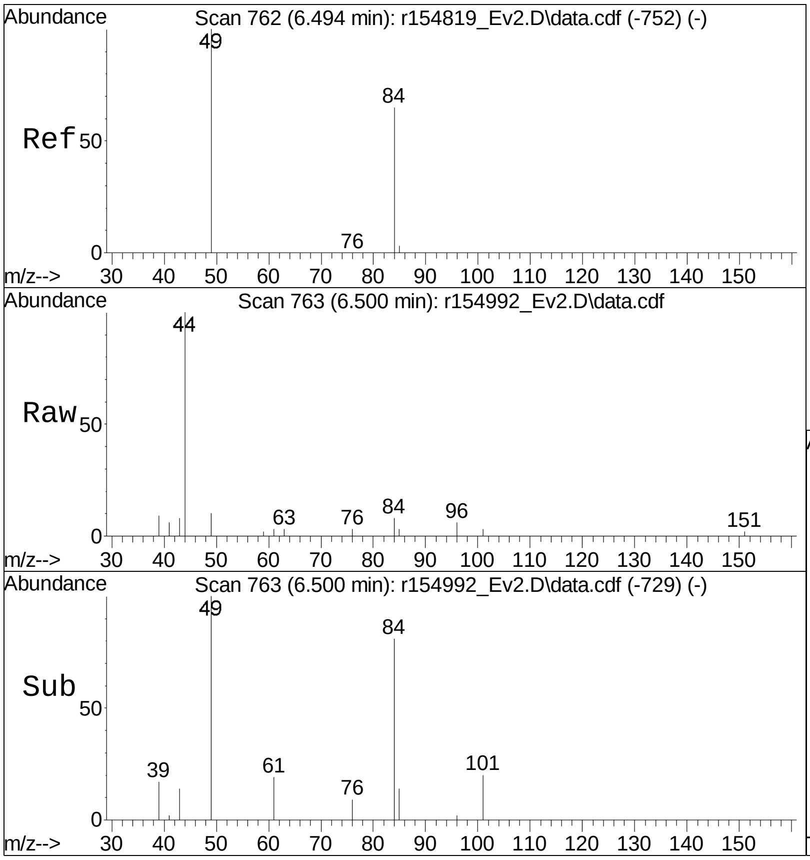




```
#14
isopropyl alcohol
Concen:    0.12 ppbV m
RT:    5.78 min  Scan# 590
Delta R.T.  0.037 min
Lab File:   r154992_Ev2.D
Acq:  2 Jan 2018   3:23 PM

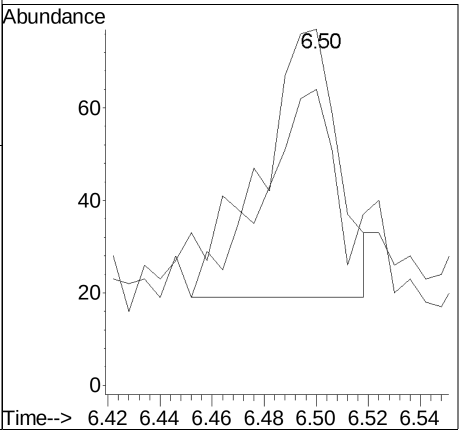
Tgt Ion: 45 Resp:    1732
Ion  Ratio  Lower  Upper
 45  100
 59    3.1    2.9    4.3
```

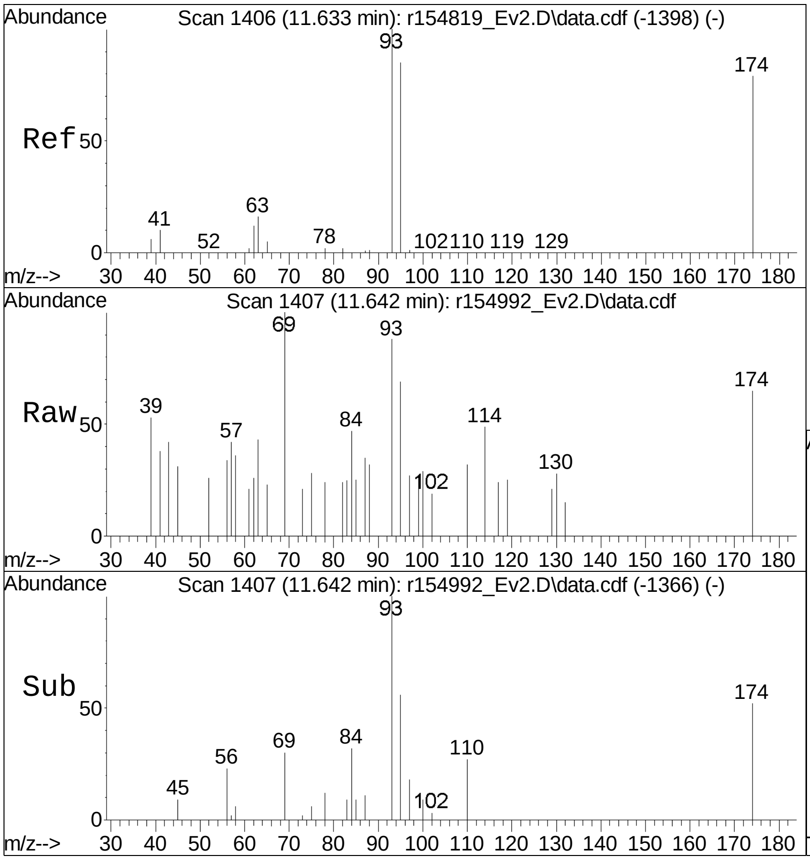




```
#18
methylene chloride
Concen:    0.01 ppbV
RT:    6.50 min  Scan# 763
Delta R.T.  0.006 min
Lab File:   r154992_Ev2.D
Acq:  2 Jan 2018   3:23 PM

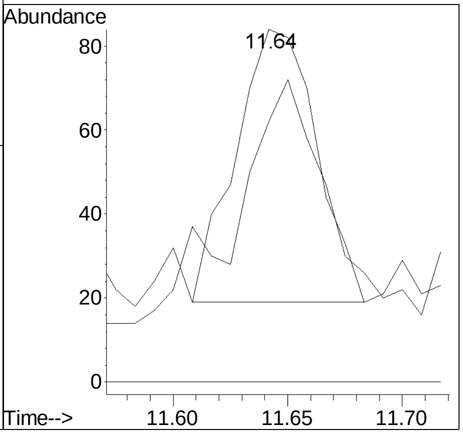
Tgt Ion: 49 Resp:     114
Ion  Ratio  Lower  Upper
 49  100
 84   83.1   51.8   77.8#
```

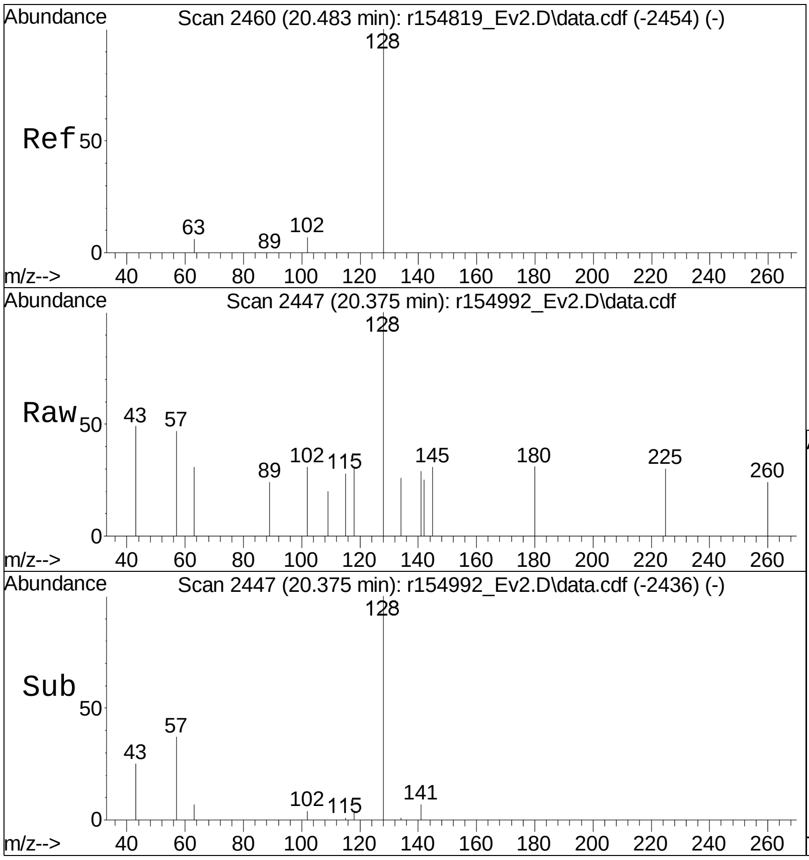




```
#40
Dibromomethane
Concen:    0.01 ppbV
RT:   11.64 min  Scan# 1407
Delta R.T.  0.008 min
Lab File:   r154992_Ev2.D
Acq:  2 Jan 2018   3:23 PM

Tgt Ion: 93 Resp:     159
Ion  Ratio  Lower  Upper
 93  100
174   76.7   63.7   95.5
 94    0.0    0.0    0.0
```

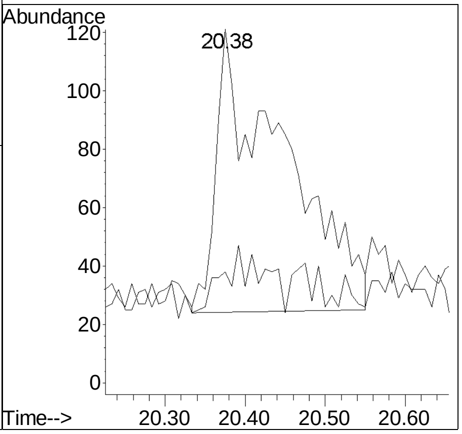




#82
naphthalene
Concen: 0.01 ppbV m
RT: 20.38 min Scan# 2447
Delta R.T. -0.108 min
Lab File: r154992_Ev2.D
Acq: 2 Jan 2018 3:23 PM

Tgt Ion:128 Resp: 572

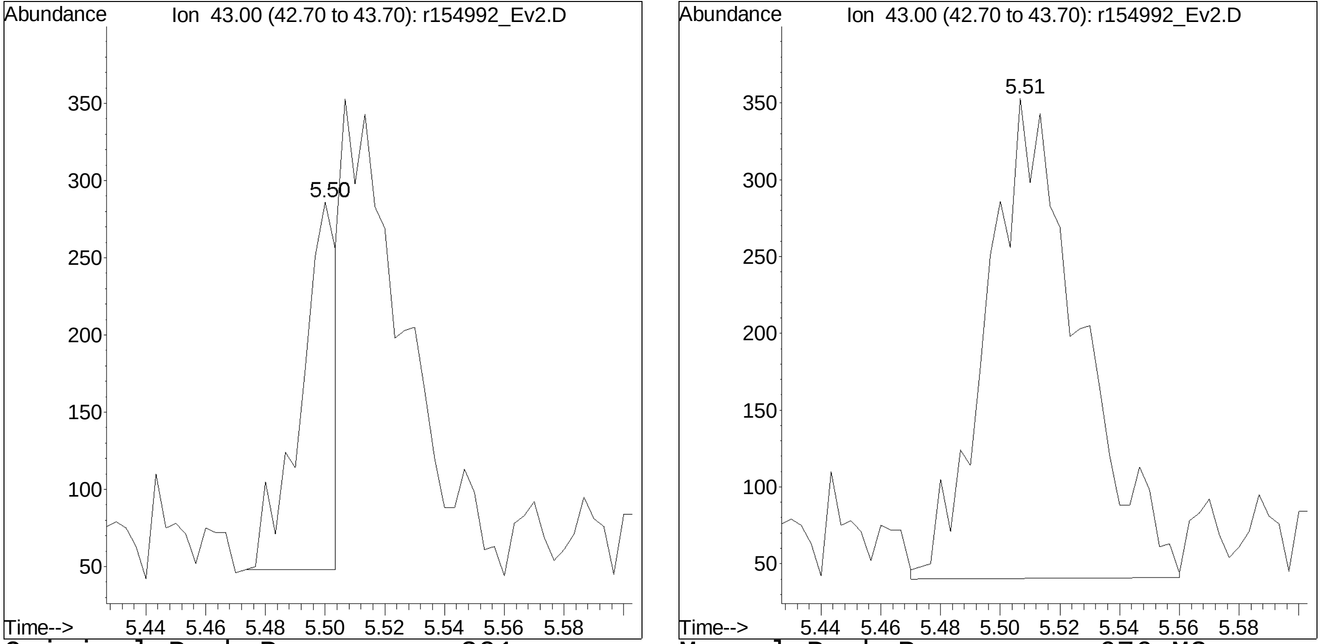
Ion	Ratio	Lower	Upper
128	100		
102	31.4	5.9	8.9#



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154992_Ev2.D              Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018  3:23 PM          Instrument  :
Sample      : WG1078229-4,3,250,250      Quant Date  : 1/2/2018  4:47 pm
```

Compound #12: acetone



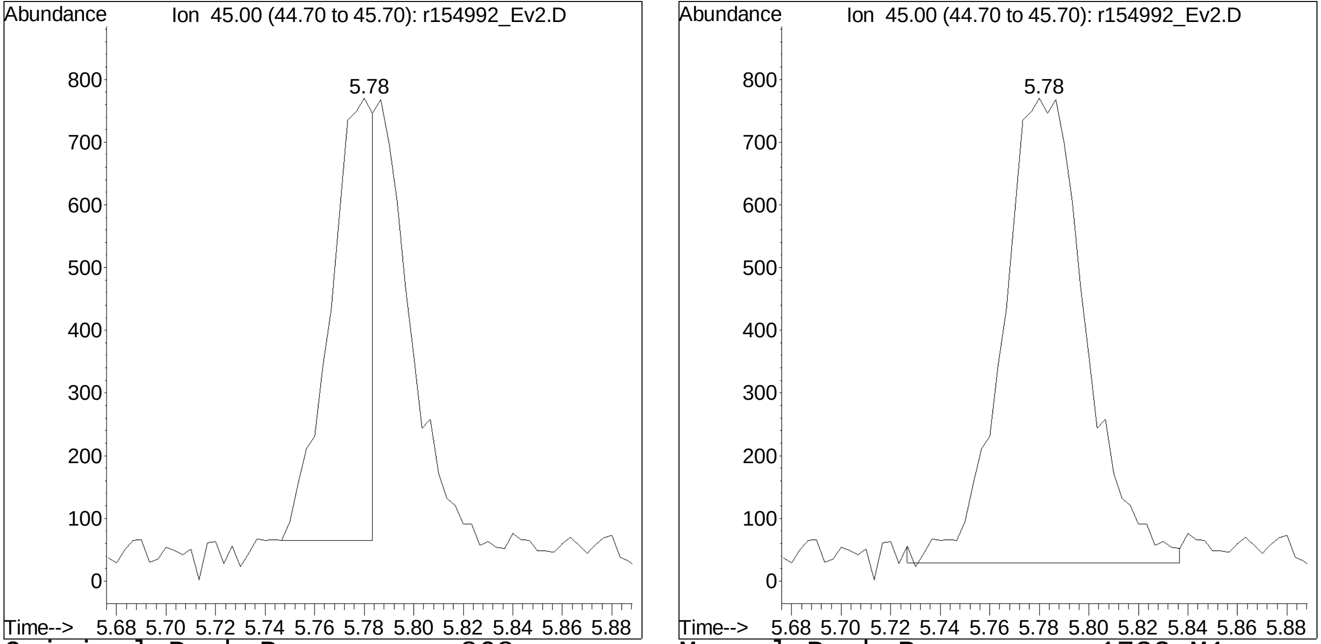
Original Peak Response = 201   Manual Peak Response = 676 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154992_Ev2.D                Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018  3:23 PM            Instrument  :
Sample      : WG1078229-4,3,250,250        Quant Date  : 1/2/2018  4:47 pm
```

Compound #14: isopropyl alcohol



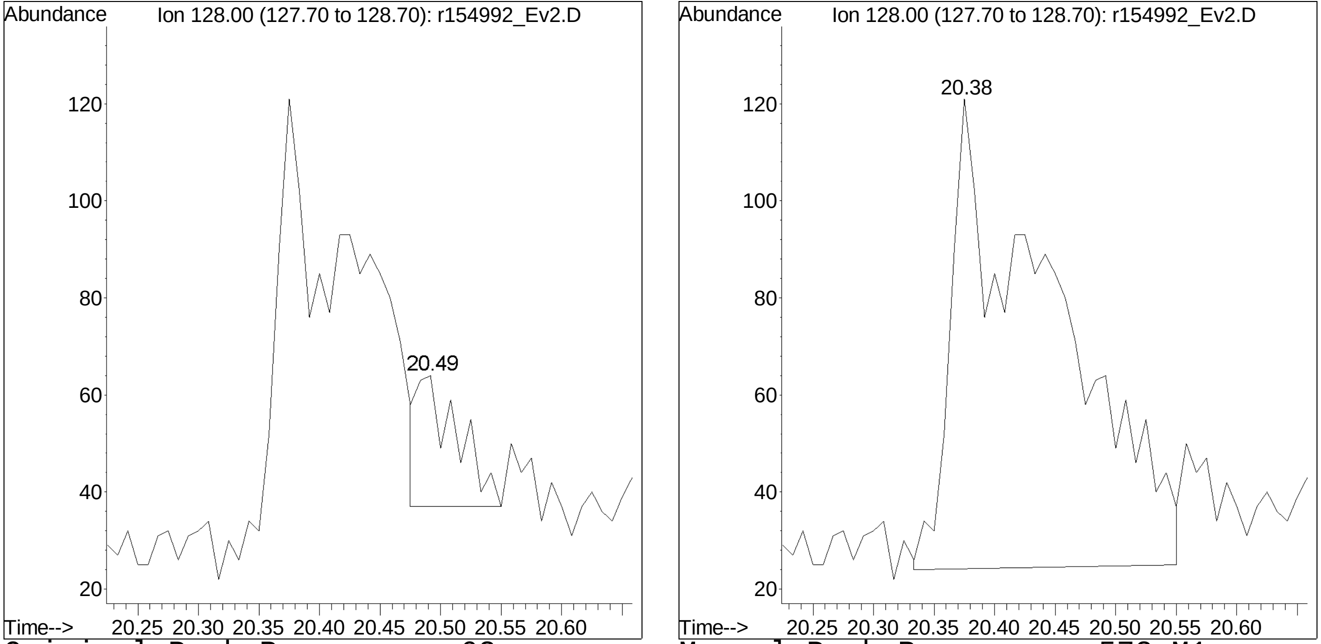
Original Peak Response = 868 Manual Peak Response = 1732 M1

M1 = Split or tailing peak, auto integration stopped early resulting in false low area count.

```
                   Manual Integration/Negative Proof Report

Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154992_Ev2.D                Operator   : AIRLAB15:GJ
Date Inj'd  : 1/2/2018  3:23 PM            Instrument :
Sample      : WG1078229-4,3,250,250        Quant Date : 1/2/2018  4:47 pm

                         Compound #82: naphthalene
```



```
Original Peak Response = 62           Manual Peak Response = 572 M1
M1 = Split or tailing peak, auto integration stopped early resulting in
false low area count.
```

```
                    Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-3,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
   Internal Standards
     1) bromochloromethane         8.92   49   130072    10.000 ppbV     0.00
     Standard Area  =       130072               Recovery   =  100.00%
    33) 1,4-difluorobenzene       11.16  114   339026    10.000 ppbV     0.02
     Standard Area  =       339026               Recovery   =  100.00%
    51) chlorobenzene-D5          15.88   54    58190    10.000 ppbV     0.00
     Standard Area  =        58190               Recovery   =  100.00%

   System Monitoring Compounds

   Target Compounds                                                 Qvalue
     2) propylene                  3.78   41     47603M6    4.699 ppbV
     3) dichlorodifluoromethane    3.85   85     70148      4.601 ppbV     100
     4) chloromethane              4.00   50     34573      4.058 ppbV      99
     5) Freon-114                  4.11   85     83097      4.341 ppbV      95
     6) vinyl chloride             4.23   62     36349      4.354 ppbV     100
     7) 1,3-butadiene              4.37   54     31957      4.402 ppbV      99
     8) bromomethane               4.65   94     34599      4.485 ppbV      96
     9) chloroethane               4.83   64     18407      4.227 ppbV      95
    10) ethanol                    4.96   31    123873     19.776 ppbV      97
    11) vinyl bromide              5.20  106     35802      4.214 ppbV      94
    12) acetone                    5.47   43    228188     22.280 ppbV      99
    13) trichlorofluoromethane     5.66  101     61594      4.731 ppbV      99
    14) isopropyl alcohol          5.75   45    152881     10.402 ppbV     100
    15) acrylonitrile              5.98   53     26746      3.660 ppbV      97
    16) 1,1-dichloroethene         6.36   61     47340      4.515 ppbV      98
    17) tertiary butyl alcohol     6.41   59     49614      3.388 ppbV      92
    18) methylene chloride         6.49   49     42382      4.253 ppbV      96
    19) 3-chloropropene            6.63   41     54386      4.654 ppbV      99
    20) carbon disulfide           6.80   76     97659      3.996 ppbV      95
    21) Freon 113                  6.80  101     67487      4.686 ppbV      94
    22) Halothane                  7.33  117     65851      5.489 ppbV      97
    23) trans-1,2-dichloroethene   7.55   61     71286      4.803 ppbV      99
    24) 1,1-dichloroethane         7.77   63     86171      4.827 ppbV      98
    25) MTBE                       7.85   73    107091      4.491 ppbV      98
    26) vinyl acetate              7.97   43    130433      5.039 ppbV      98
    27) 2-butanone                 8.23   43    114877      4.537 ppbV      96
    28) cis-1,2-dichloroethene     8.72   61     65321      5.088 ppbV      98
    29) Ethyl Acetate              9.01   61     18416      5.158 ppbV      88
    30) chloroform                 9.07   83     79399      4.958 ppbV      99
```

```
                   Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : R154990_Ev2.D
Acq On    :  2 Jan 2018  12:12 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-3,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 13:05:00 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
Sub List     : Default-SIM-LCS - All compounds listed

        Compound                   R.T. QIon  Response  Conc Units Dev(Min)
 --------------------------------------------------------------------------
  31) Tetrahydrofuran               9.53   42     72270M6    4.500 ppbV
  32) 1,2-dichloroethane            9.91   62     50654      4.987 ppbV       97
  34) hexane                        8.98   57     87395      4.649 ppbV       99
  36) 1,1,1-trichloroethane        10.20   97     67916      4.644 ppbV       98
  37) benzene                      10.73   78    151646      4.181 ppbV      100
  38) carbon tetrachloride         10.90  117     59726      4.879 ppbV       99
  39) cyclohexane                  11.04   56     93090      4.564 ppbV       97
  40) Dibromomethane               11.65   93     46541      3.789 ppbV #     99
  41) 1,2-dichloropropane          11.68   63     60211      4.428 ppbV       99
  42) bromodichloromethane         11.91   83     86055      4.811 ppbV       99
  43) 1,4-dioxane                  11.96   88     39460      4.739 ppbV       99
  44) trichloroethene              11.96  130     63210      4.532 ppbV       98
  45) 2,2,4-trimethylpentane       12.01   57    296721      4.694 ppbV       97
  46) heptane                      12.32   43    126316      4.272 ppbV       94
  47) cis-1,3-dichloropropene      12.98   75     76295      4.562 ppbV       98
  48) 4-methyl-2-pentanone         13.02   43    144963      4.287 ppbV       95
  49) trans-1,3-dichloropropene    13.60   75     60546      3.957 ppbV       98
  50) 1,1,2-trichloroethane        13.80   97     62357      4.629 ppbV       98
  52) toluene                      14.13   91    189220      4.691 ppbV       99
  54) 2-hexanone                   14.42   43    129130      4.427 ppbV       94
  55) dibromochloromethane         14.57  129     86200      5.289 ppbV       99
  56) 1,2-dibromoethane            14.83  107     89949      4.883 ppbV       99
  57) tetrachloroethene            15.29  166     69324      4.735 ppbV       99
  58) 1,1,1,2-tetrachloroethane    15.91  131     56604      4.565 ppbV       99
  59) chlorobenzene                15.93  112    148191      4.793 ppbV       98
  60) ethylbenzene                 16.26   91    241821      4.918 ppbV       98
  61) m+p-xylene                   16.43   91    394738      9.857 ppbV       99
  62) bromoform                    16.48  173     68540      5.546 ppbV       98
  63) styrene                      16.73  104    155910      4.827 ppbV       99
  64) 1,1,2,2-tetrachloroethane    16.82   83    141526      4.952 ppbV       99
  65) o-xylene                     16.82   91    201953      4.986 ppbV      100
  66) 1,2,3-Trichloropropane       16.93   75    100680      4.366 ppbV       97
  68) isopropylbenzene             17.32  105    242315      4.601 ppbV       98
  69) Bromobenzene                 17.38   77    129357      4.378 ppbV       98
  70) 4-ethyl toluene              17.85  105    283414      4.884 ppbV       99
  71) 1,3,5-trimethylbenzene       17.91  105    231405      5.001 ppbV      100
  72) tert-butylbenzene            18.24  119    226633      4.636 ppbV       96
  73) 1,2,4-trimethylbenzene       18.24  105    233486      5.136 ppbV       97
  74) Benzyl Chloride              18.36   91    158659      5.239 ppbV       98
  75) 1,3-dichlorobenzene          18.38  146    155500M3    5.027 ppbV
```

```
                         Quantitation Report    (QT Reviewed)

  Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
  Data File : R154990_Ev2.D
  Acq On    :  2 Jan 2018  12:12 PM
  Operator  : AIRLAB15:GJ
  Sample    : WG1078229-3,3,250,250
  Misc      : WG1078229,ICAL14300
  ALS Vial  : 0   Sample Multiplier: 1

  Quant Time: Jan 02 13:05:00 2018
  Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
  Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
  QLast Update : Sat Dec 23 10:17:55 2017
  Response via : Initial Calibration

  CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
  Sub List     : Default-SIM-LCS - All compounds listed

          Compound                     R.T. QIon  Response  Conc Units Dev(Min)
   ---------------------------------------------------------------------------
    76) 1,4-dichlorobenzene          18.43  146    151760      4.952 ppbV      98
    77) sec-butylbenzene             18.47  105    309599      4.631 ppbV      98
    78) p-isopropyltoluene           18.59  119    255845      4.428 ppbV      99
    79) 1,2-dichlorobenzene          18.72  146    144515      5.073 ppbV      96
    80) n-butylbenzene               18.93   91    256123      4.916 ppbV      94
    81) 1,2,4-trichlorobenzene       20.24  180    111634      5.635 ppbV      98
    82) naphthalene                  20.36  128    293176      5.200 ppbV      99
    83) 1,2,3-trichlorobenzene       20.62  180     98813      5.256 ppbV      97
    84) hexachlorobutadiene          20.69  225     94541      5.715 ppbV      99
   ---------------------------------------------------------------------------

   (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : Default-SIM-LCS - All compounds listedSIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : R154990_Ev2.D
Acq On    :  2 Jan 2018  12:12 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-3,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 02 13:05:00 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
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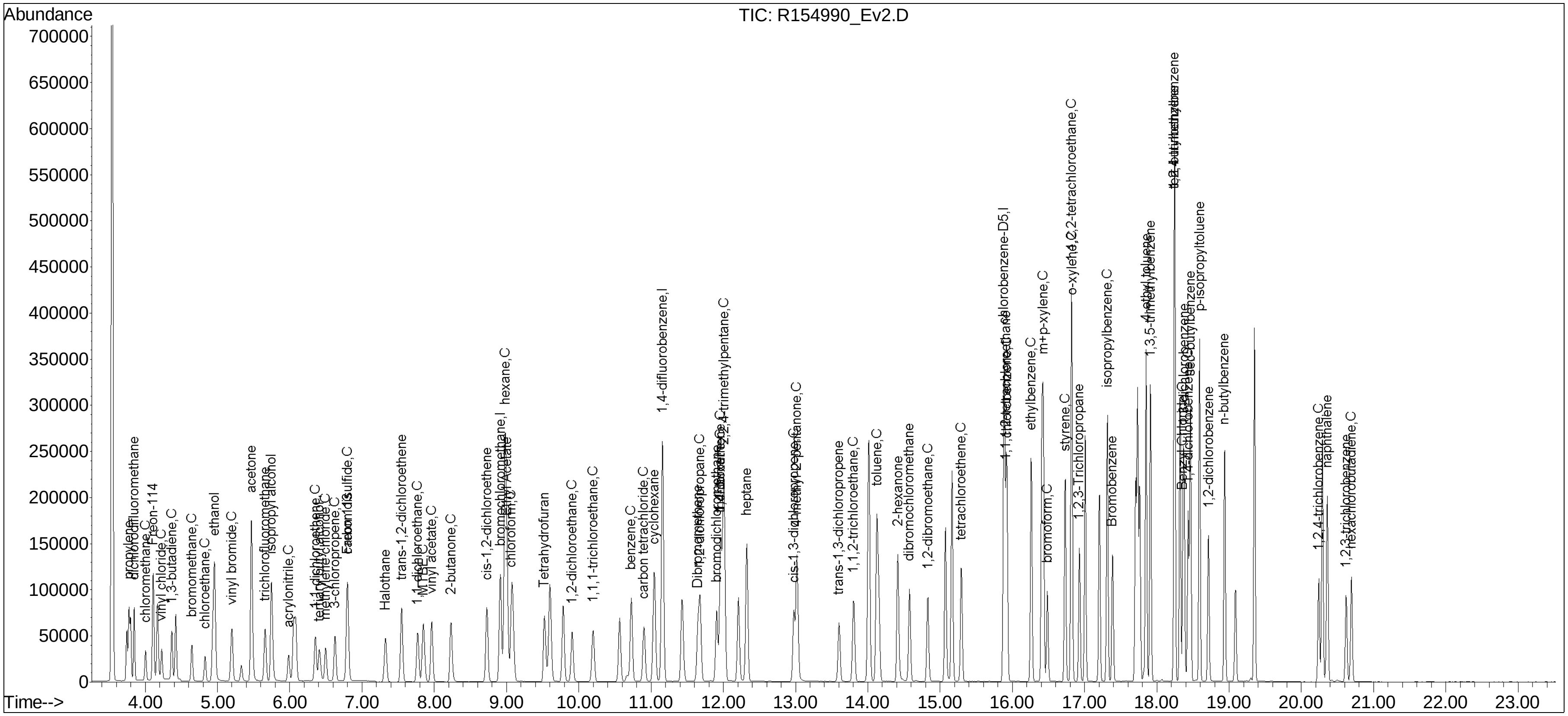
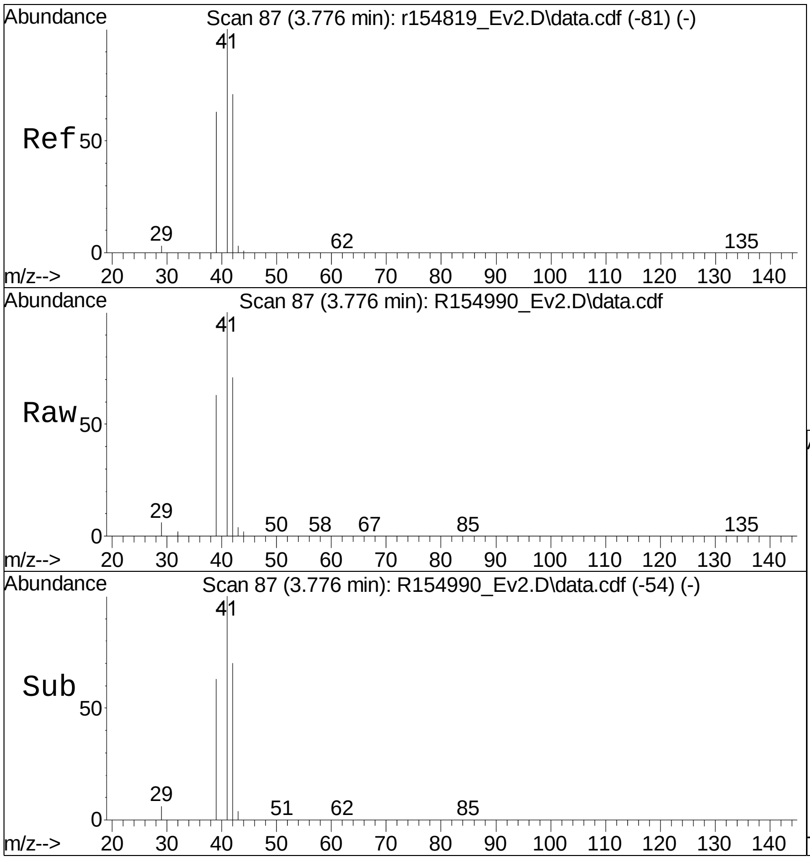
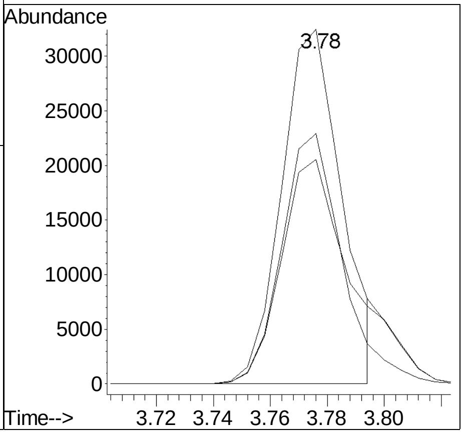
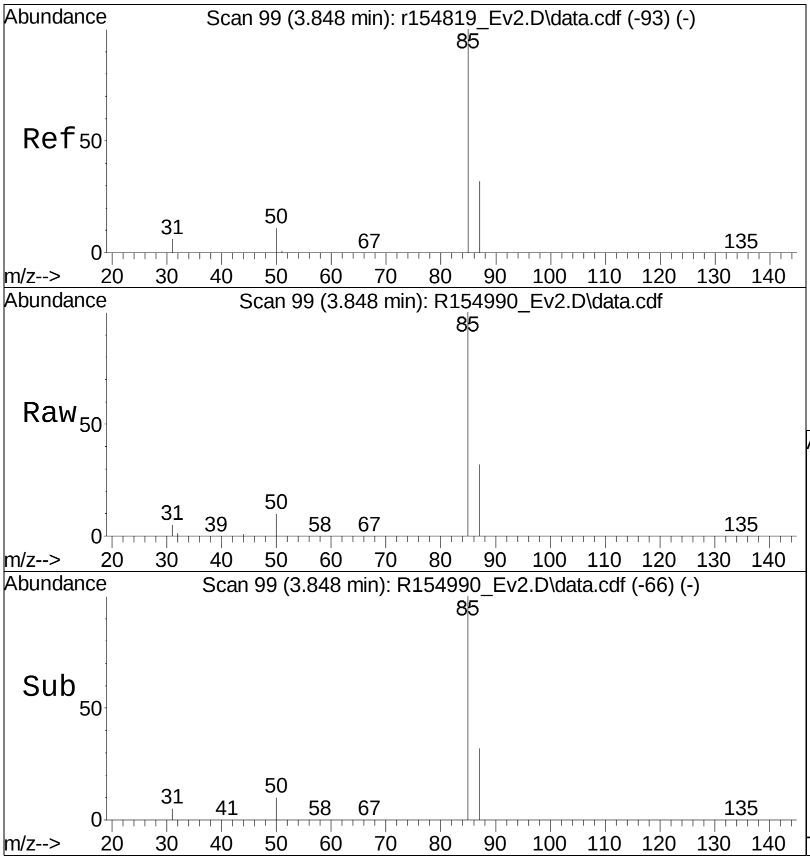




```
#2
propylene
Concen:    4.70 ppbV m
RT:    3.78 min  Scan# 87
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

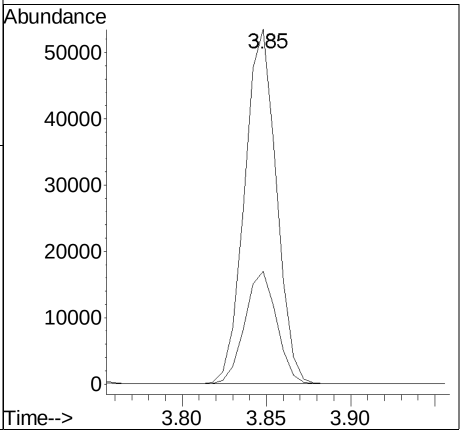
Tgt Ion: 41 Resp:   47603
Ion  Ratio  Lower  Upper
 41  100
 42   70.6   57.2   85.8
 39   63.3   50.2   75.4
```

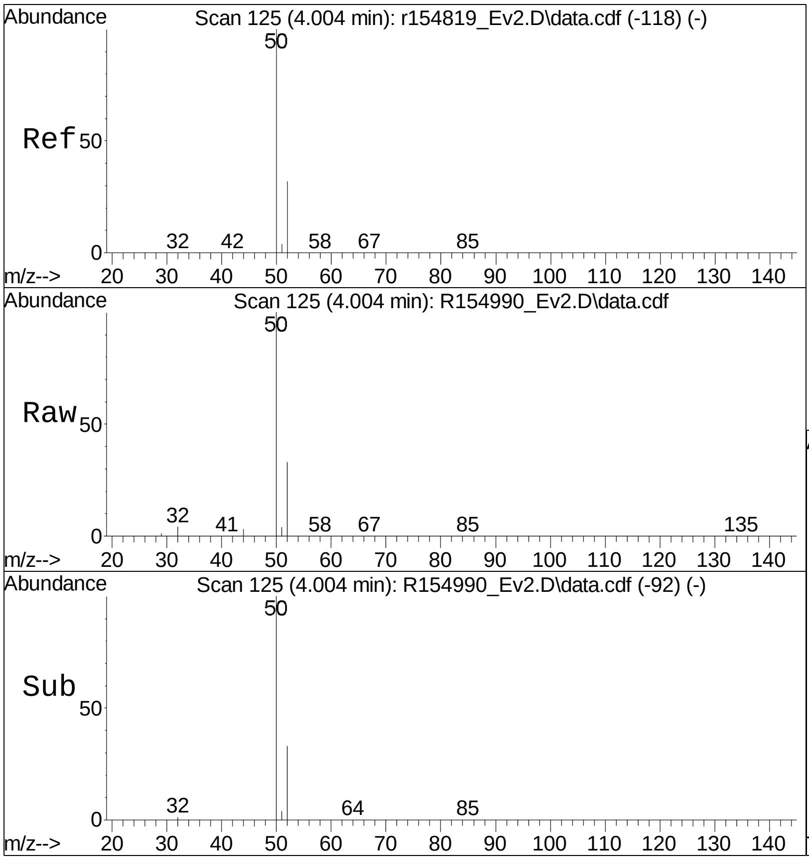




```
#3
dichlorodifluoromethane
Concen:    4.60 ppbV
RT:    3.85 min  Scan# 99
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 85 Resp:   70148
Ion  Ratio  Lower  Upper
 85  100
 87   31.7   25.5   38.3
```

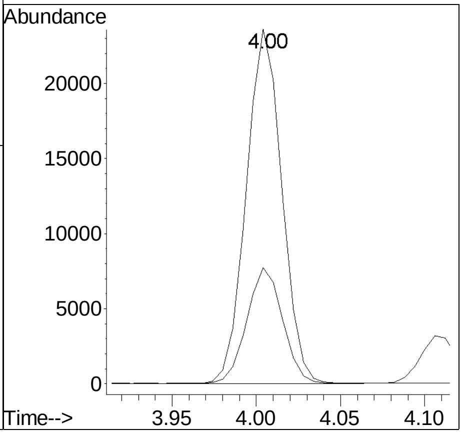


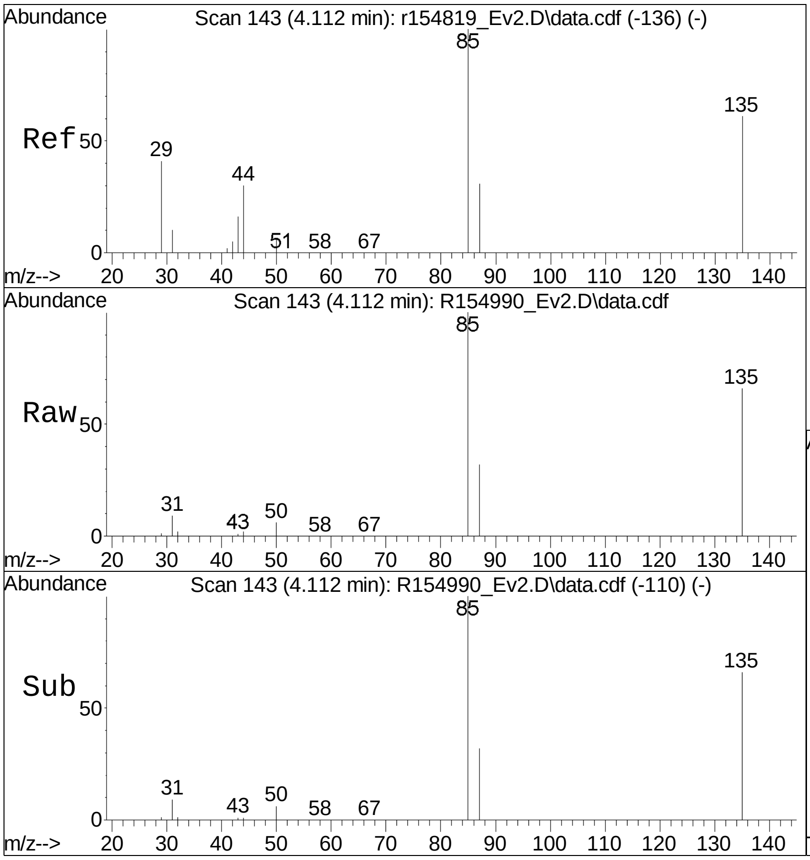


#4
chloromethane
Concen: 4.06 ppbV
RT: 4.00 min Scan# 125
Delta R.T. 0.000 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 50 Resp: 34573

Ion	Ratio	Lower	Upper
50	100		
52	32.8	25.6	38.4

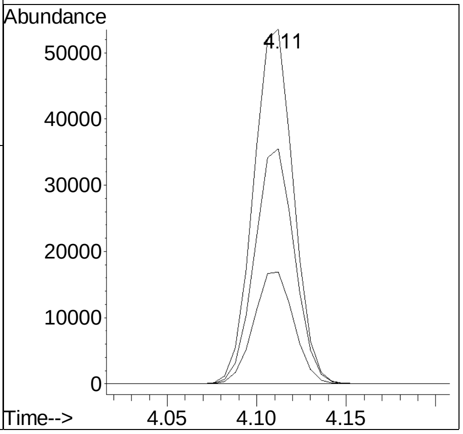


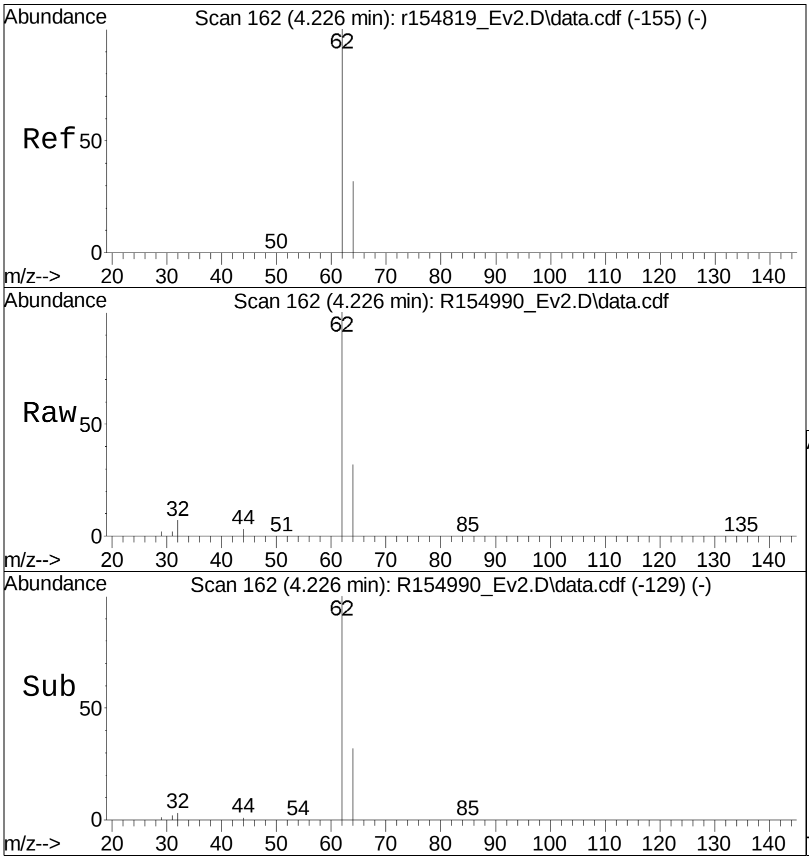


#5
Freon-114
Concen: 4.34 ppbV
RT: 4.11 min Scan# 143
Delta R.T. 0.000 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 85 Resp: 83097

Ion	Ratio	Lower	Upper
85	100		
87	31.6	25.0	37.6
135	66.3	48.5	72.7

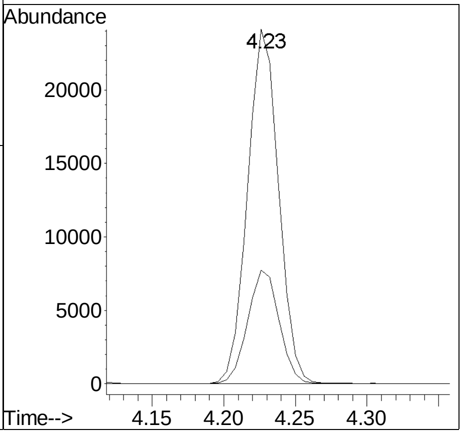


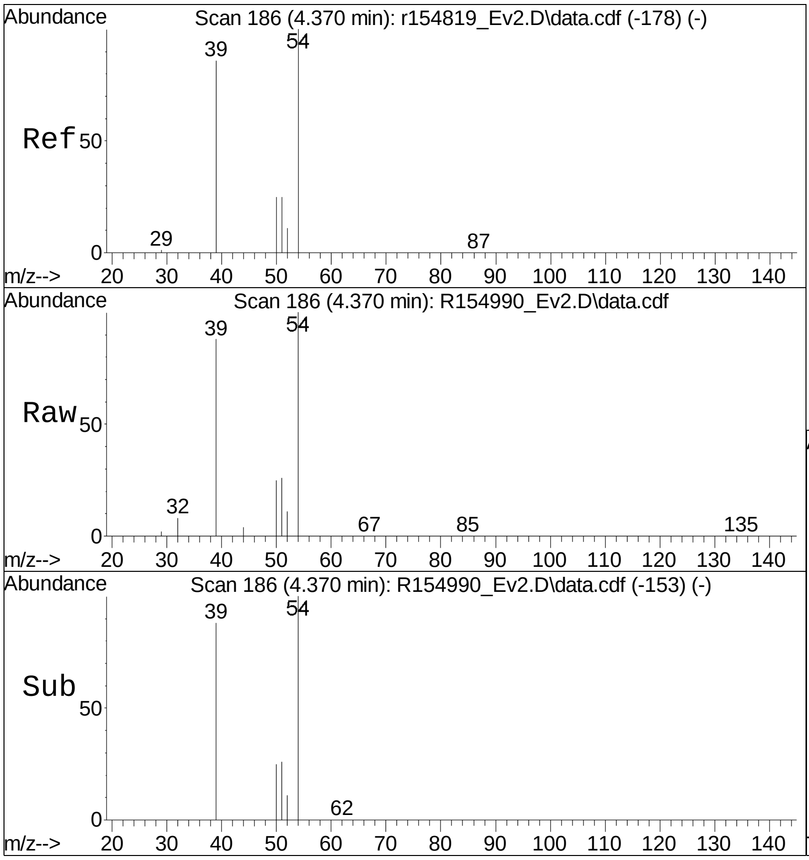


#6
vinyl chloride
Concen: 4.35 ppbV
RT: 4.23 min Scan# 162
Delta R.T. 0.000 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 62 Resp: 36349

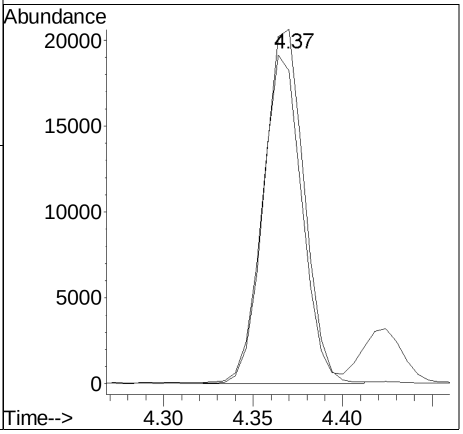
Ion	Ratio	Lower	Upper
62	100		
64	32.1	25.6	38.4

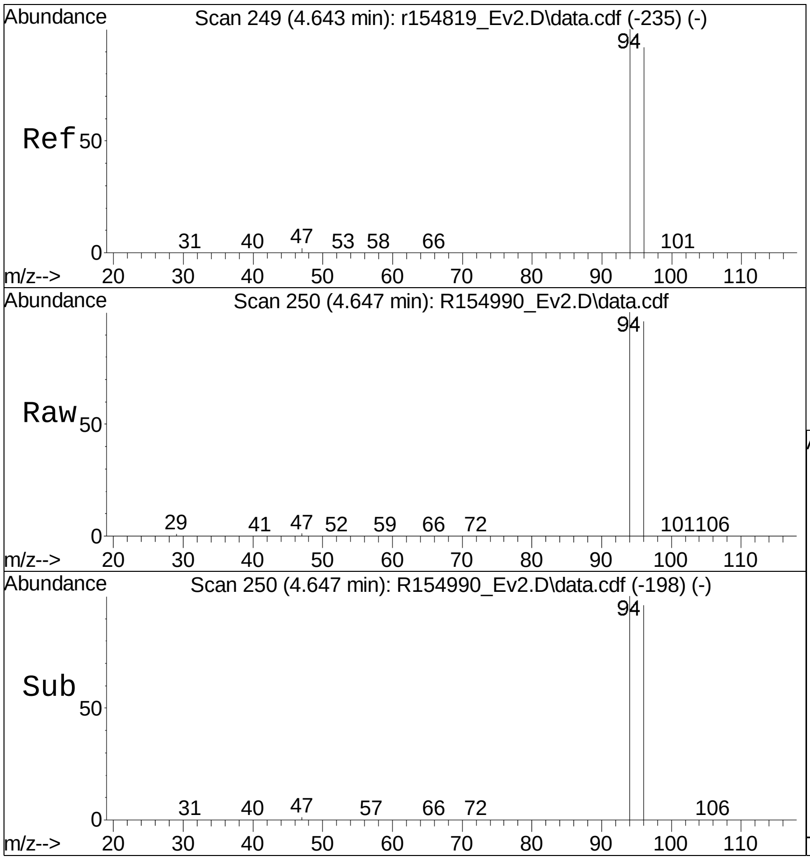




```
#7
1,3-butadiene
Concen:    4.40 ppbV
RT:    4.37 min  Scan# 186
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

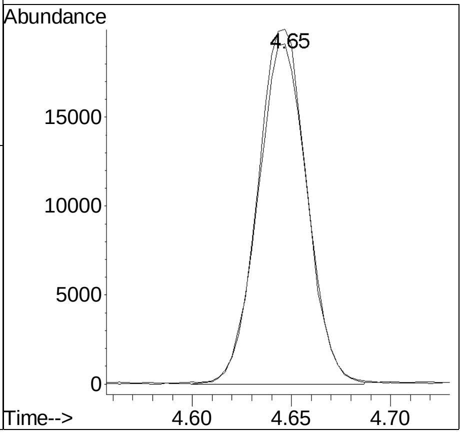
Tgt Ion: 54 Resp:   31957
Ion  Ratio  Lower  Upper
 54  100
 39   88.2   69.6  104.4
```

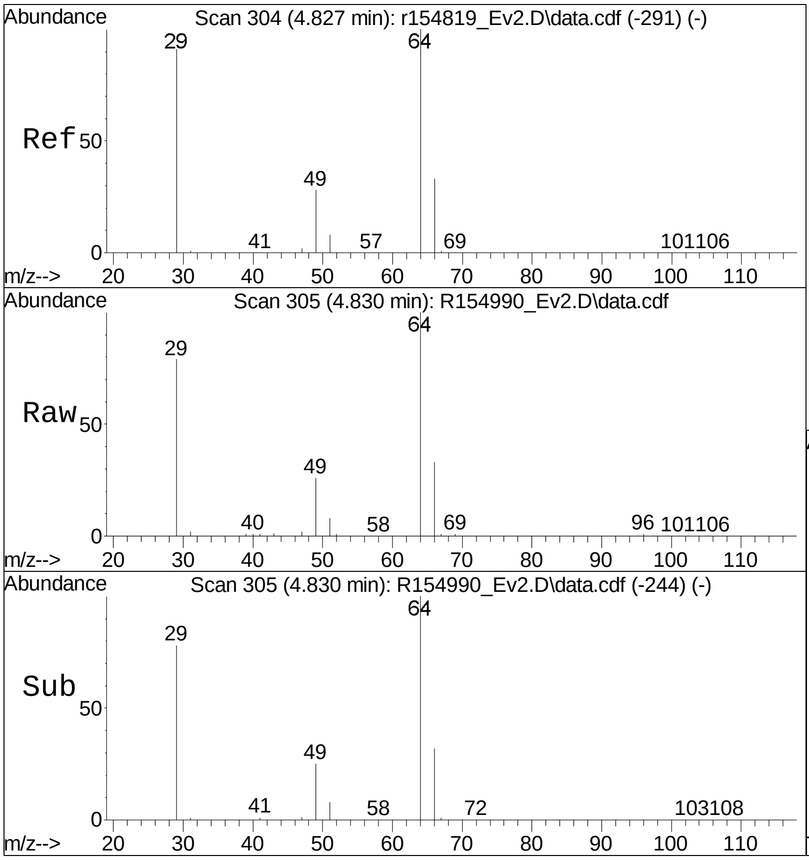




```
#8
bromomethane
Concen:    4.49 ppbV
RT:    4.65 min  Scan# 250
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

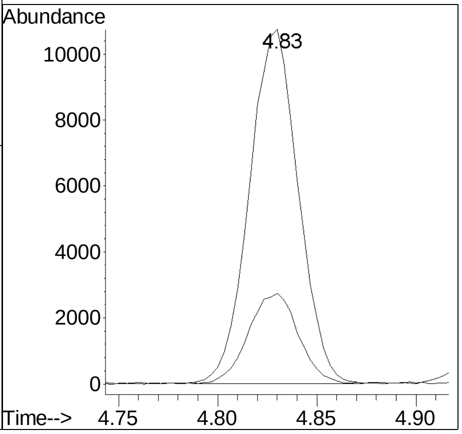
Tgt Ion: 94 Resp:   34599
Ion  Ratio  Lower  Upper
 94  100
 96   95.9   73.6  110.4
```

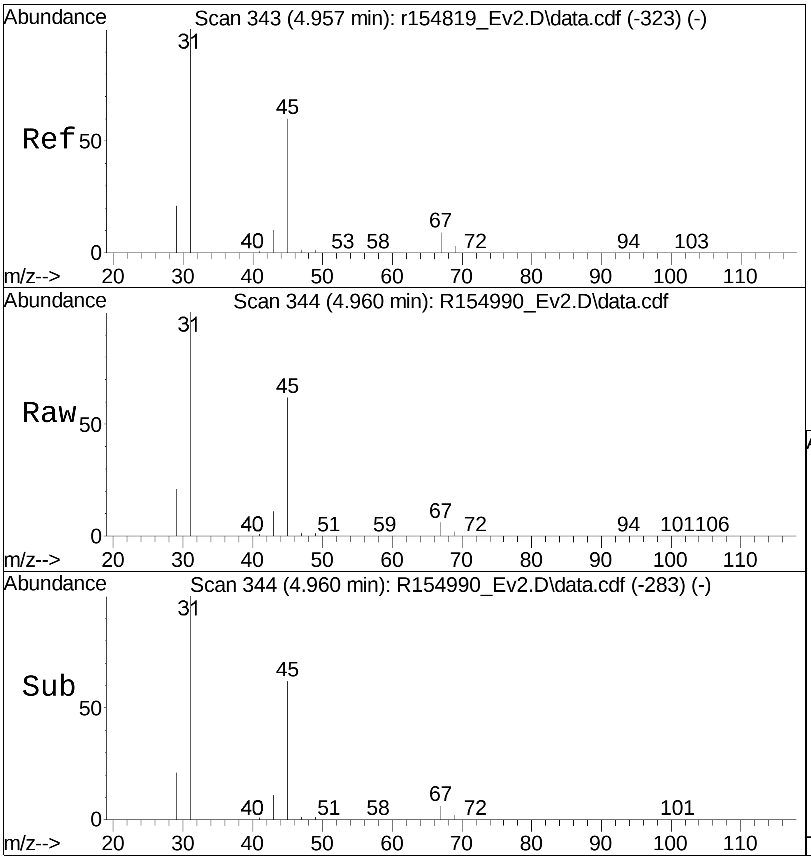




```
#9
chloroethane
Concen:    4.23 ppbV
RT:    4.83 min  Scan# 305
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

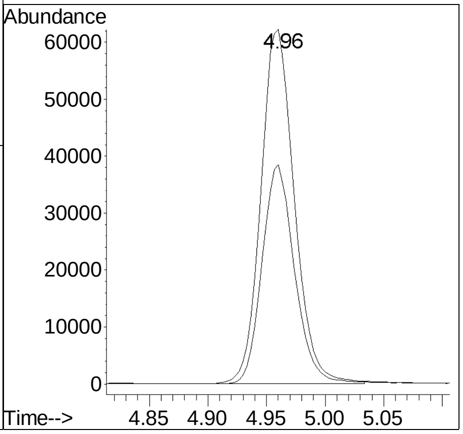
Tgt Ion: 64 Resp:   18407
Ion  Ratio  Lower  Upper
 64  100
 49   25.6   22.6   34.0
```

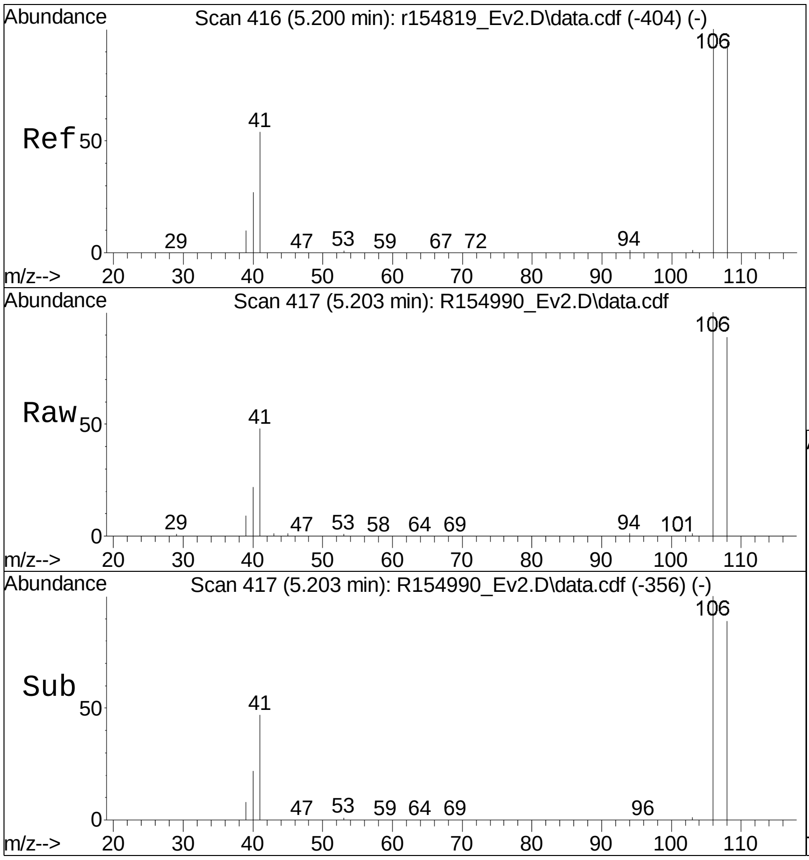




```
#10
ethanol
Concen:   19.78 ppbV
RT:    4.96 min  Scan# 344
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

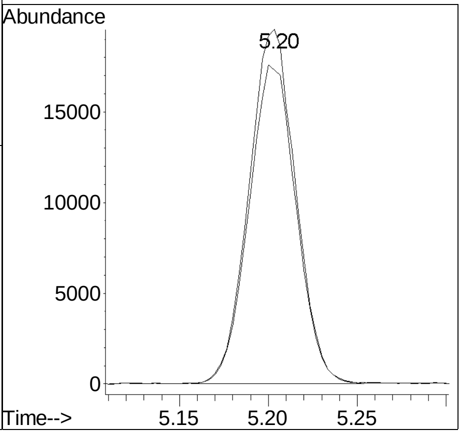
Tgt Ion: 31 Resp:  123873
Ion  Ratio  Lower  Upper
 31  100
 45   61.9   47.7   71.5
```

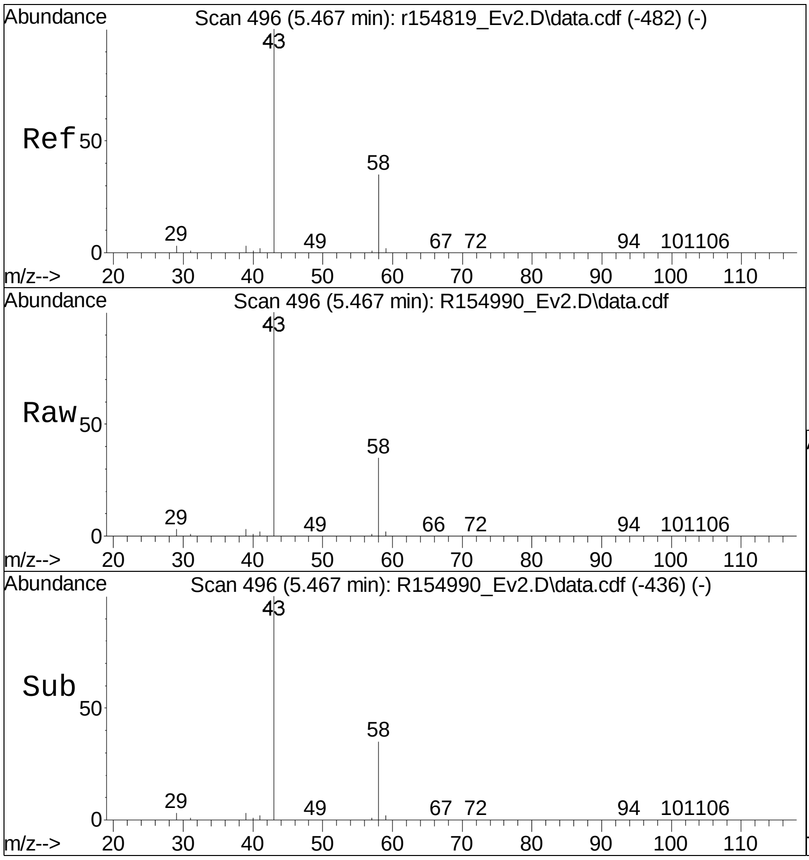




```
#11
vinyl bromide
Concen:    4.21 ppbV
RT:    5.20 min  Scan# 417
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

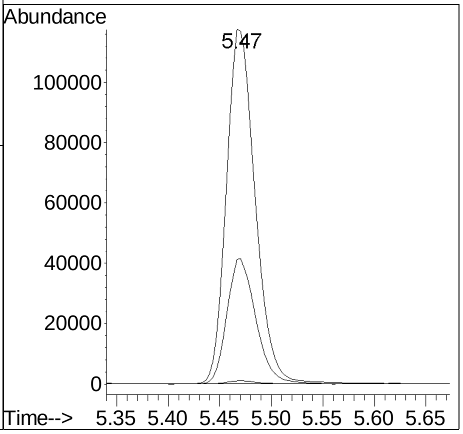
Tgt Ion:106 Resp:   35802
Ion  Ratio  Lower  Upper
106  100
108   88.5   75.4  113.2
```

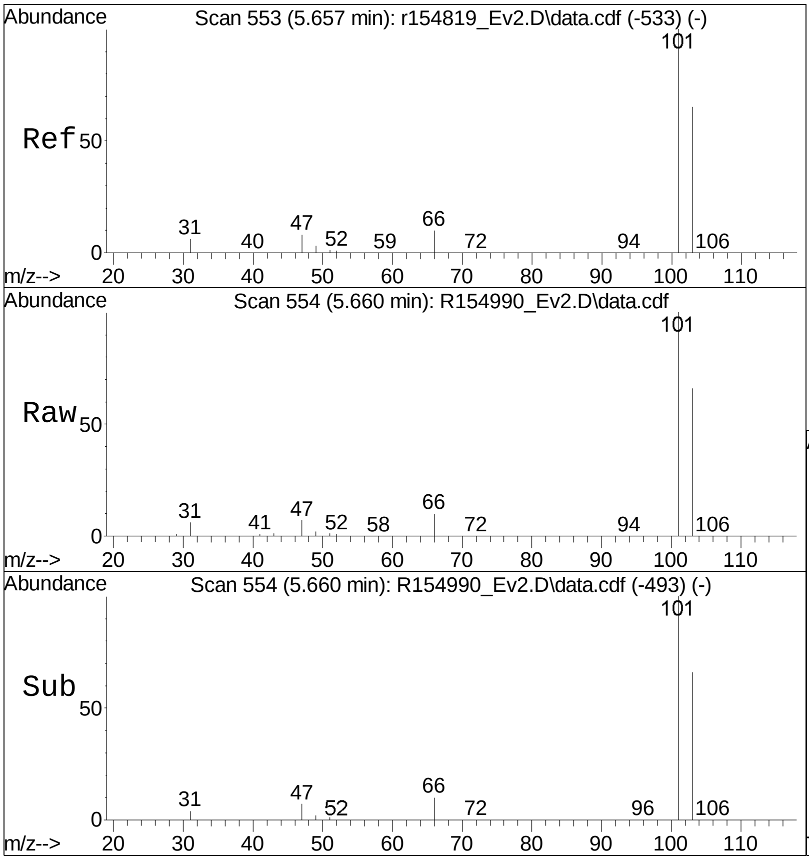




```
#12
acetone
Concen:   22.28 ppbV
RT:    5.47 min  Scan# 496
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

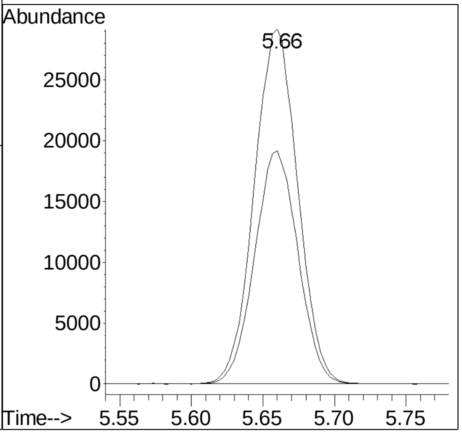
Tgt Ion: 43 Resp:  228188
Ion  Ratio  Lower  Upper
 43  100
 58   35.1   27.8   41.6
 57    0.9    0.7    1.1
```

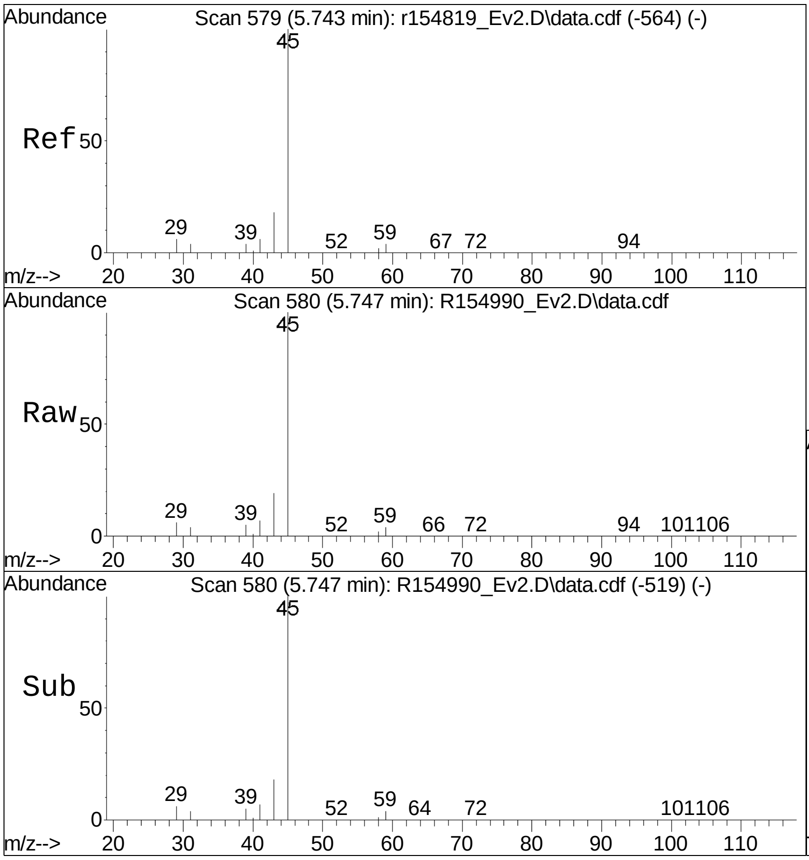




```
#13
trichlorofluoromethane
Concen:    4.73 ppbV
RT:    5.66 min  Scan# 554
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

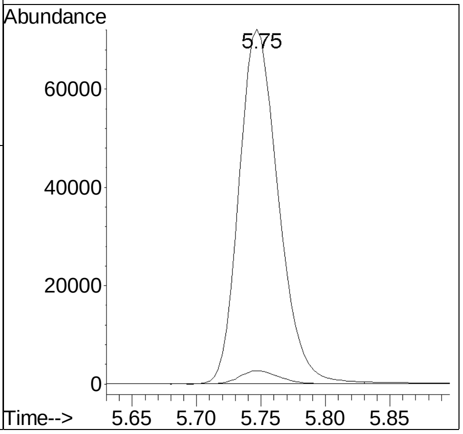
Tgt Ion:101 Resp:   61594
Ion  Ratio  Lower  Upper
101  100
103   65.8   52.2   78.2
```

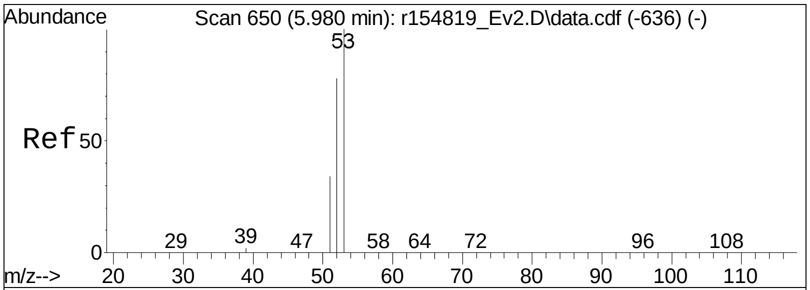


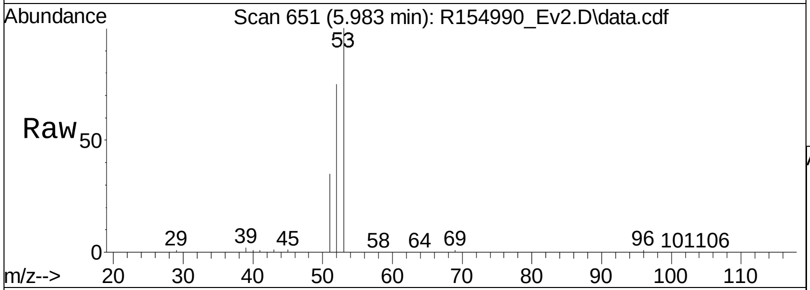


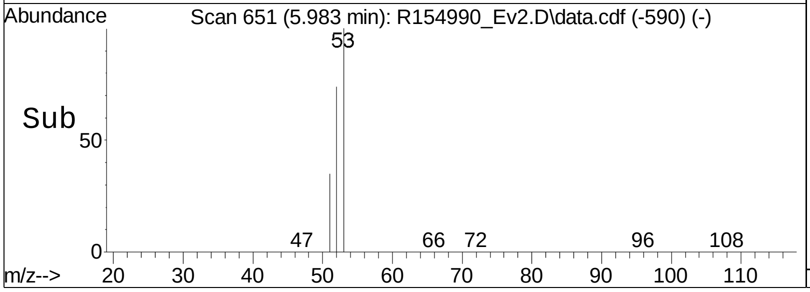
```
#14
isopropyl alcohol
Concen:   10.40 ppbV
RT:    5.75 min  Scan# 580
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 45 Resp:  152881
Ion  Ratio  Lower  Upper
 45  100
 59    3.7    2.9    4.3
```



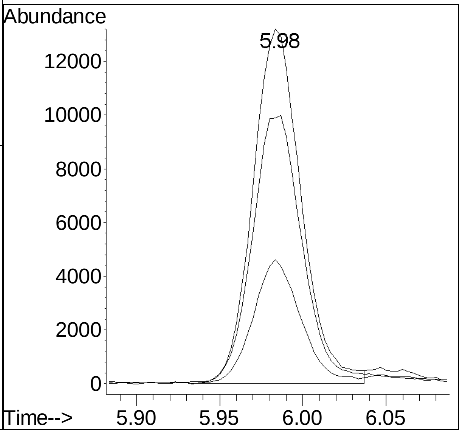


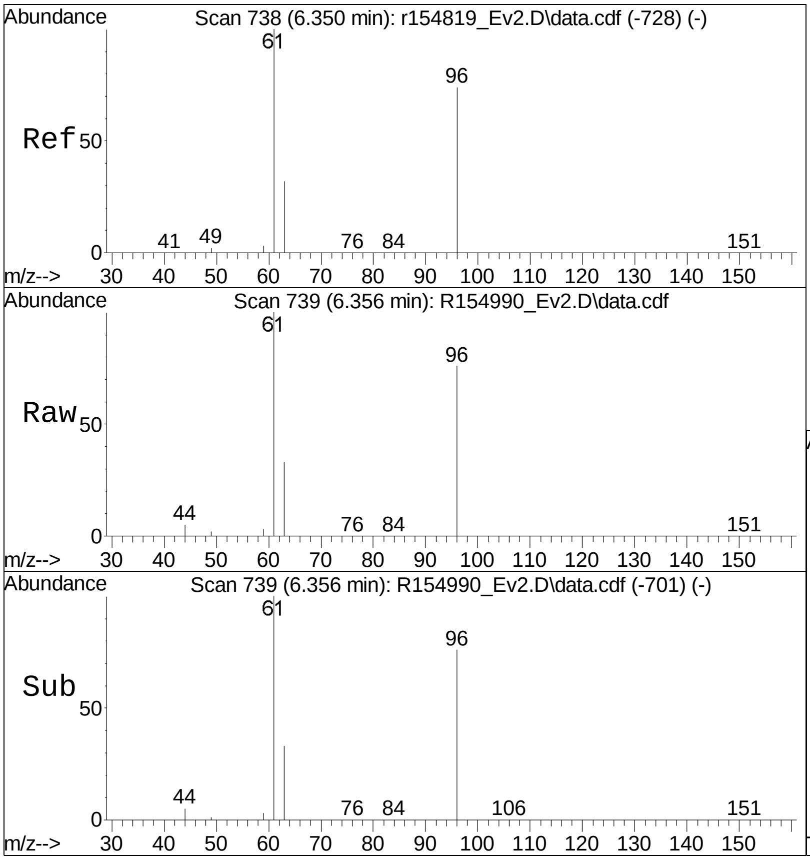




```
#15
acrylonitrile
Concen:    3.66 ppbV
RT:    5.98 min  Scan# 651
Delta R.T.  0.003 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 53 Resp:   26746
Ion  Ratio  Lower  Upper
 53  100
 52   74.9   62.6   94.0
 51   34.9   27.4   41.2
```

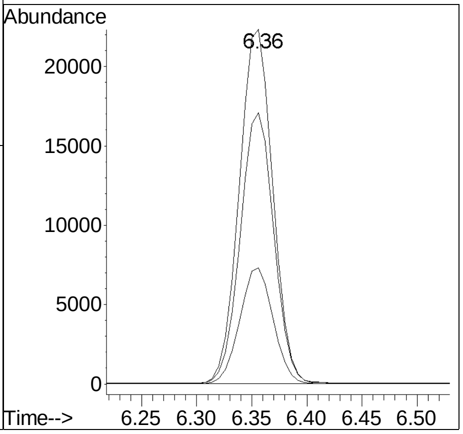


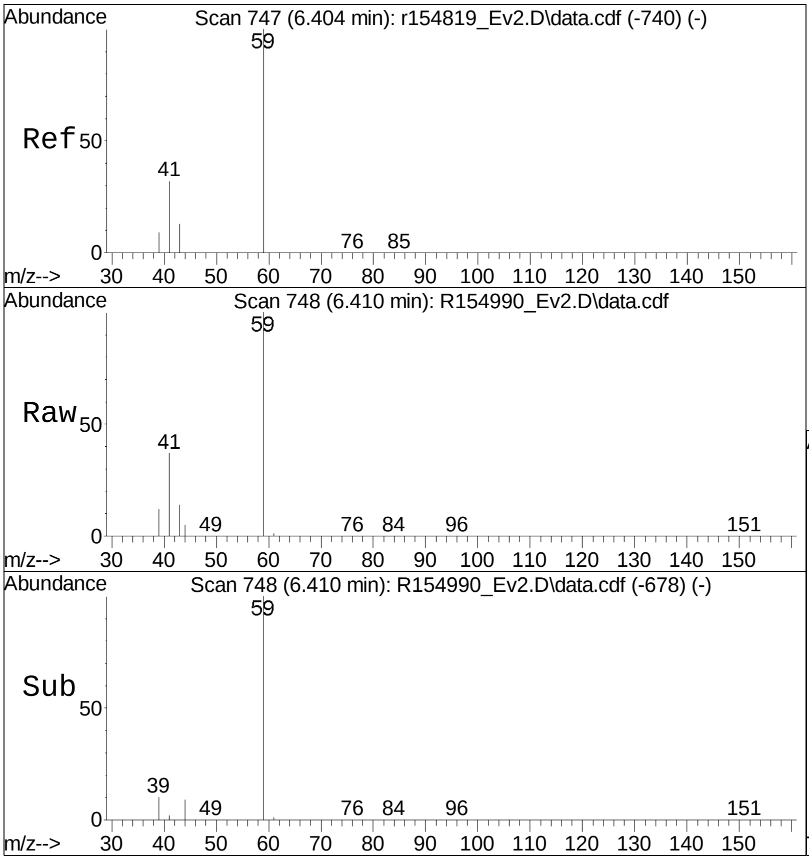


#16
1,1-dichloroethene
Concen: 4.51 ppbV
RT: 6.36 min Scan# 739
Delta R.T. 0.006 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 61 Resp: 47340

Ion	Ratio	Lower	Upper
61	100		
96	76.5	59.0	88.4
63	32.8	25.9	38.9

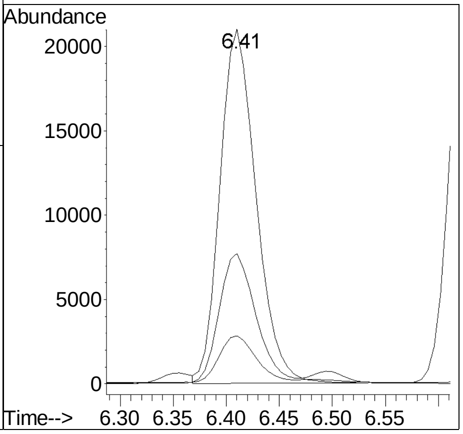


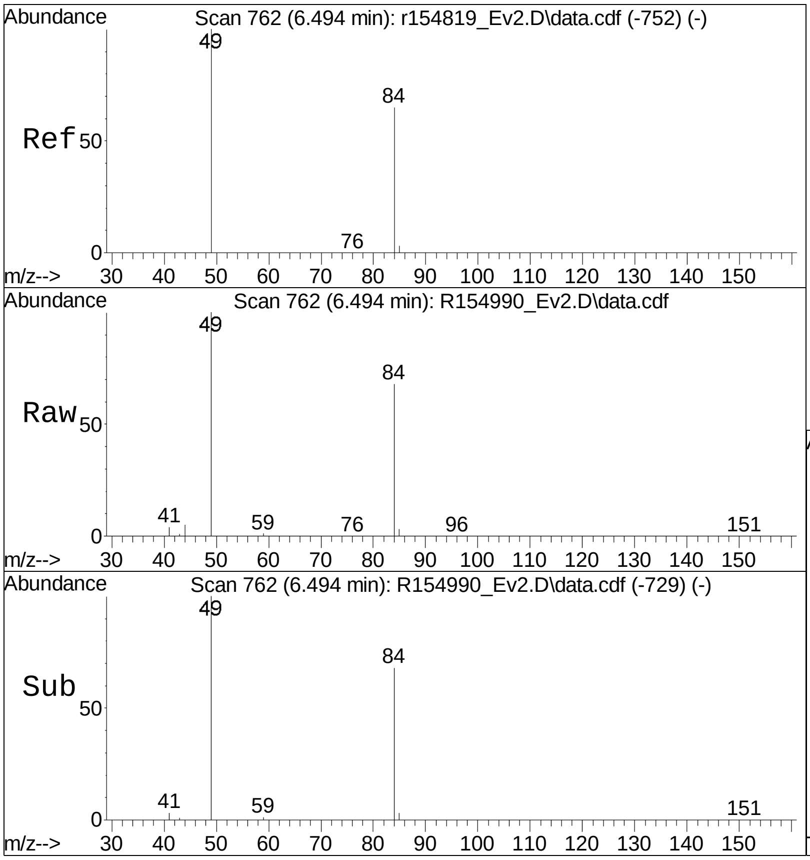


#17
tertiary butyl alcohol
Concen: 3.39 ppbV
RT: 6.41 min Scan# 748
Delta R.T. 0.006 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 59 Resp: 49614

Ion	Ratio	Lower	Upper
59	100		
41	37.4	25.3	37.9
43	13.3	10.5	15.7

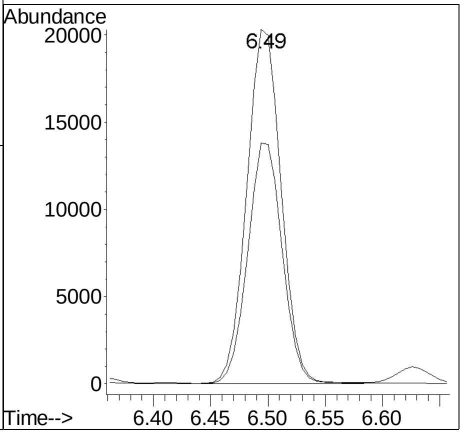


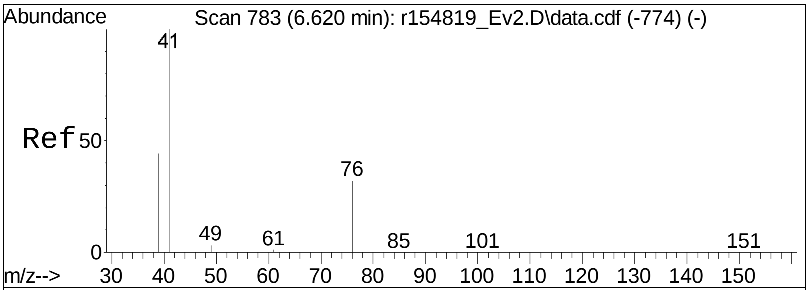


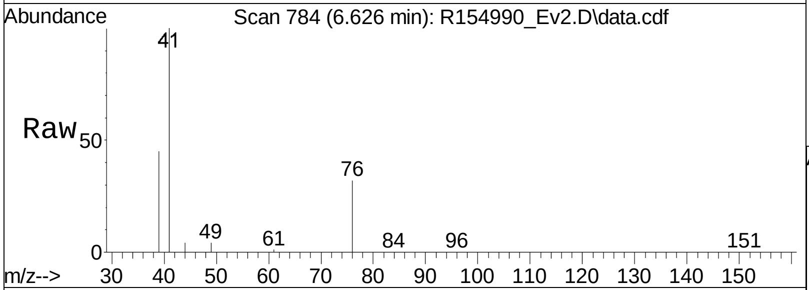
#18
methylene chloride
Concen: 4.25 ppbV
RT: 6.49 min Scan# 762
Delta R.T. 0.000 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

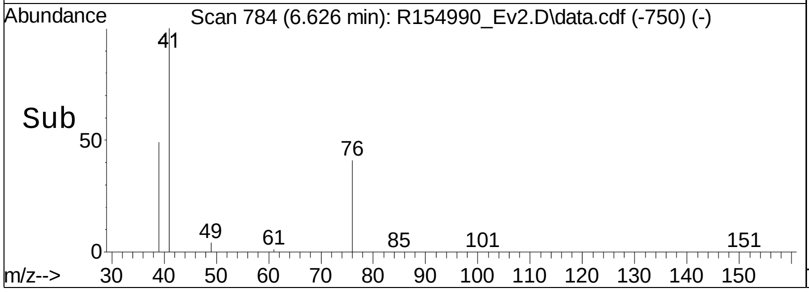
Tgt Ion: 49 Resp: 42382

Ion	Ratio	Lower	Upper
49	100		
84	67.9	51.8	77.8



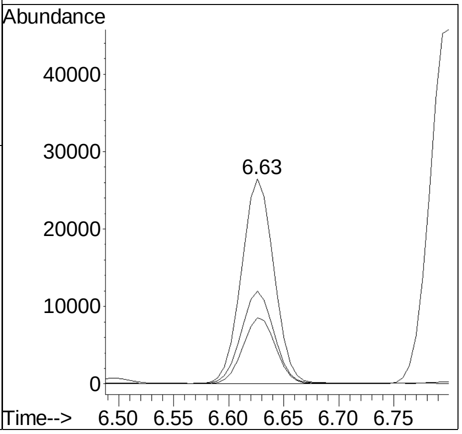






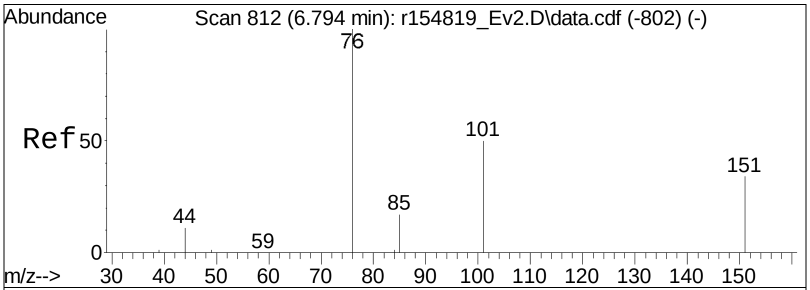
```
#19
3-chloropropene
Concen:    4.65 ppbV
RT:    6.63 min  Scan# 784
Delta R.T.  0.006 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

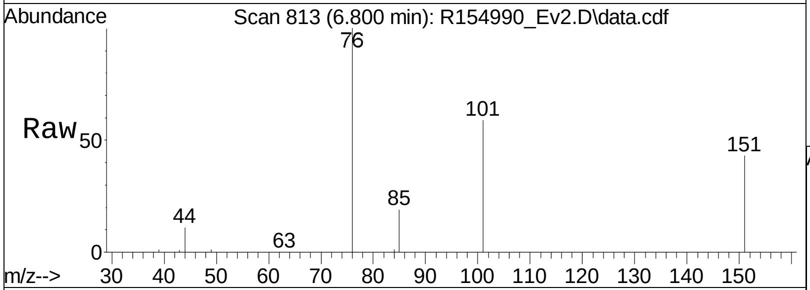
Tgt Ion: 41 Resp:   54386
Ion  Ratio  Lower  Upper
 41  100
 39   45.2   35.7   53.5
 76   32.3   25.4   38.2
```

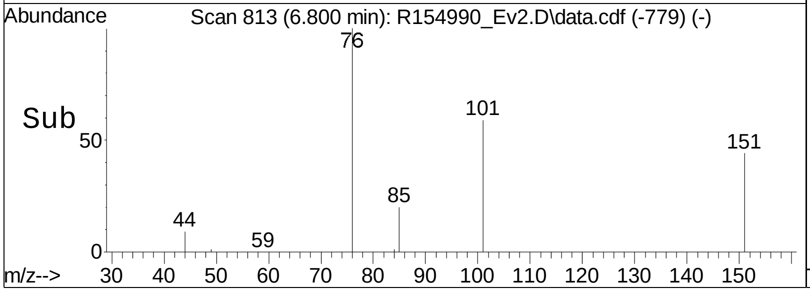


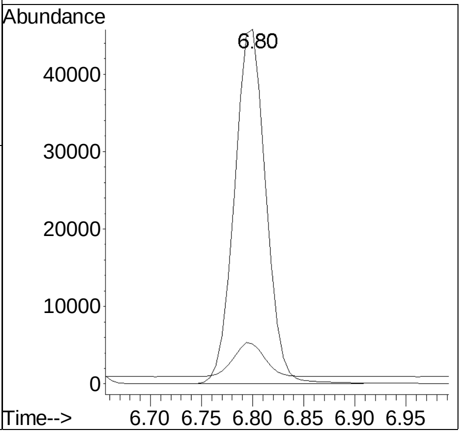
```
#20
carbon disulfide
Concen:    4.00 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.006 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

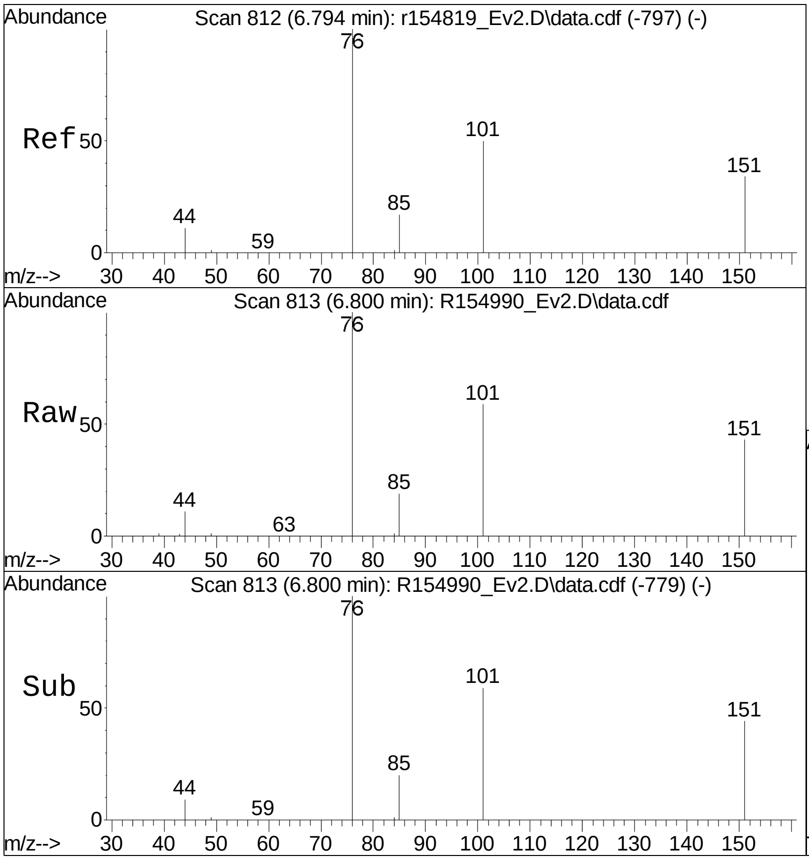
Tgt Ion: 76 Resp:   97659
Ion  Ratio  Lower  Upper
 76  100
 44   11.3   10.6   16.0
```





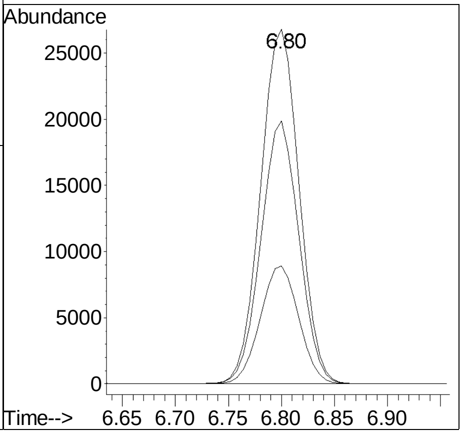


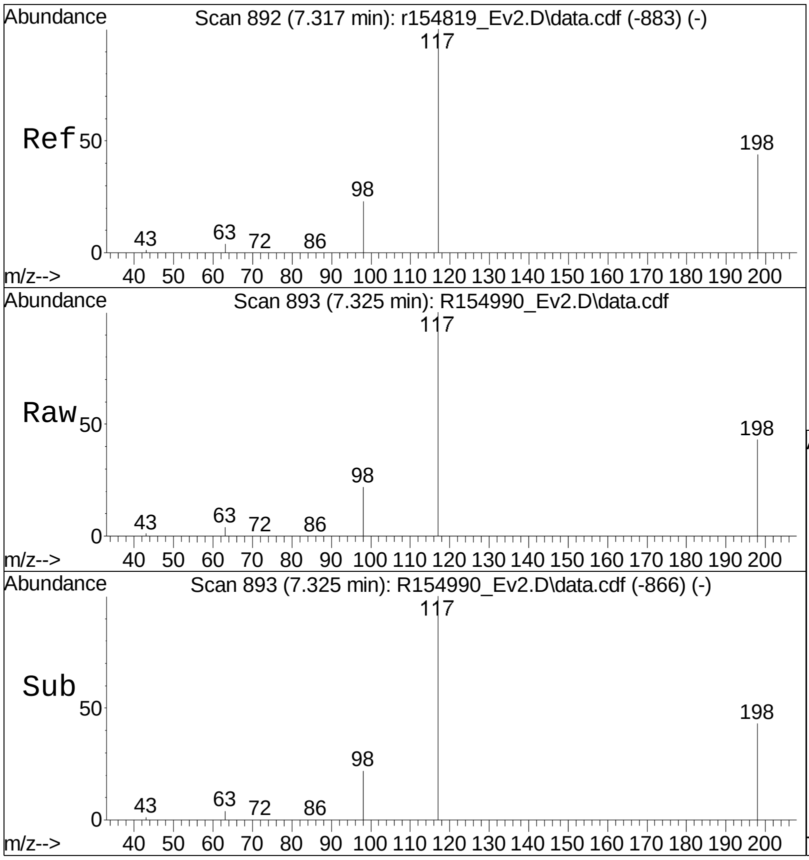




```
#21
Freon 113
Concen:    4.69 ppbV
RT:    6.80 min  Scan# 813
Delta R.T.  0.006 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

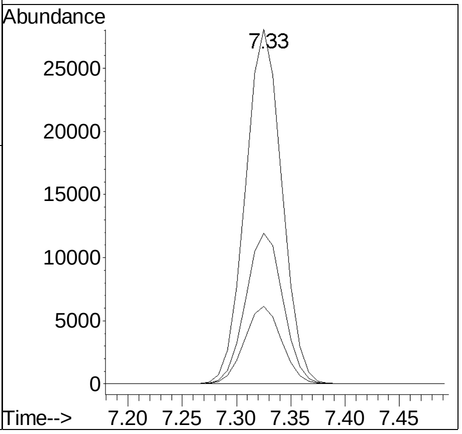
Tgt Ion:101 Resp:   67487
Ion  Ratio  Lower  Upper
101  100
 85   33.3   27.9   41.9
151   74.2   54.8   82.2
```

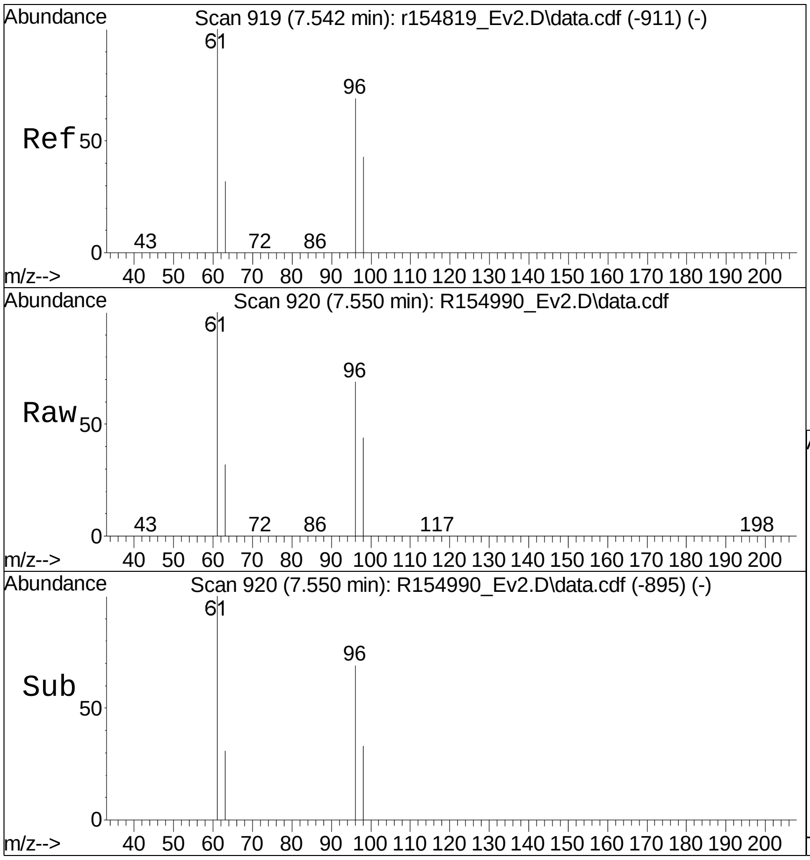




```
#22
Halothane
Concen:    5.49 ppbV
RT:    7.33 min  Scan# 893
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

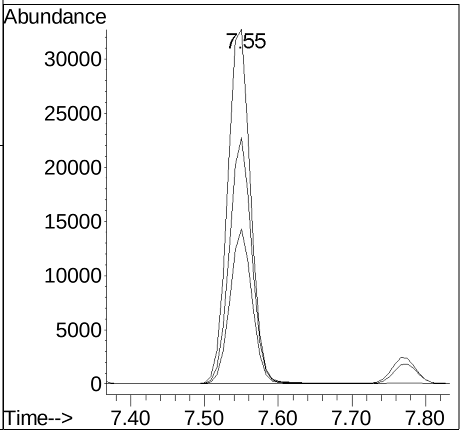
Tgt Ion:117 Resp:   65851
Ion  Ratio  Lower  Upper
117  100
198   42.5   35.1   52.7
 98   21.9   18.8   28.2
```

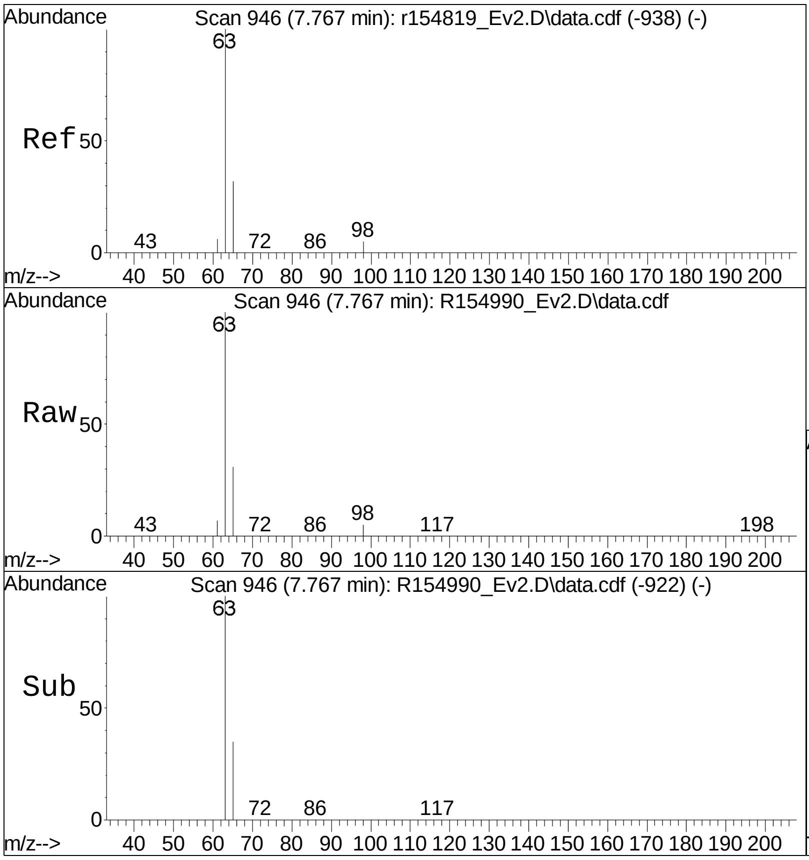




```
#23
trans-1,2-dichloroethene
Concen:    4.80 ppbV
RT:    7.55 min  Scan# 920
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

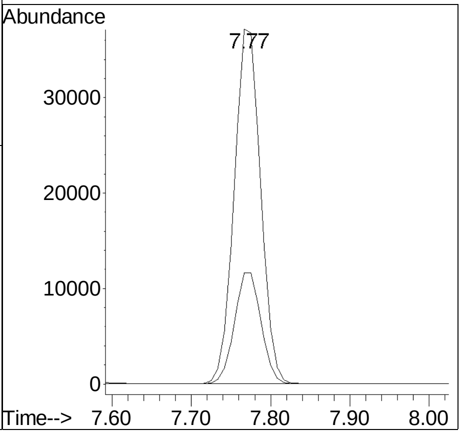
Tgt Ion: 61 Resp:   71286
Ion  Ratio  Lower  Upper
 61  100
 96   69.4   55.3   82.9
 98   43.7   34.6   51.8
```

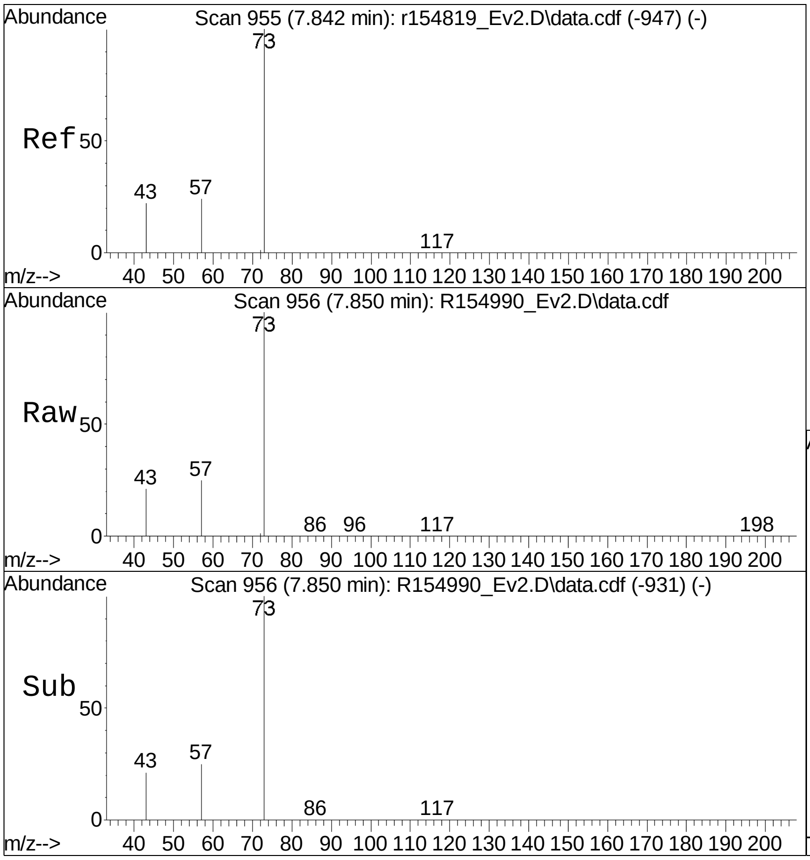




```
#24
1,1-dichloroethane
Concen:    4.83 ppbV
RT:     7.77 min  Scan# 946
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

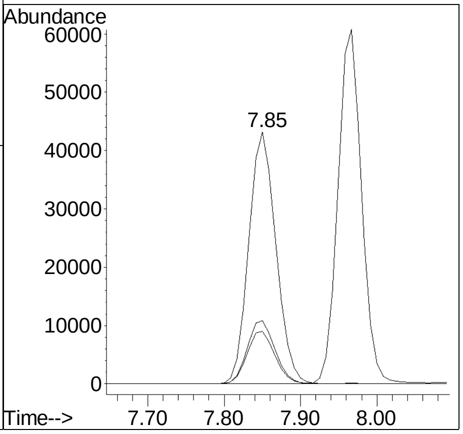
Tgt Ion: 63 Resp:   86171
Ion  Ratio  Lower  Upper
 63  100
 65   31.3   25.8   38.6
```

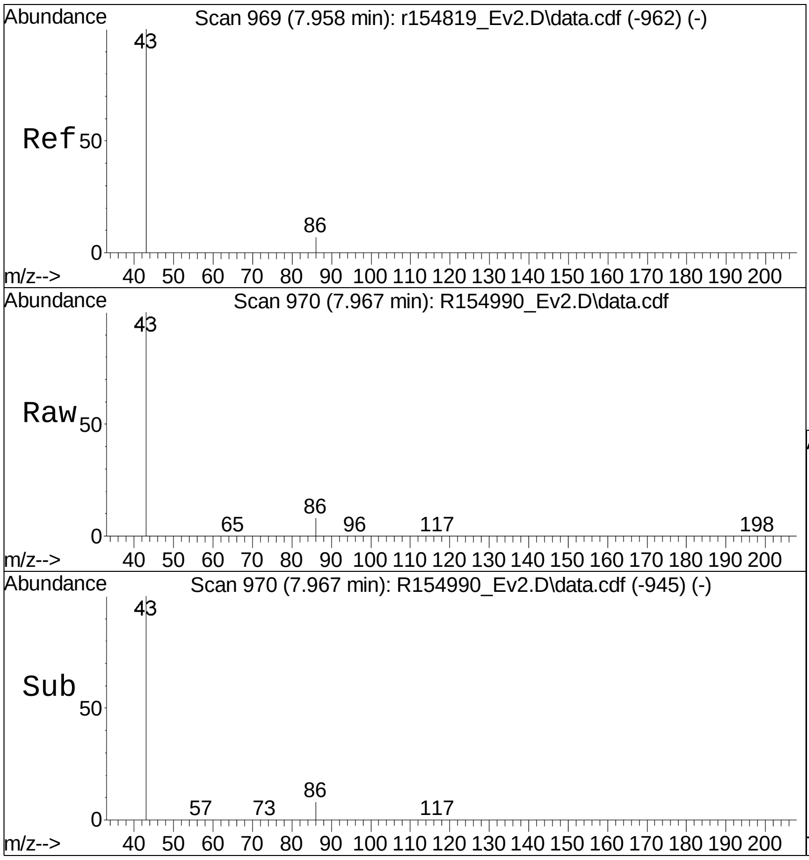




```
#25
MTBE
Concen:    4.49 ppbV
RT:    7.85 min  Scan# 956
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

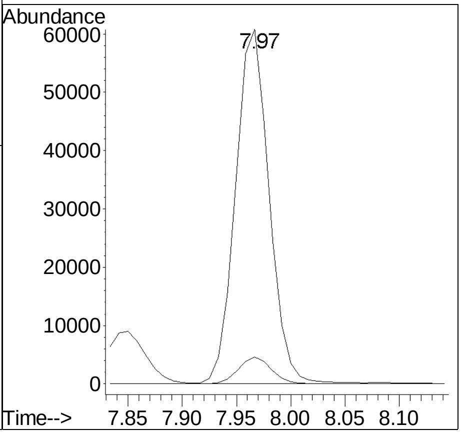
Tgt Ion: 73 Resp:  107091
Ion  Ratio  Lower  Upper
 73  100
 57   25.2   19.5   29.3
 43   20.9   17.4   26.0
```

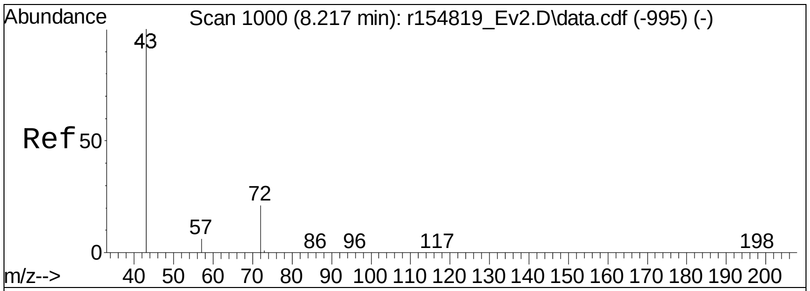


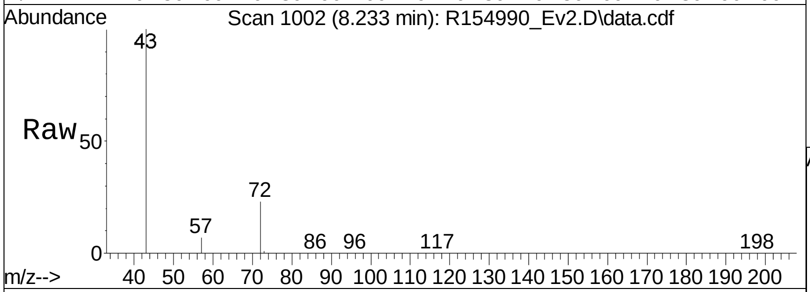


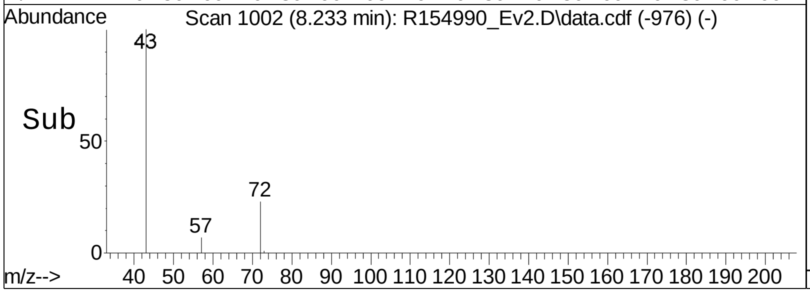
```
#26
vinyl acetate
Concen:    5.04 ppbV
RT:    7.97 min  Scan# 970
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 43 Resp:  130433
Ion  Ratio  Lower  Upper
 43  100
 86    7.6    5.6    8.4
```





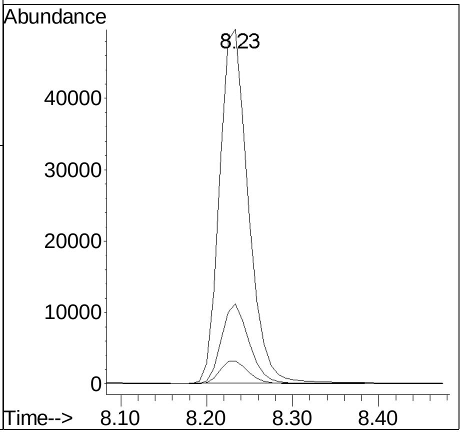


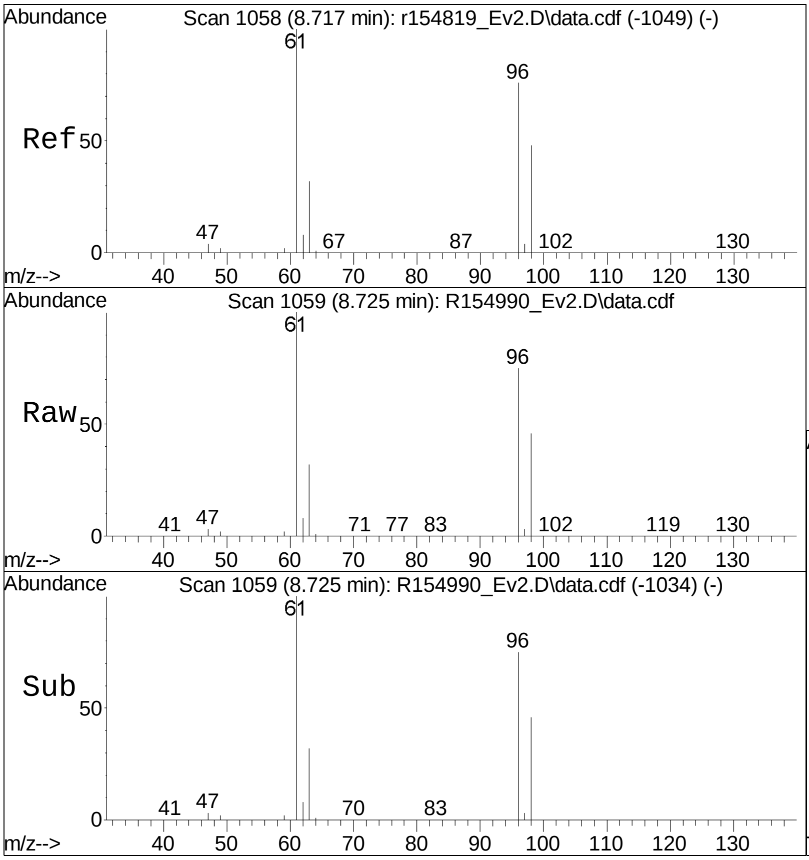


#27
2-butanone
Concen: 4.54 ppbV
RT: 8.23 min Scan# 1002
Delta R.T. 0.017 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 43 Resp: 114877

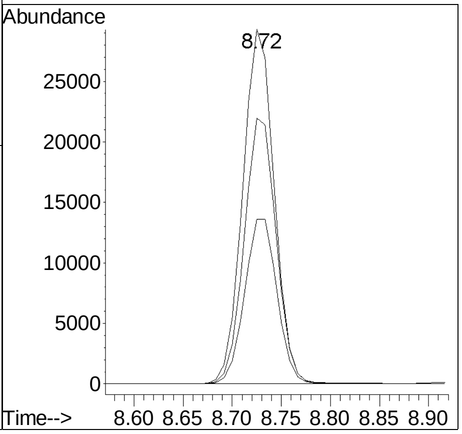
Ion	Ratio	Lower	Upper
43	100		
72	22.6	16.4	24.6
57	6.5	4.8	7.2





```
#28
cis-1,2-dichloroethene
Concen:    5.09 ppbV
RT:    8.72 min  Scan# 1059
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

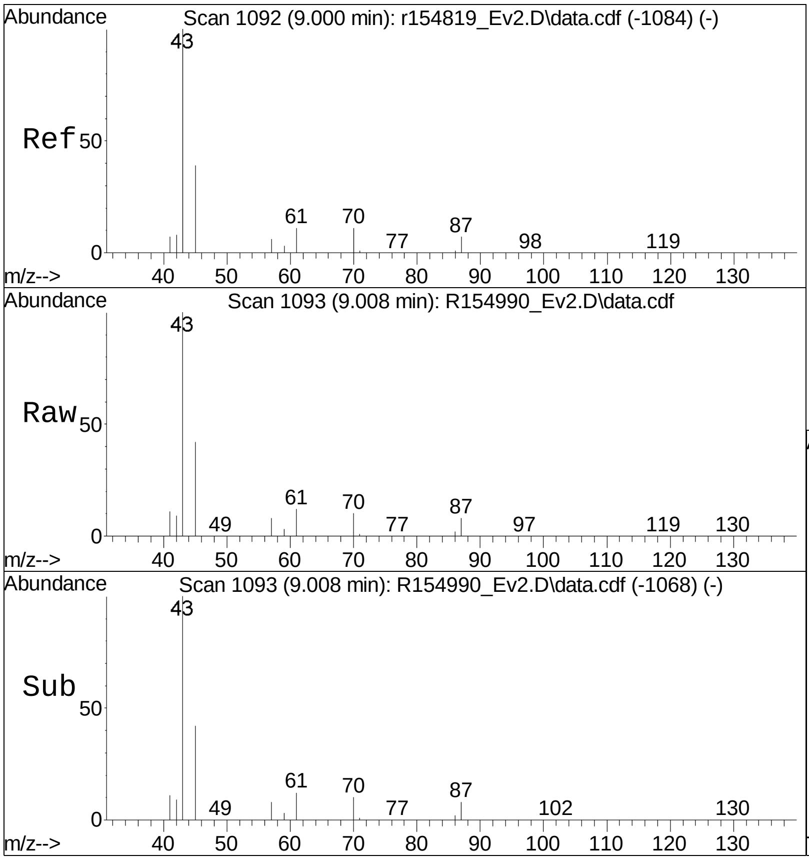
Tgt Ion: 61 Resp:   65321
Ion  Ratio  Lower  Upper
 61  100
 96   74.9   60.7   91.1
 98   46.5   38.6   58.0
```

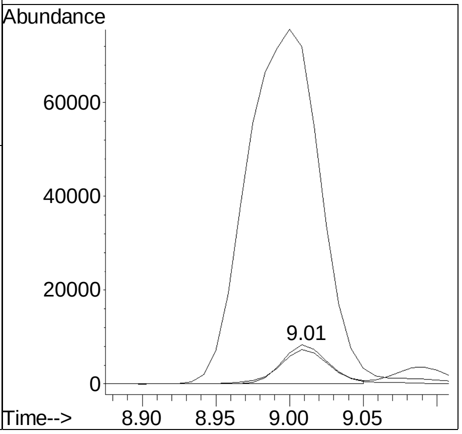


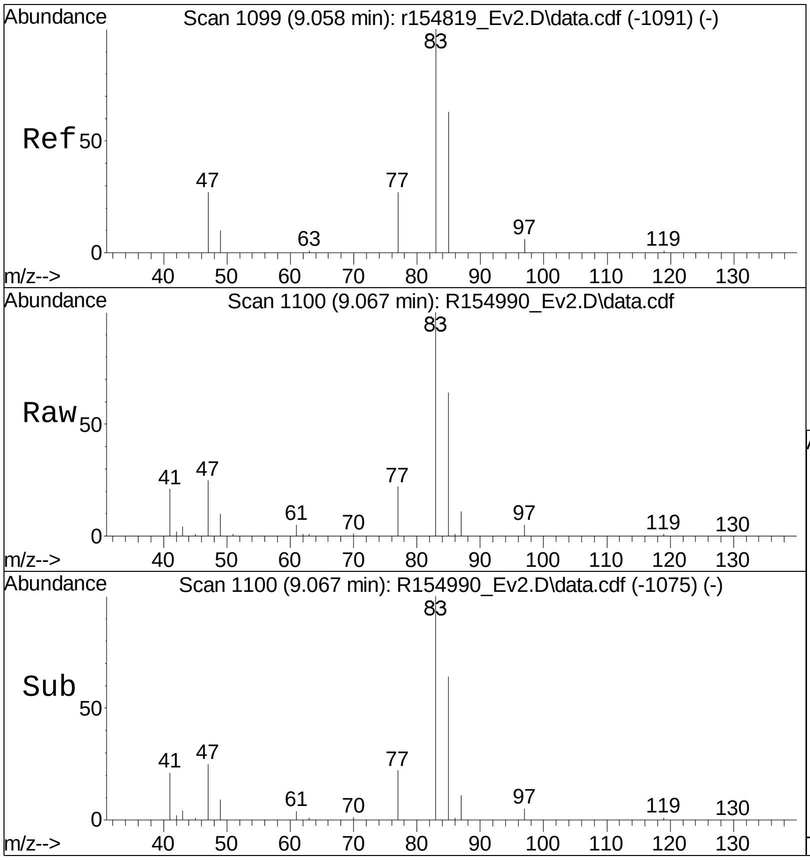
#29
Ethyl Acetate
Concen: 5.16 ppbV
RT: 9.01 min Scan# 1093
Delta R.T. 0.008 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 61 Resp: 18416

Ion	Ratio	Lower	Upper
61	100		
70	87.8	75.0	112.6
43	859.2	728.2	1092.4



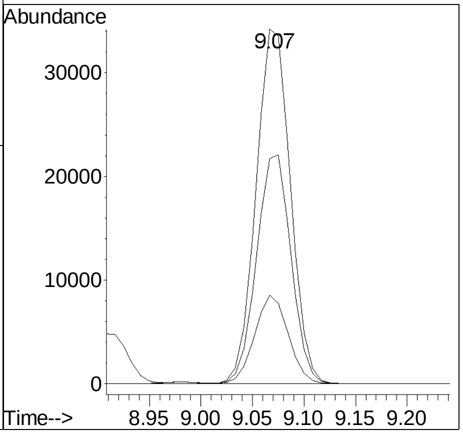


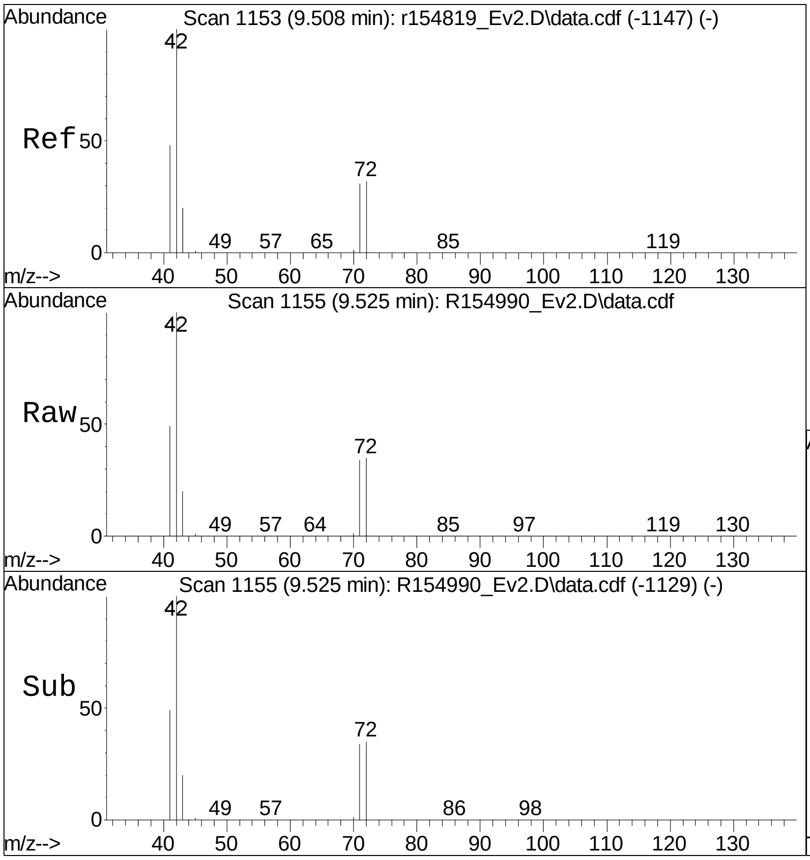


#30
chloroform
Concen: 4.96 ppbV
RT: 9.07 min Scan# 1100
Delta R.T. 0.008 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 83 Resp: 79399

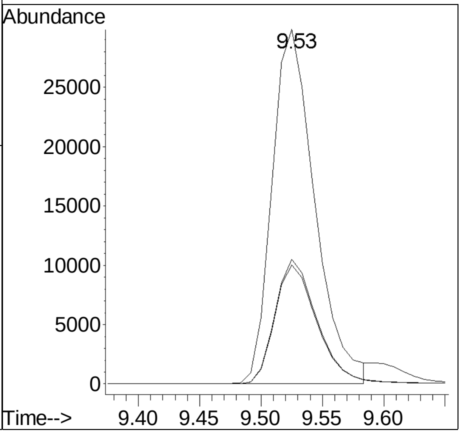
Ion	Ratio	Lower	Upper
83	100		
85	63.6	51.0	76.4
47	25.1	21.7	32.5

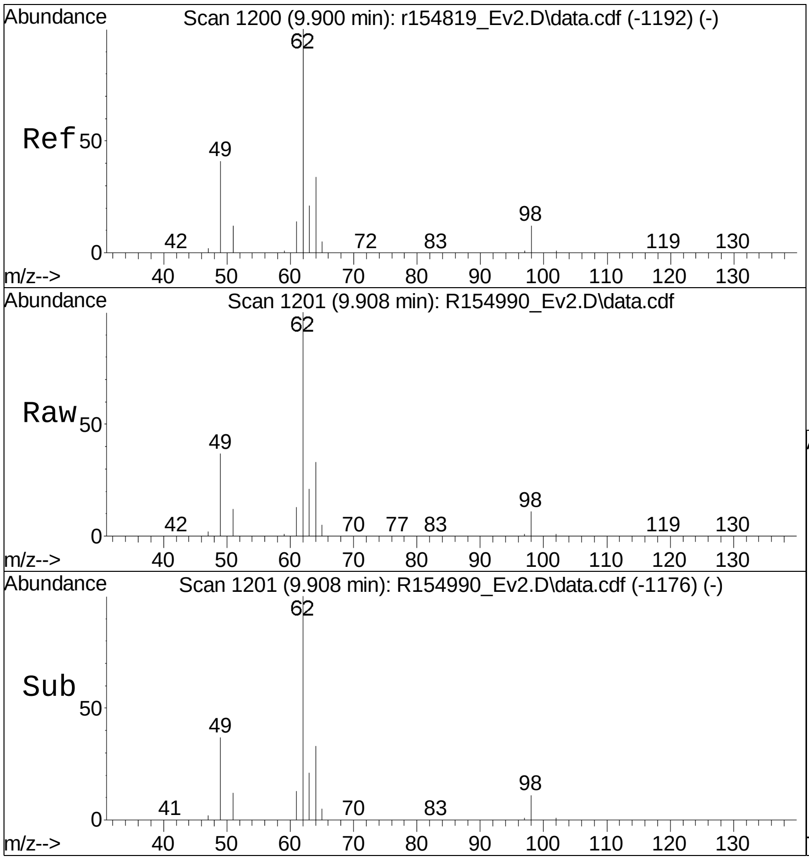




```
#31
Tetrahydrofuran
Concen:    4.50 ppbV m
RT:    9.53 min  Scan# 1155
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

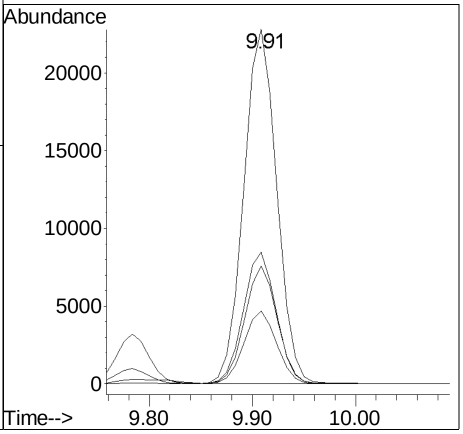
Tgt Ion: 42 Resp:   72270
Ion  Ratio  Lower  Upper
 42  100
 71   33.5   24.7   37.1
 72   35.2   25.5   38.3
```

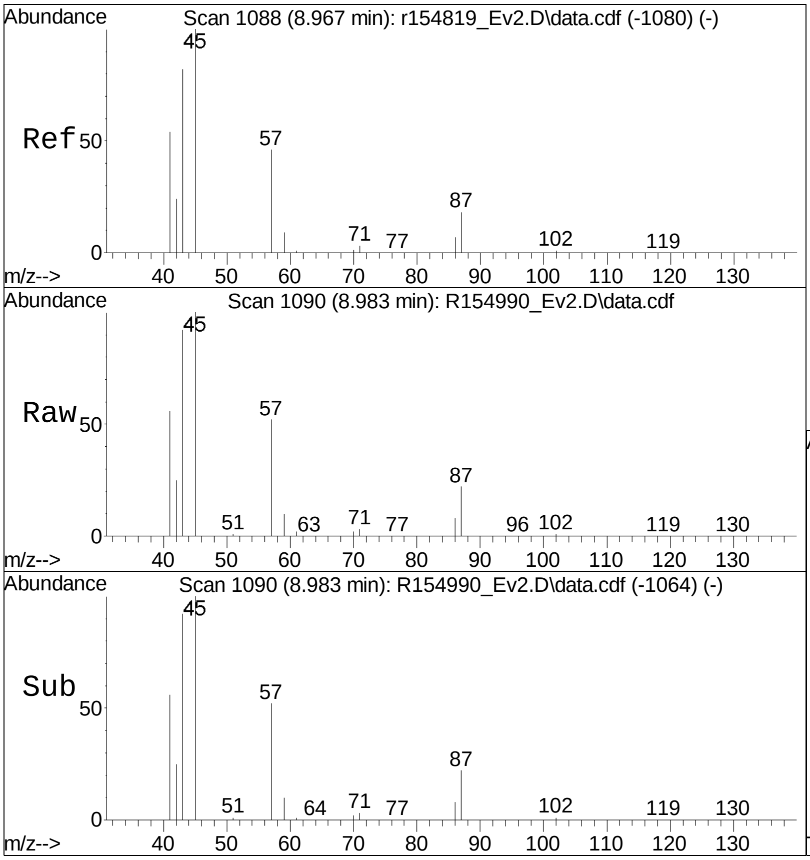




```
#32
1,2-dichloroethane
Concen:    4.99 ppbV
RT:    9.91 min  Scan# 1201
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

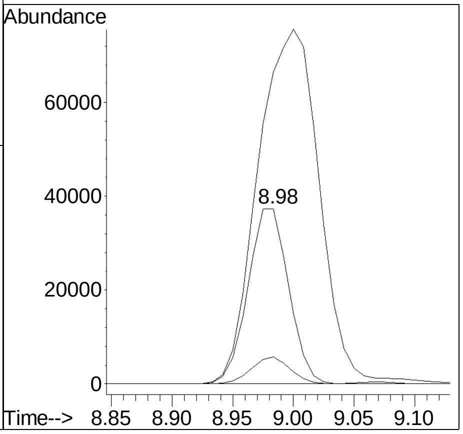
Tgt Ion: 62 Resp:   50654
Ion  Ratio  Lower  Upper
 62  100
 64   33.3   27.4   41.0
 49   37.2   32.6   48.8
 63   20.7   17.1   25.7
```

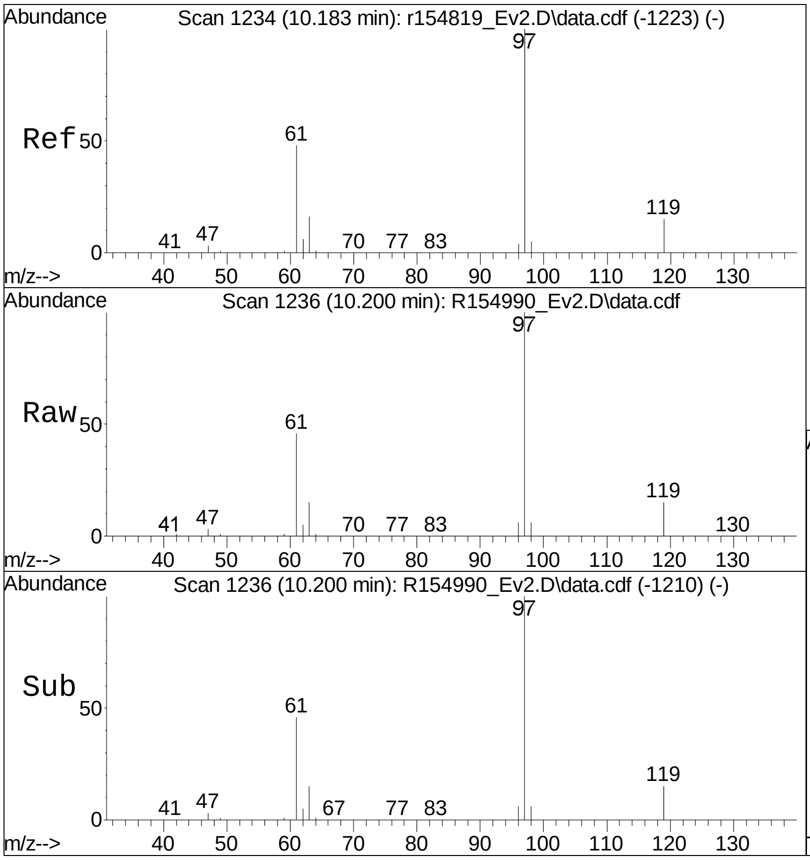




```
#34
hexane
Concen:    4.65 ppbV
RT:    8.98 min  Scan# 1090
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 57 Resp:   87395
Ion  Ratio  Lower  Upper
 57  100
 43  177.7  142.7  214.1
 86   15.5   11.4   17.0
```

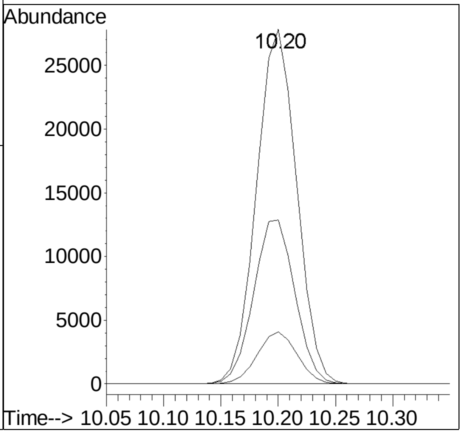


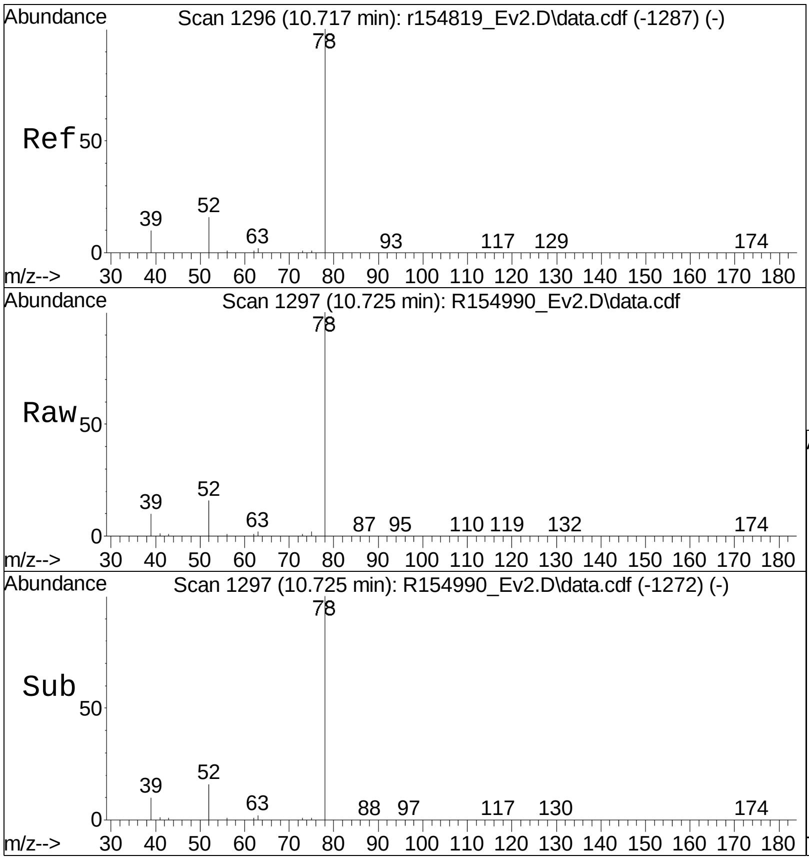


#36
1,1,1-trichloroethane
Concen: 4.64 ppbV
RT: 10.20 min Scan# 1236
Delta R.T. 0.017 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 97 Resp: 67916

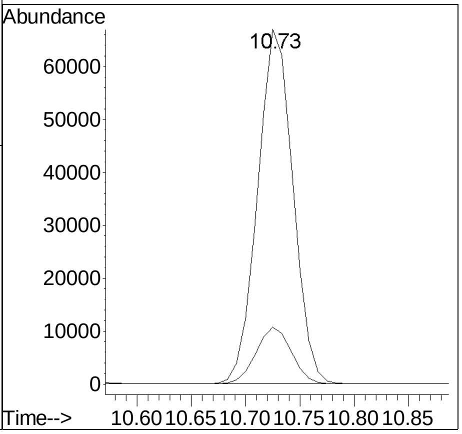
Ion	Ratio	Lower	Upper
97	100		
61	46.2	38.2	57.4
119	14.7	11.9	17.9

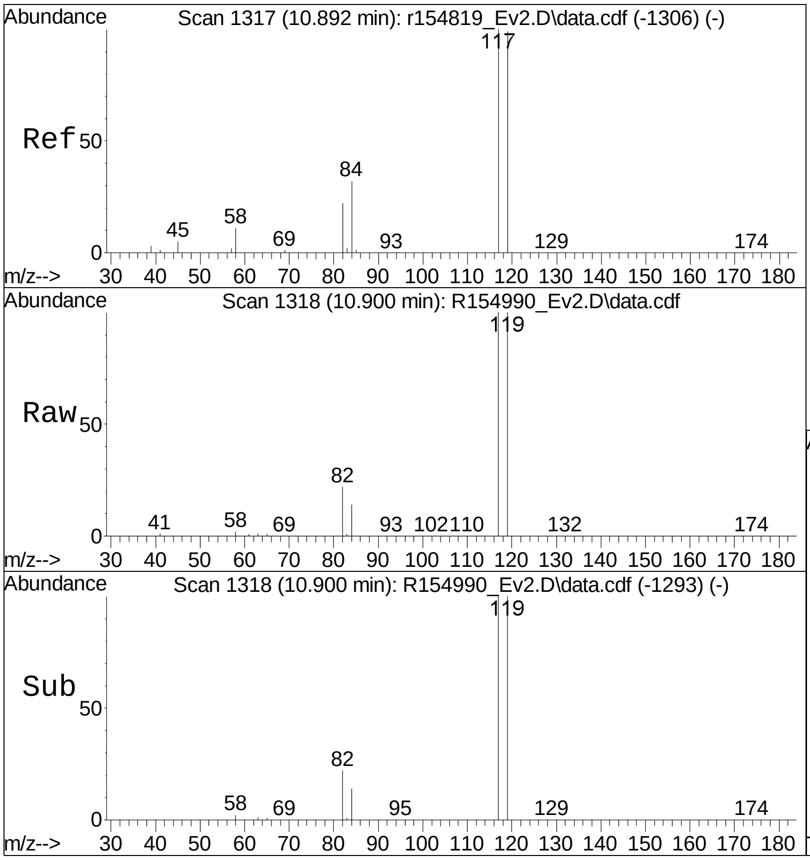




```
#37
benzene
Concen:    4.18 ppbV
RT:   10.73 min  Scan# 1297
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

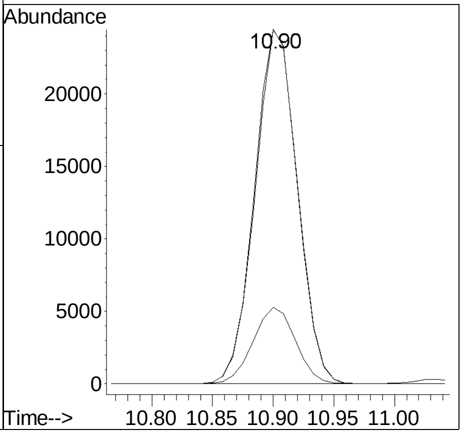
Tgt Ion: 78 Resp:  151646
Ion  Ratio  Lower  Upper
 78  100
 52   16.0   12.9   19.3
```

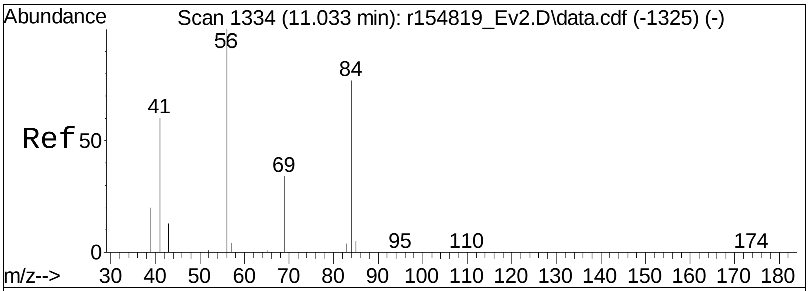


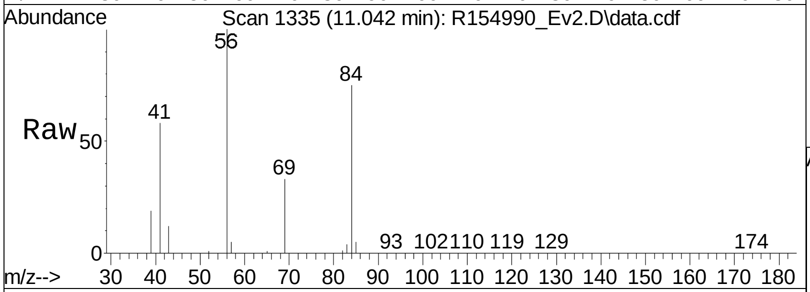


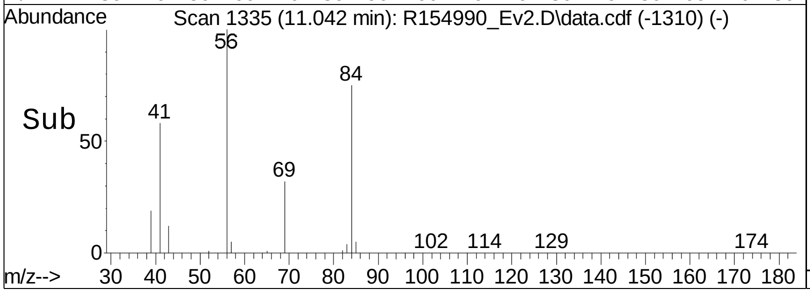
```
#38
carbon tetrachloride
Concen:    4.88 ppbV
RT:   10.90 min  Scan# 1318
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:117 Resp:   59726
Ion  Ratio  Lower  Upper
117  100
119  100.2   79.2  118.8
 82   21.6   18.1   27.1
```



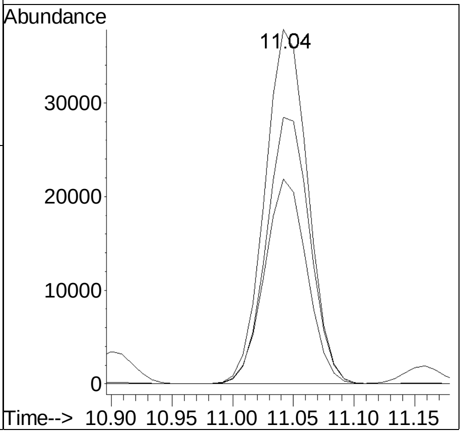


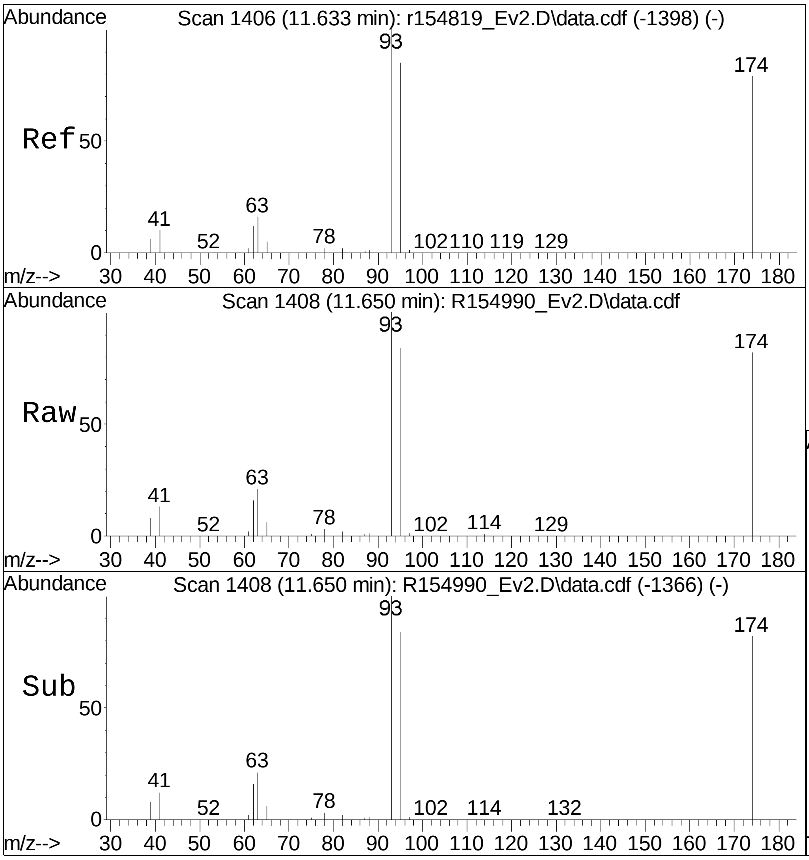




```
#39
cyclohexane
Concen:    4.56 ppbV
RT:   11.04 min  Scan# 1335
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

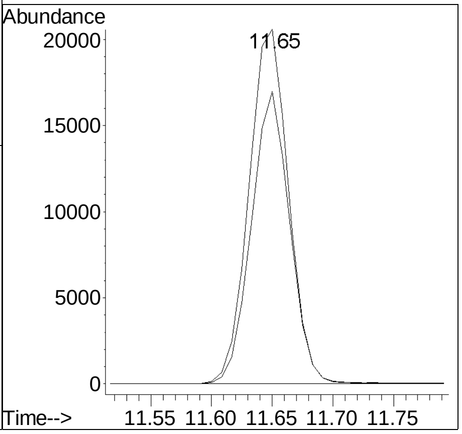
Tgt Ion: 56 Resp:   93090
Ion  Ratio  Lower  Upper
 56  100
 84   75.2   61.9   92.9
 41   57.8   47.9   71.9
```

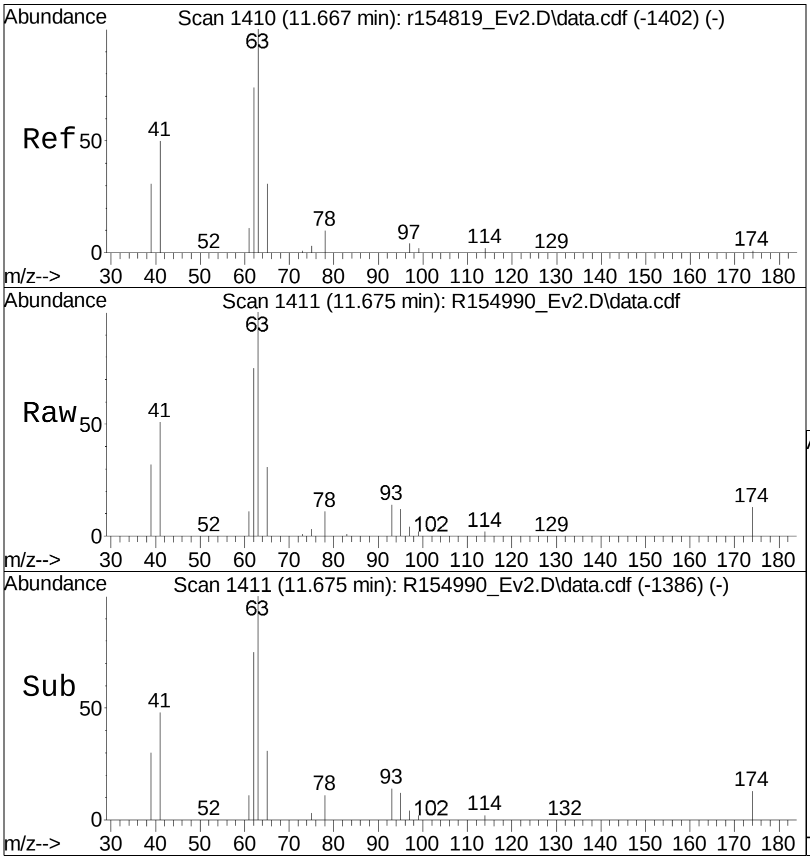




```
#40
Dibromomethane
Concen:    3.79 ppbV
RT:   11.65 min  Scan# 1408
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

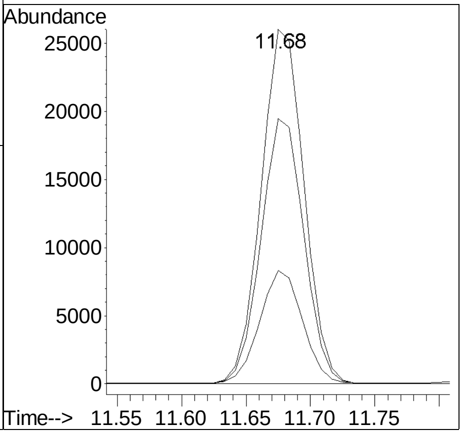
Tgt Ion: 93 Resp:   46541
Ion  Ratio  Lower  Upper
 93  100
174   80.4   63.7   95.5
 94    0.0    0.0    0.0
```

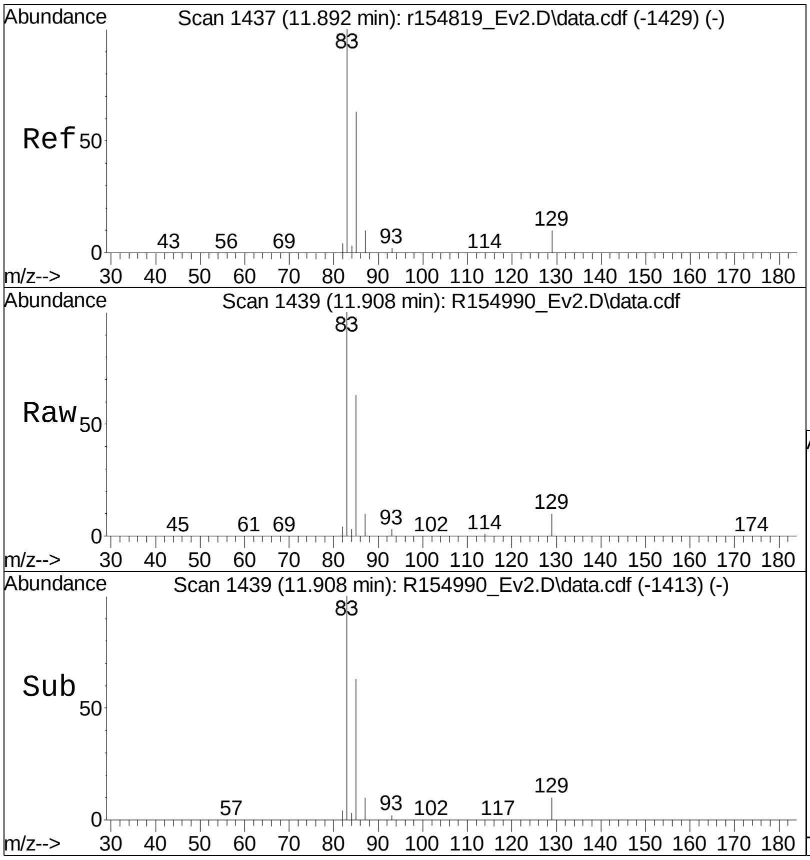




```
#41
1,2-dichloropropane
Concen:    4.43 ppbV
RT:   11.68 min  Scan# 1411
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

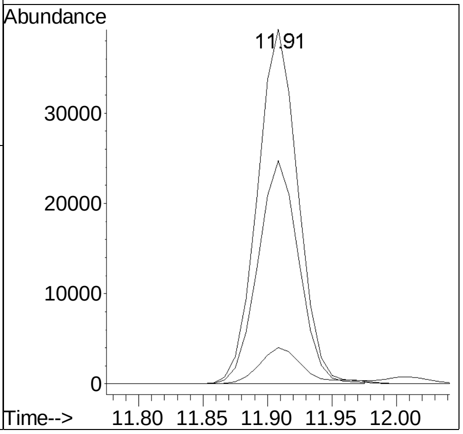
Tgt Ion: 63 Resp:   60211
Ion  Ratio  Lower  Upper
 63  100
 62   74.8   59.3   88.9
 39   32.0   25.1   37.7
```

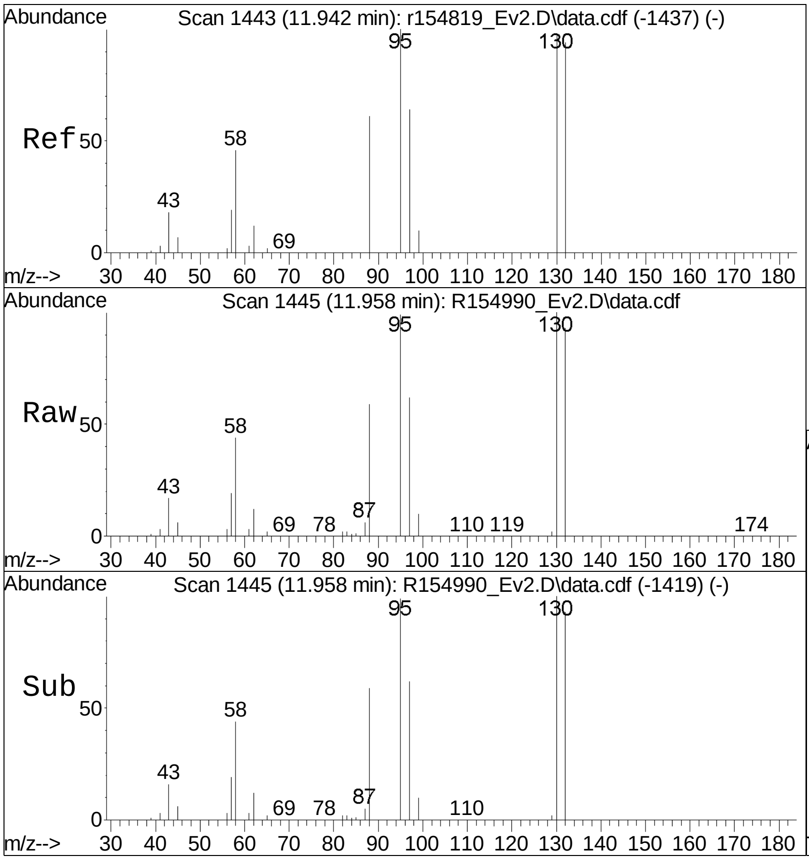




```
#42
bromodichloromethane
Concen:    4.81 ppbV
RT:   11.91 min  Scan# 1439
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

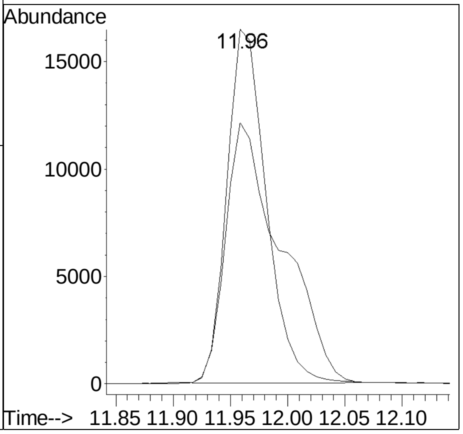
Tgt Ion: 83 Resp:   86055
Ion  Ratio  Lower  Upper
 83  100
 85   62.9   50.6   76.0
129   10.3    7.8   11.8
```

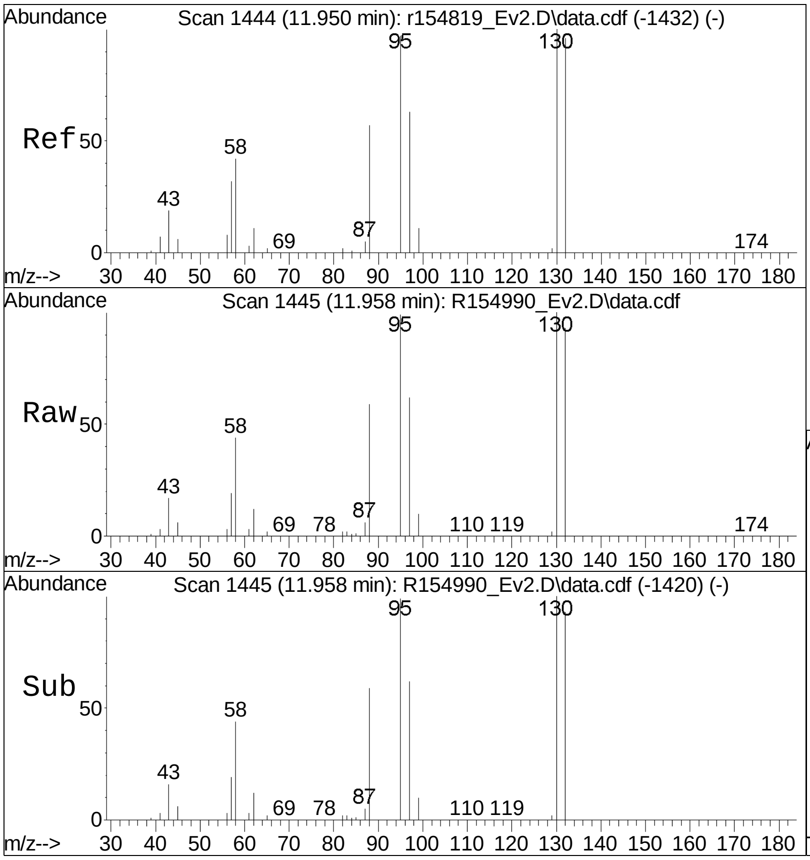




#43
1,4-dioxane
Concen: 4.74 ppbV
RT: 11.96 min Scan# 1445
Delta R.T. 0.017 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

```
Tgt Ion: 88 Resp:   39460
Ion  Ratio  Lower  Upper
 88  100
 58   73.7   59.8   89.8
```

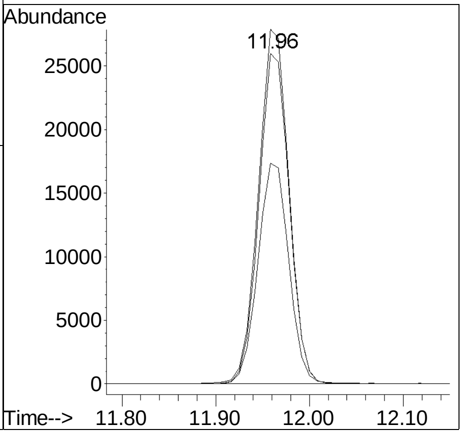


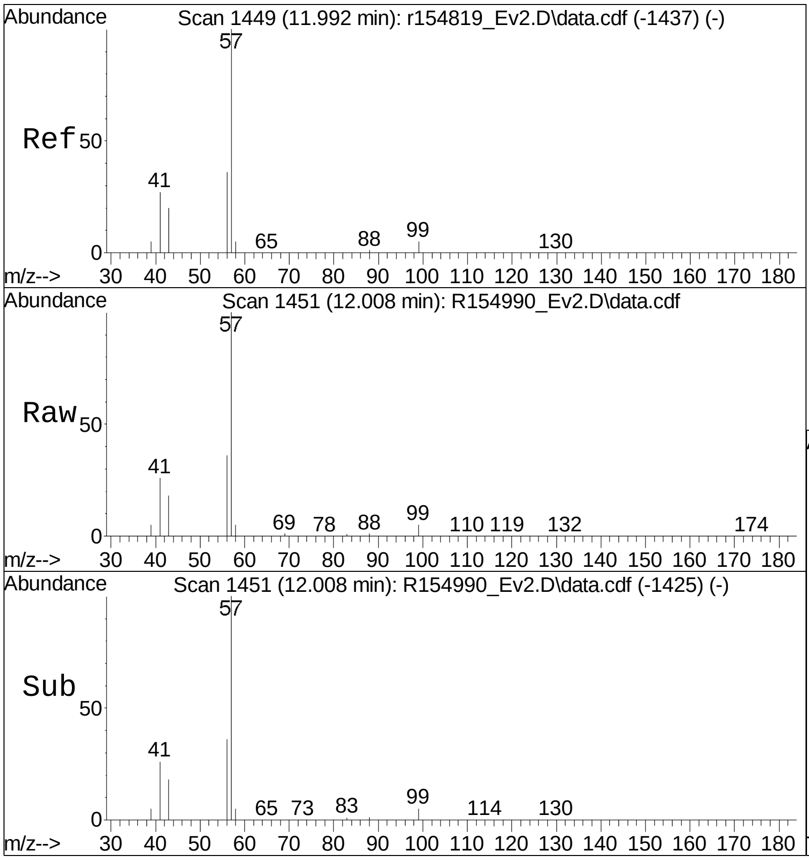


#44
trichloroethene
Concen: 4.53 ppbV
RT: 11.96 min Scan# 1445
Delta R.T. 0.008 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:130 Resp: 63210

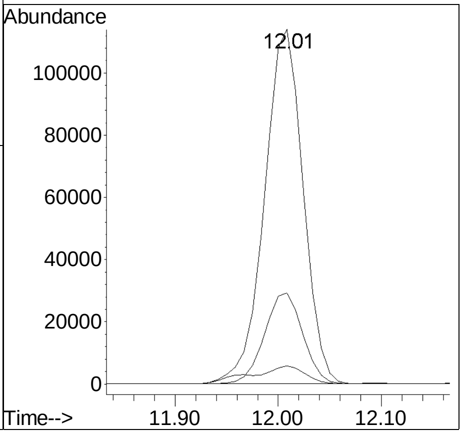
Ion	Ratio	Lower	Upper
130	100		
132	93.1	76.7	115.1
97	62.2	50.5	75.7

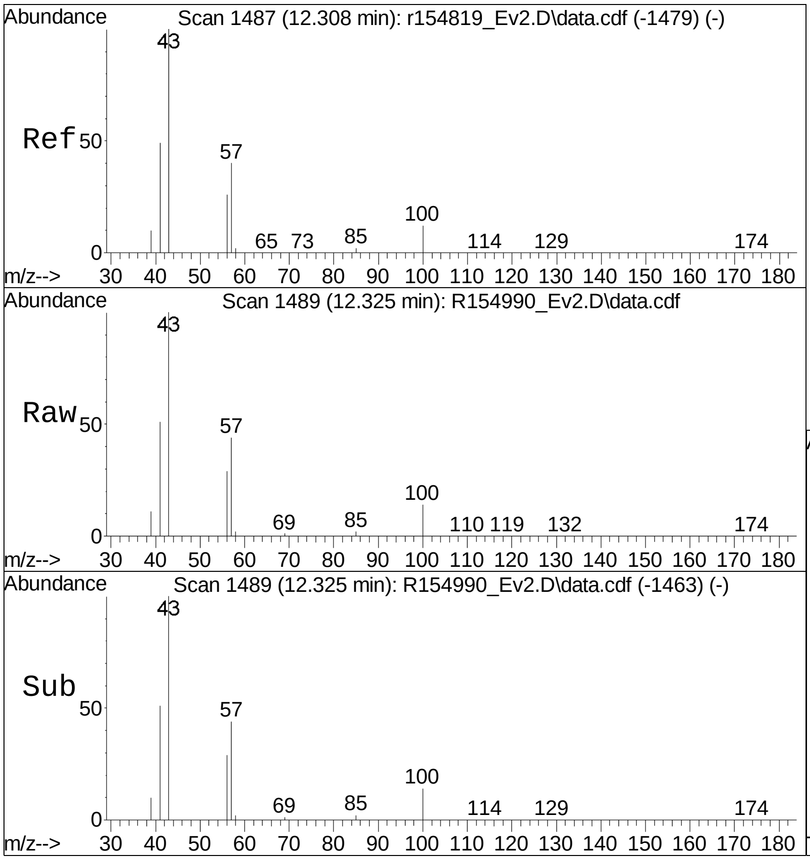




```
#45
2,2,4-trimethylpentane
Concen:    4.69 ppbV
RT:   12.01 min  Scan# 1451
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

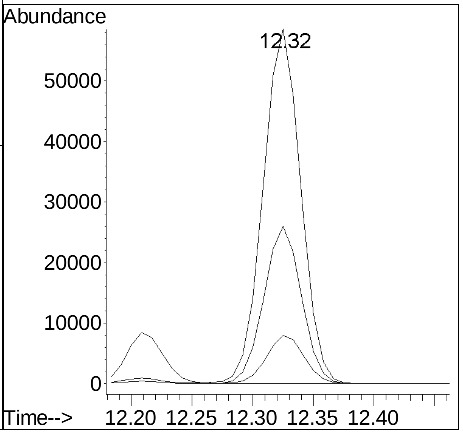
Tgt Ion: 57 Resp:  296721
Ion  Ratio  Lower  Upper
 57  100
 99    5.1    4.1    6.1
 41   25.6   21.8   32.6
```

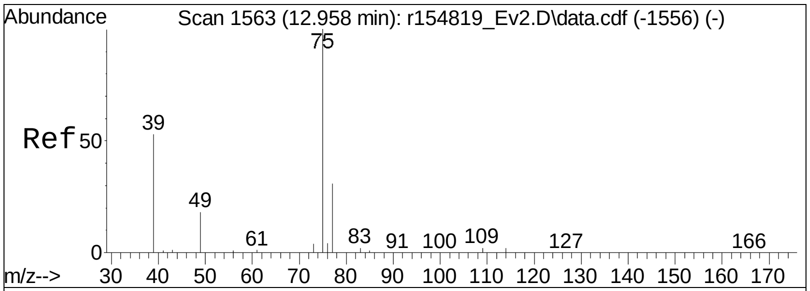


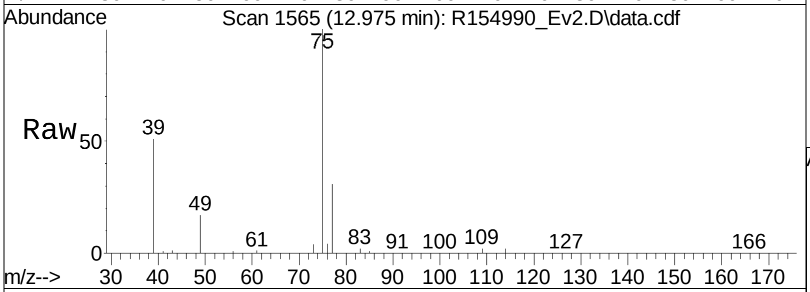


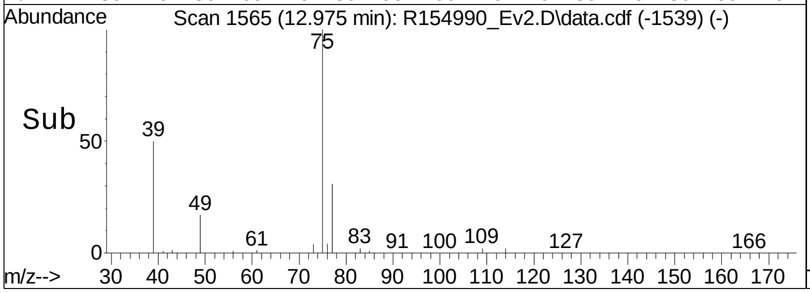
```
#46
heptane
Concen:    4.27 ppbV
RT:    12.32 min  Scan# 1489
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 43 Resp:  126316
Ion  Ratio  Lower  Upper
 43  100
 57   44.4   32.3   48.5
100   13.6   10.0   15.0
```



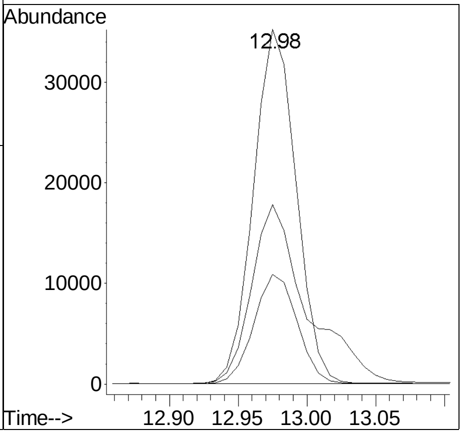


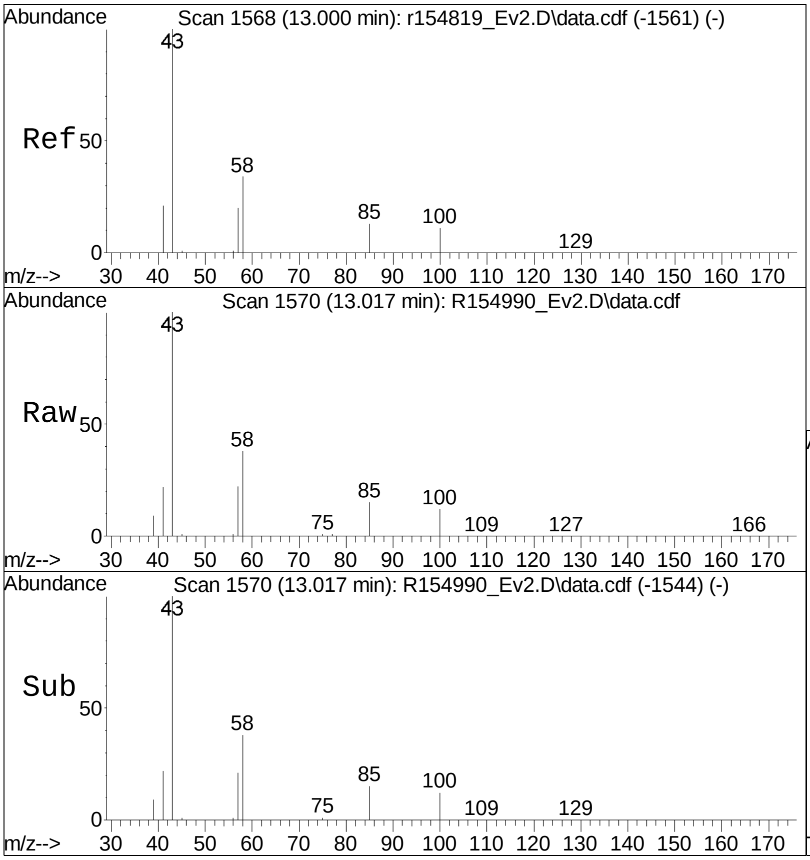




```
#47
cis-1,3-dichloropropene
Concen:    4.56 ppbV
RT:   12.98 min  Scan# 1565
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

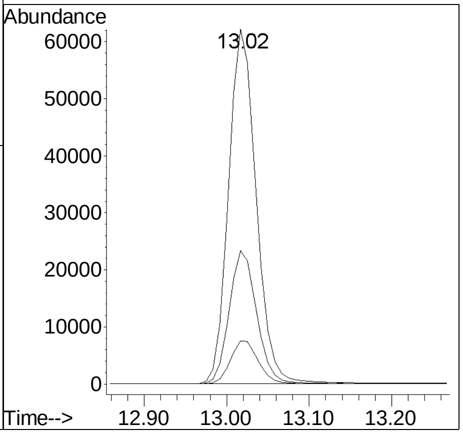
Tgt Ion: 75 Resp:   76295
Ion  Ratio  Lower  Upper
 75  100
 39   50.6   42.3   63.5
 77   30.9   25.0   37.6
```

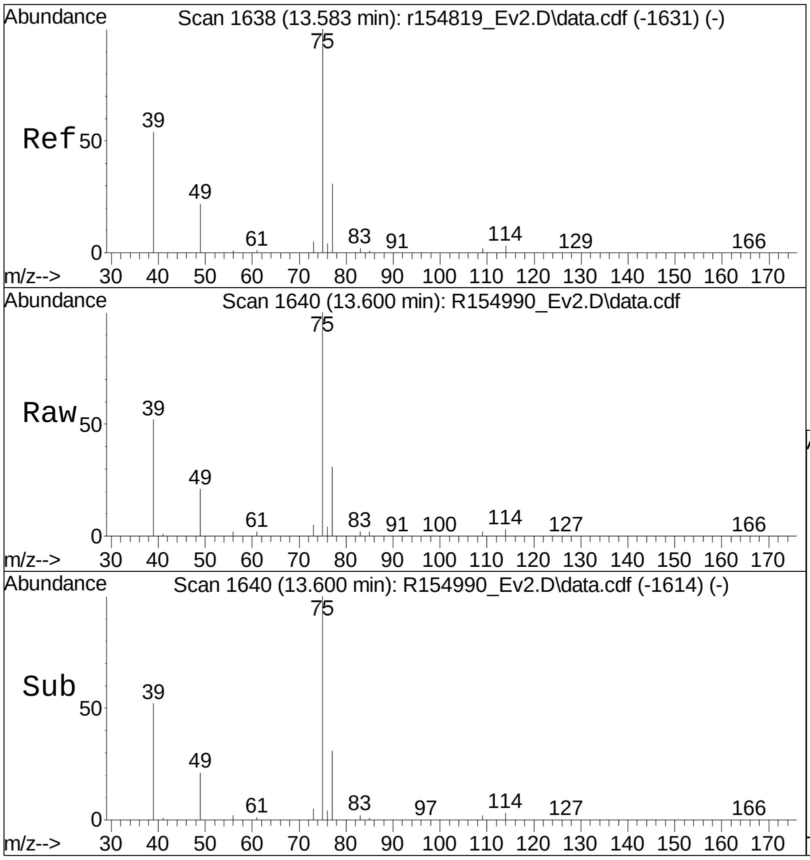




```
#48
4-methyl-2-pentanone
Concen:    4.29 ppbV
RT:   13.02 min  Scan# 1570
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion: 43 Resp:  144963
Ion  Ratio  Lower  Upper
 43  100
 58   37.6   27.6   41.4
100   12.2    9.0   13.6
```

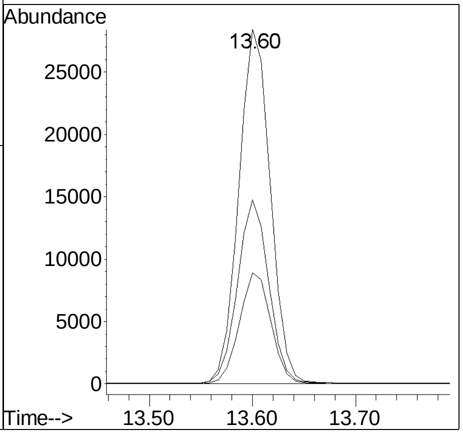


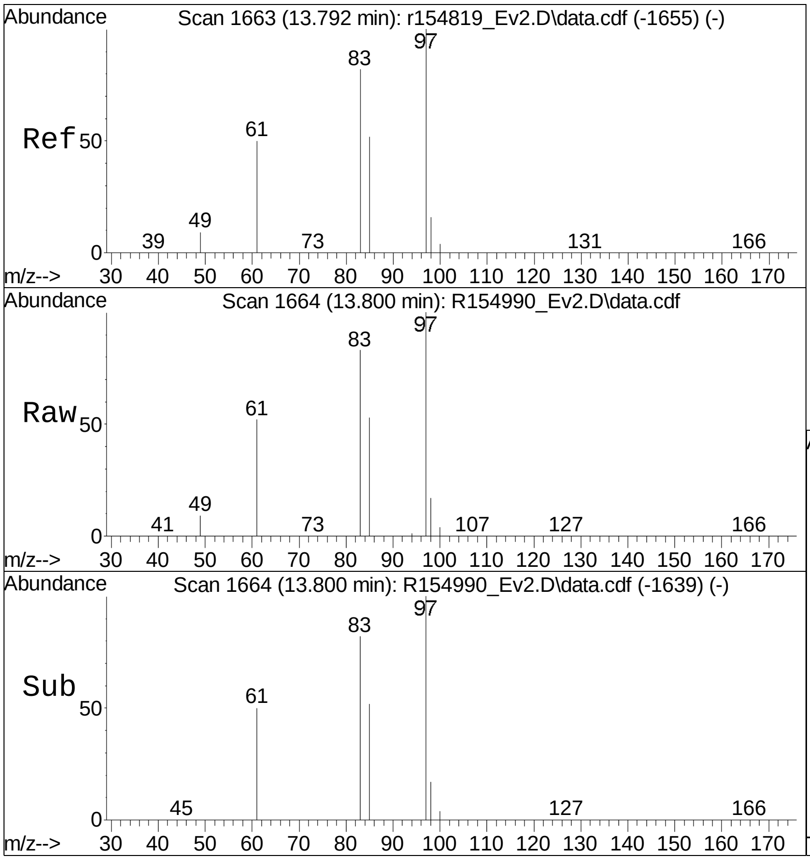


#49
trans-1,3-dichloropropene
Concen: 3.96 ppbV
RT: 13.60 min Scan# 1640
Delta R.T. 0.017 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 75 Resp: 60546

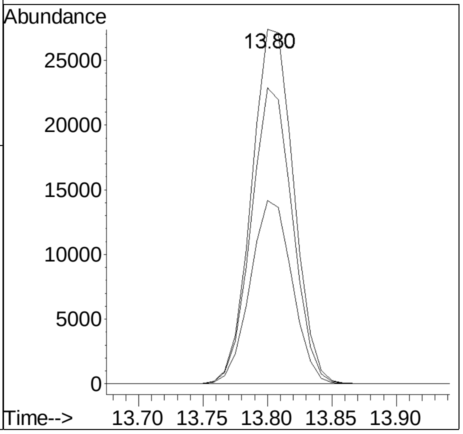
Ion	Ratio	Lower	Upper
75	100		
77	31.3	24.7	37.1
39	51.9	43.4	65.0

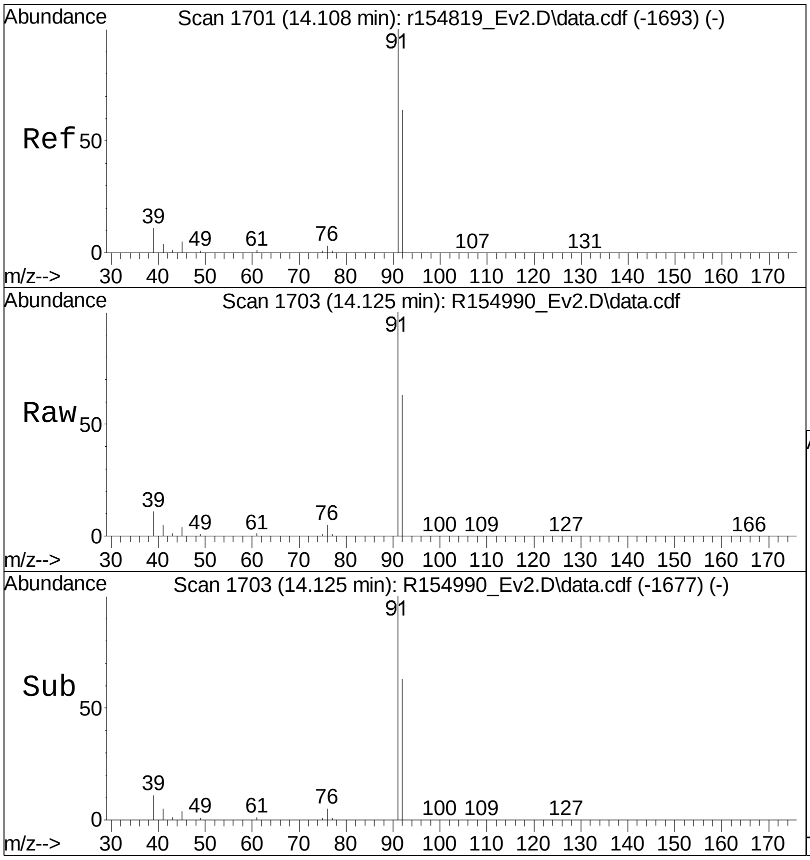




```
#50
1,1,2-trichloroethane
Concen:    4.63 ppbV
RT:   13.80 min  Scan# 1664
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

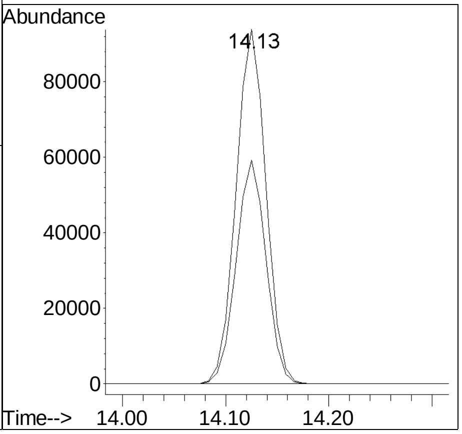
Tgt Ion: 97 Resp:   62357
Ion  Ratio  Lower  Upper
 97  100
 83   83.5   65.4   98.0
 61   51.7   39.9   59.9
```

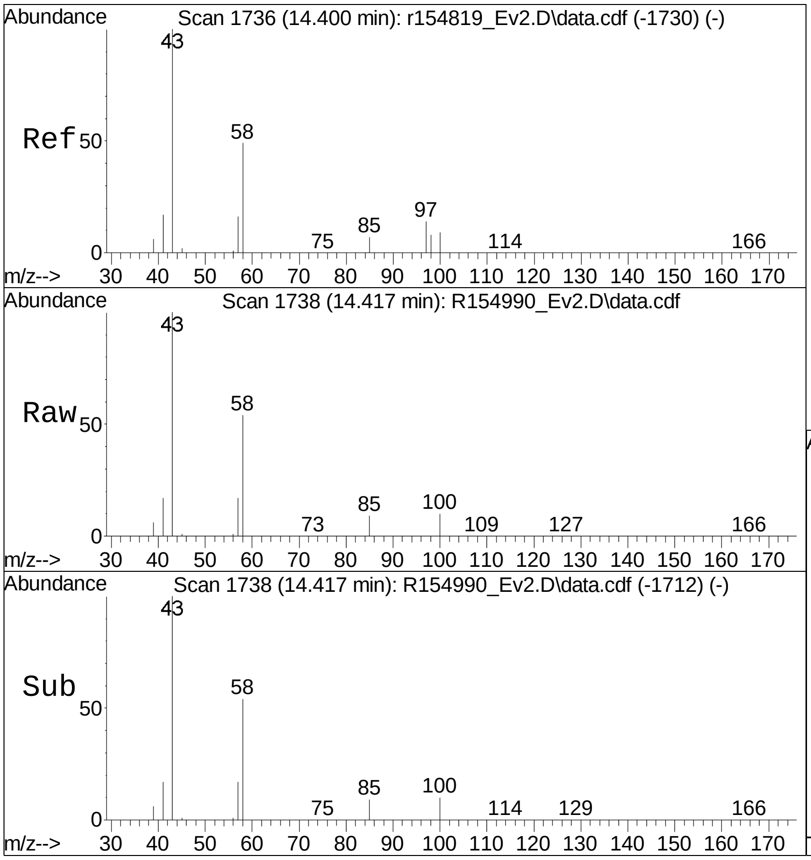




```
#52
toluene
Concen:    4.69 ppbV
RT:   14.13 min  Scan# 1703
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

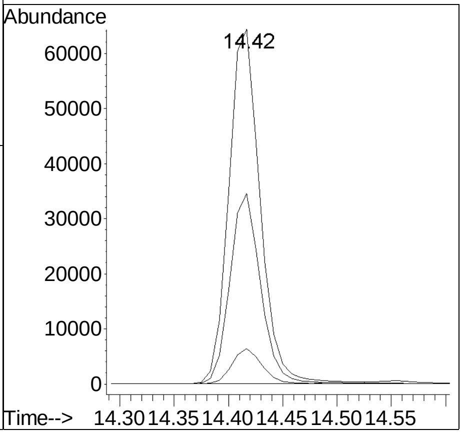
Tgt Ion: 91 Resp:  189220
Ion  Ratio  Lower  Upper
 91  100
 92   63.1   51.0   76.4
```

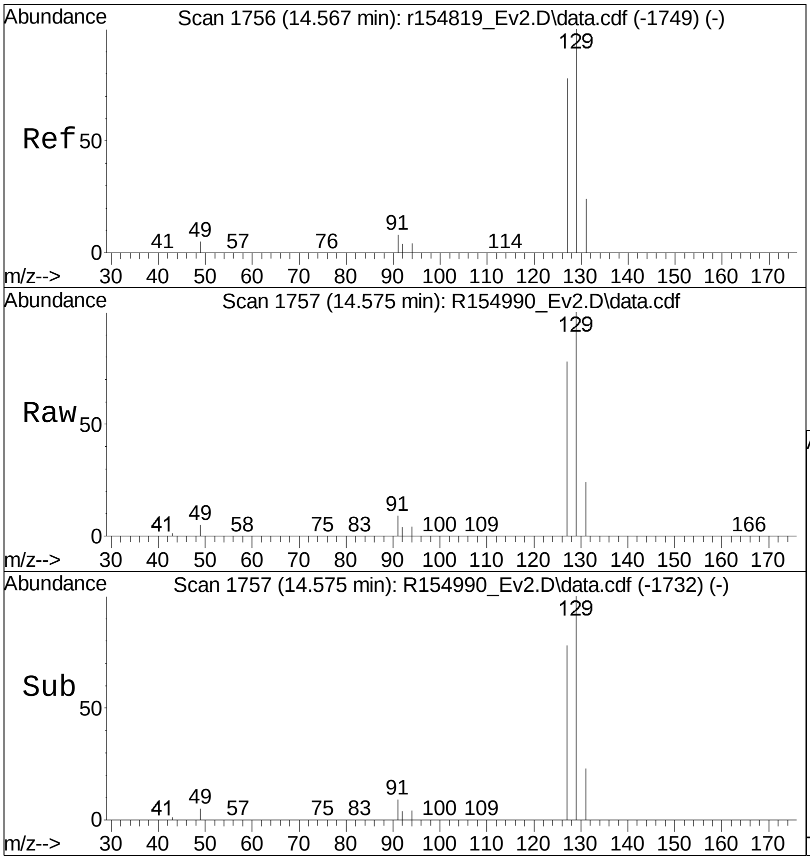




```
#54
2-hexanone
Concen:    4.43 ppbV
RT:   14.42 min  Scan# 1738
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

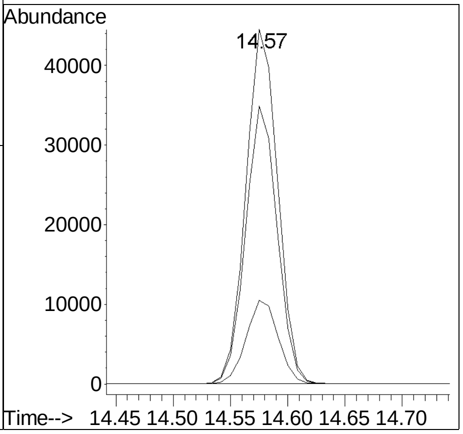
Tgt Ion: 43 Resp:  129130
Ion  Ratio  Lower  Upper
 43  100
 58   53.7   39.0   58.4
100   10.0    7.5   11.3
```





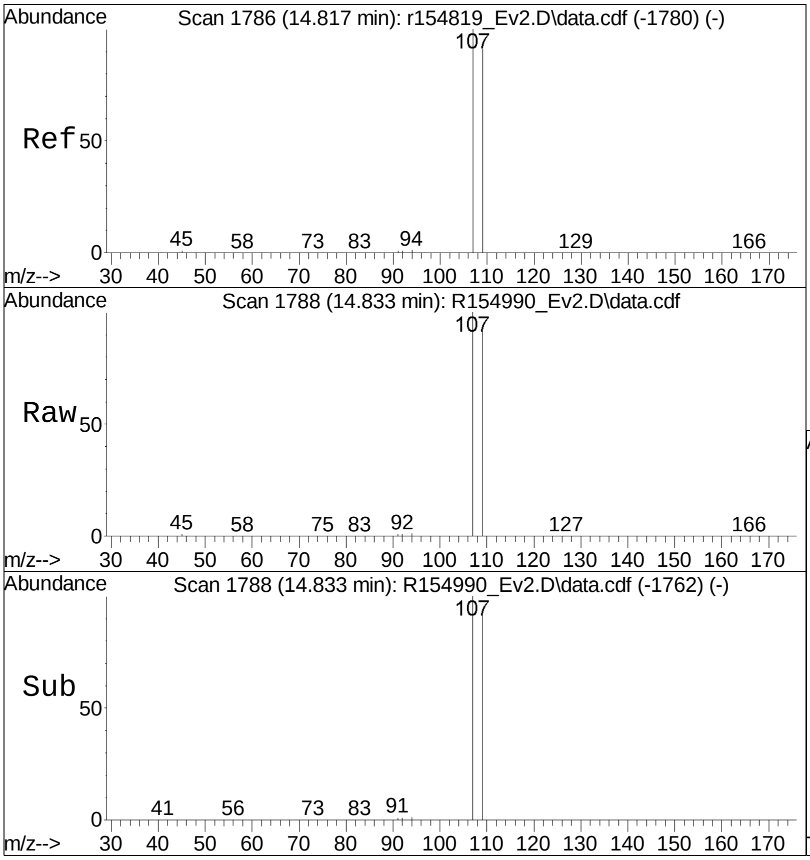
```
#55
dibromochloromethane
Concen:    5.29 ppbV
RT:   14.57 min  Scan# 1757
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

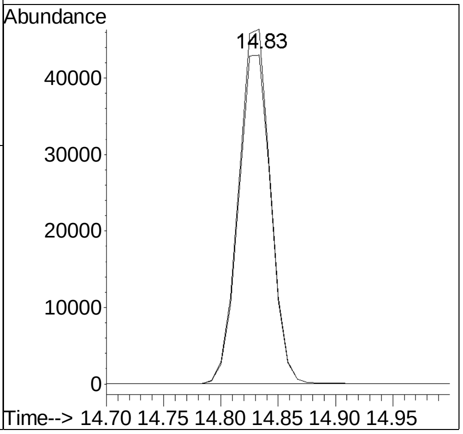
Tgt Ion:129 Resp:   86200
Ion  Ratio  Lower  Upper
129  100
127   78.4   62.2   93.2
131   23.6   19.0   28.6
```

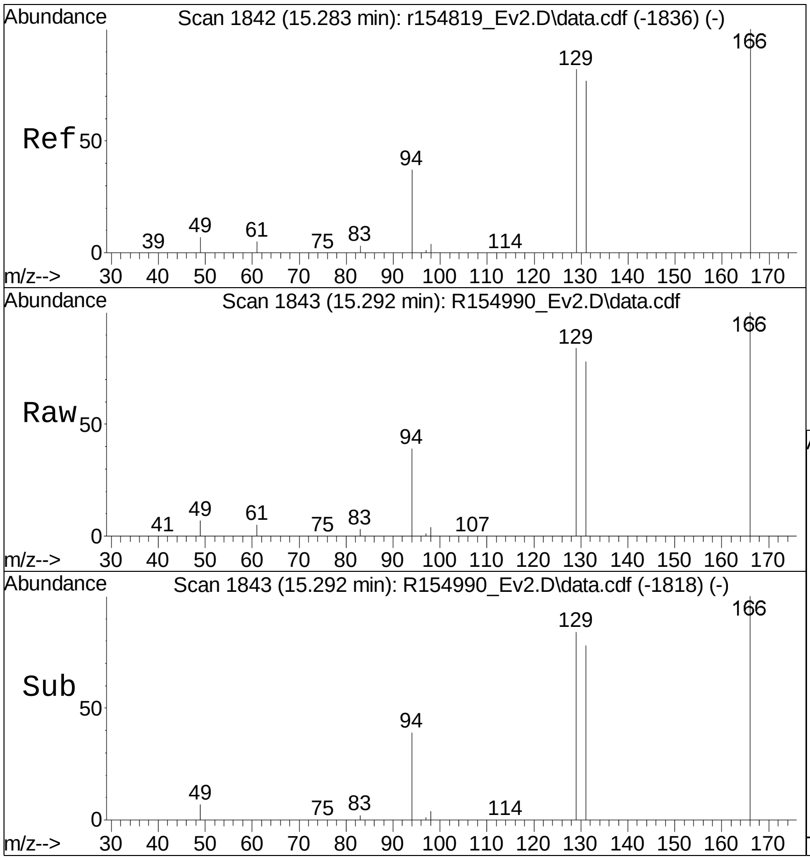


```
#56
1,2-dibromoethane
Concen:    4.88 ppbV
RT:   14.83 min  Scan# 1788
Delta R.T.  0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:107 Resp:   89949
Ion  Ratio  Lower  Upper
107  100
109   92.7   73.1  109.7
```

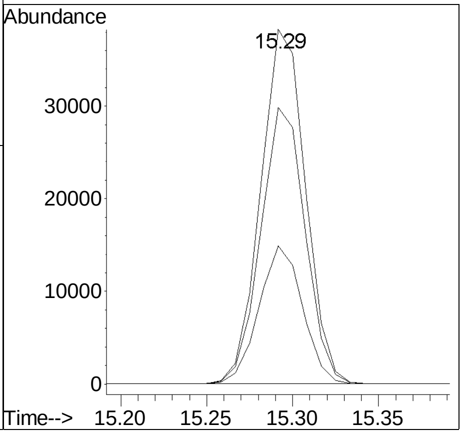


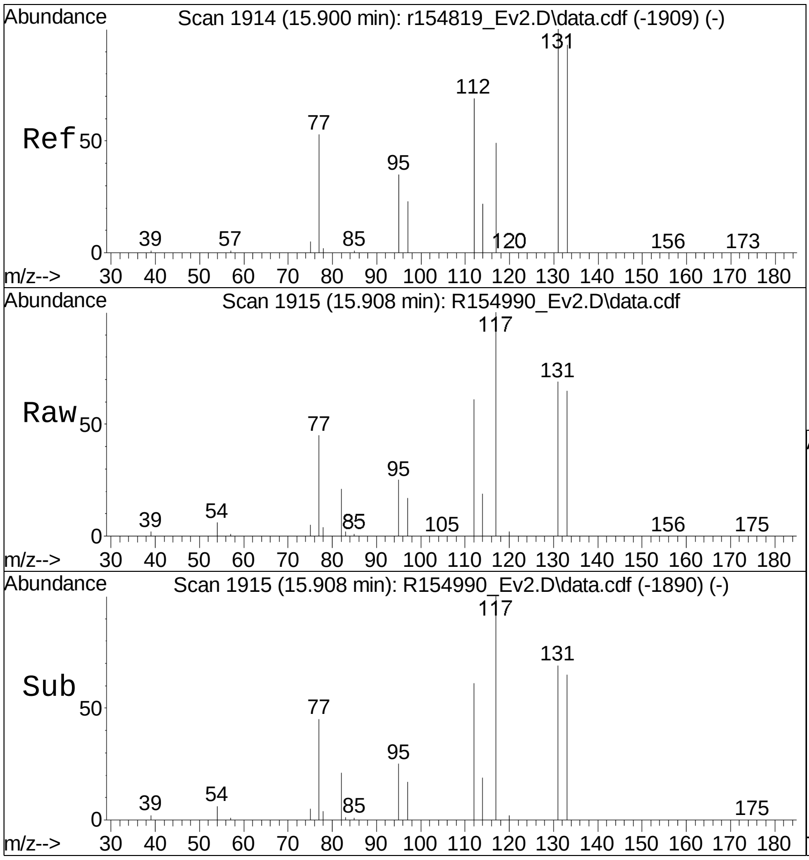




```
#57
tetrachloroethene
Concen:    4.74 ppbV
RT:   15.29 min  Scan# 1843
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

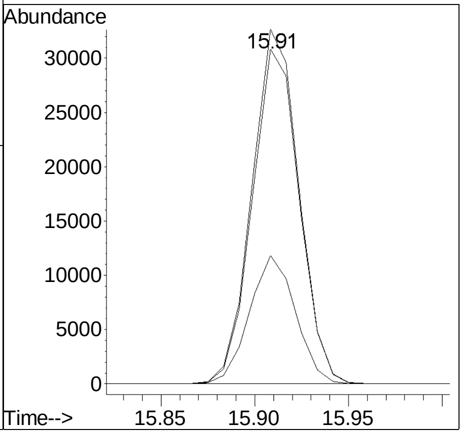
Tgt Ion:166 Resp:   69324
Ion  Ratio  Lower  Upper
166  100
131   77.9   61.8   92.6
 94   38.9   29.8   44.8
```

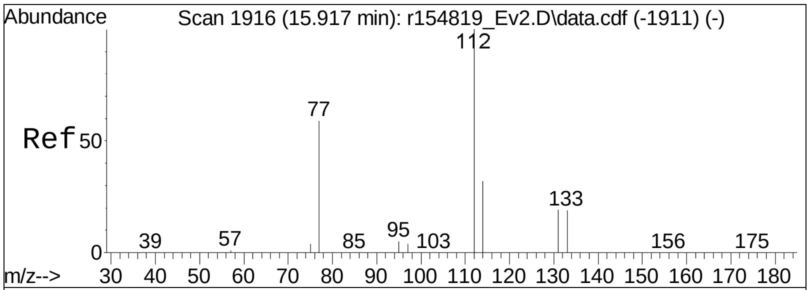


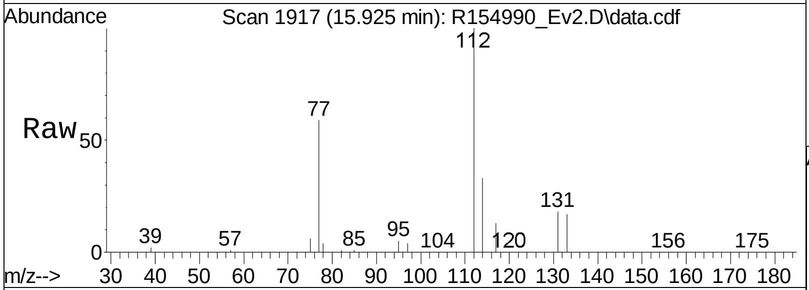


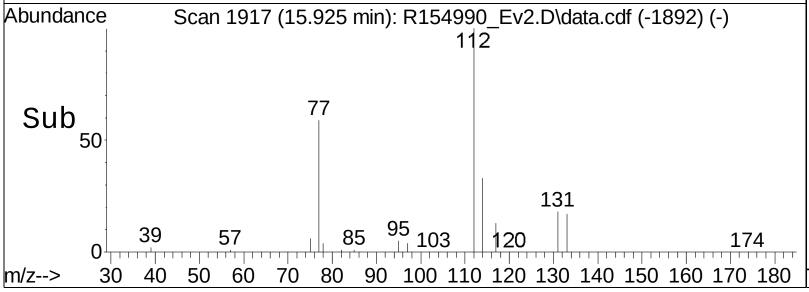
```
#58
1,1,1,2-tetrachloroethane
Concen:    4.57 ppbV
RT:   15.91 min  Scan# 1915
Delta R.T.  0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:131 Resp:   56604
Ion  Ratio  Lower  Upper
131  100
133   94.4   74.6  111.8
 95   36.2   28.3   42.5
```





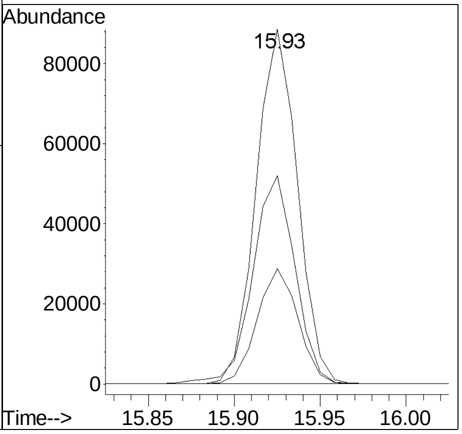


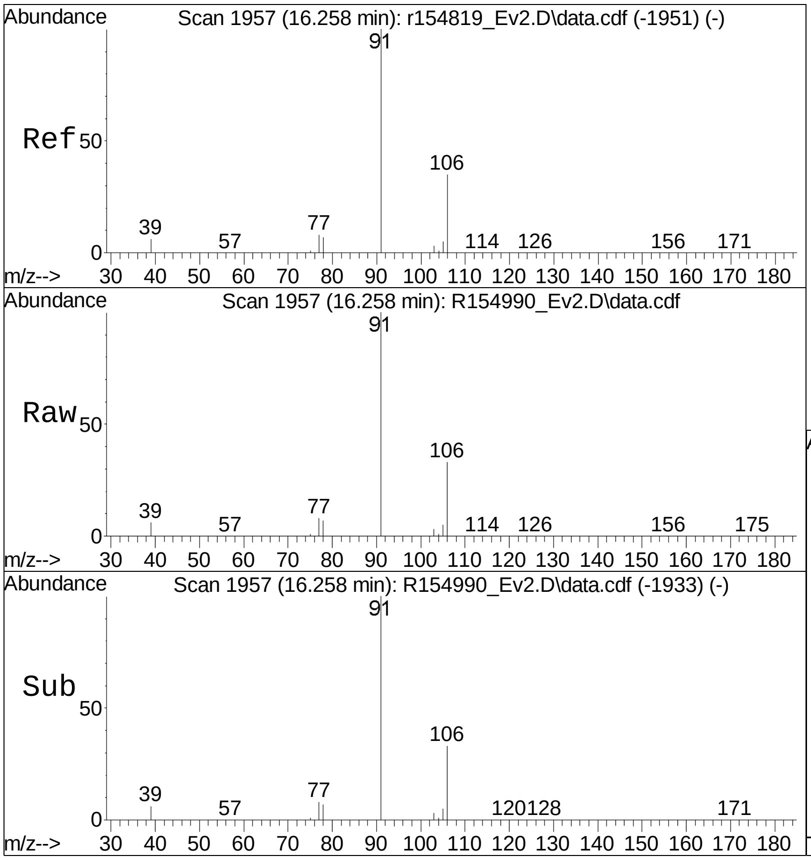


#59
chlorobenzene
Concen: 4.79 ppbV
RT: 15.93 min Scan# 1917
Delta R.T. 0.008 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:112 Resp: 148191

Ion	Ratio	Lower	Upper
112	100		
114	32.5	25.4	38.0
77	58.7	48.0	72.0

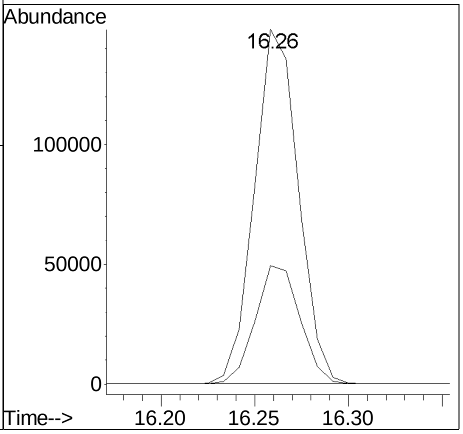


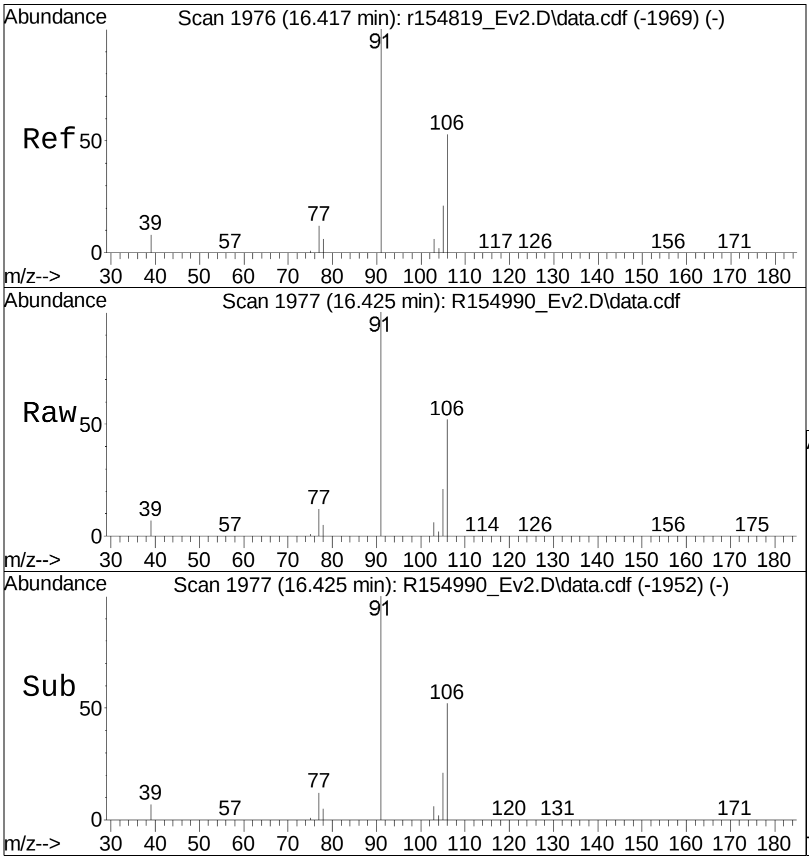


#60
ethylbenzene
Concen: 4.92 ppbV
RT: 16.26 min Scan# 1957
Delta R.T. 0.000 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 91 Resp: 241821

Ion	Ratio	Lower	Upper
91	100		
106	33.3	27.8	41.6

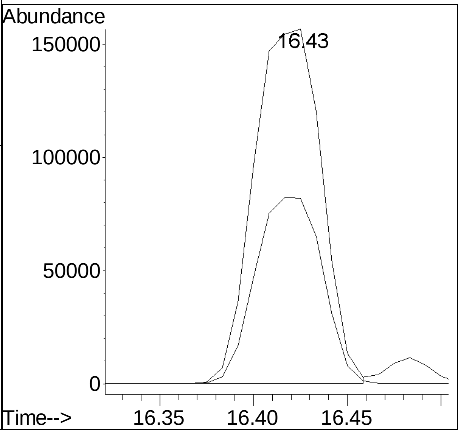


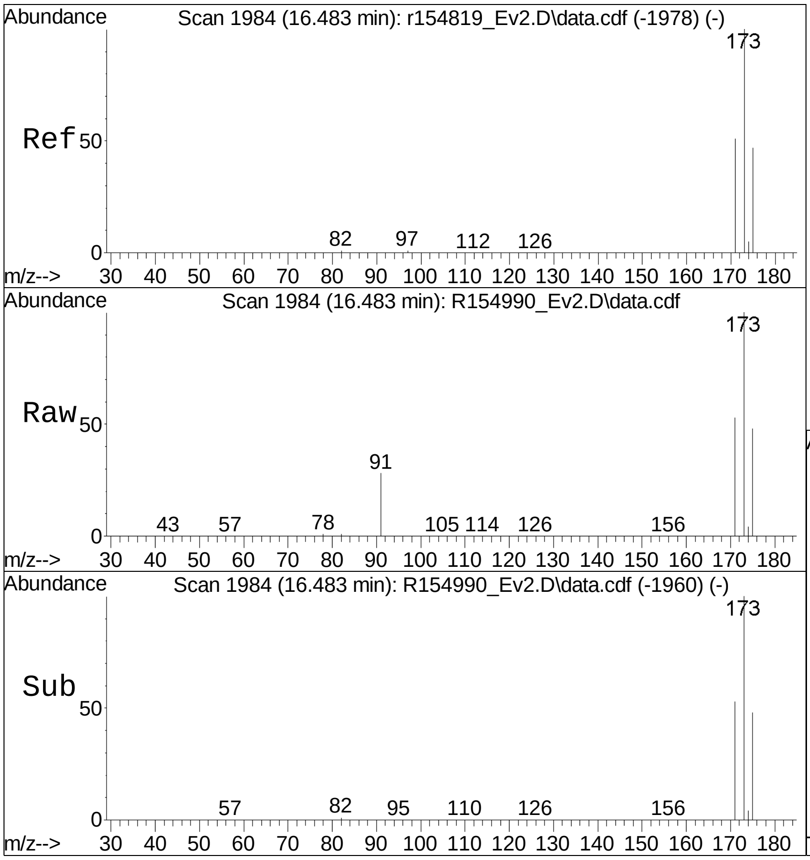


#61
m+p-xylene
Concen: 9.86 ppbV
RT: 16.43 min Scan# 1977
Delta R.T. 0.008 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion: 91 Resp: 394738

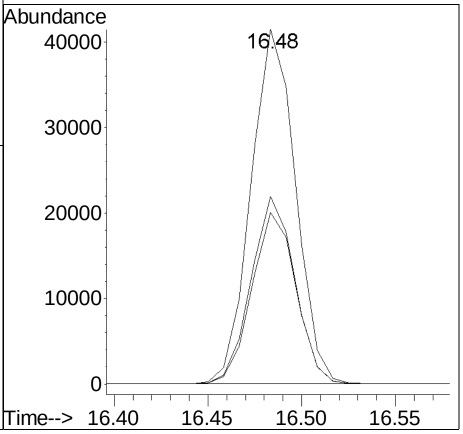
Ion	Ratio	Lower	Upper
91	100		
106	52.3	42.6	63.8

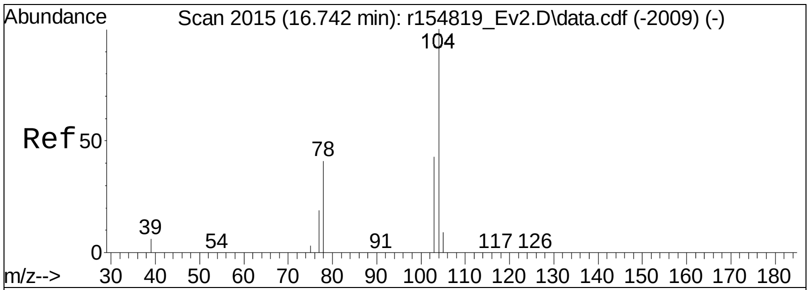


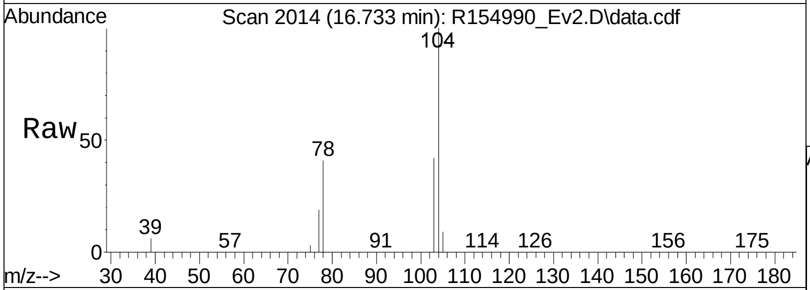


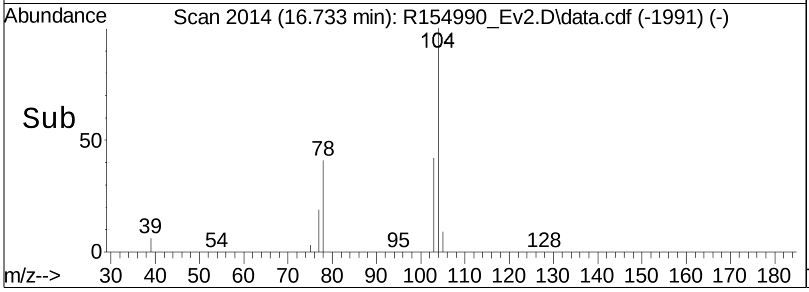
```
#62
bromoform
Concen:    5.55 ppbV
RT:   16.48 min  Scan# 1984
Delta R.T.  0.000 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:173 Resp:   68540
Ion  Ratio  Lower  Upper
173  100
175   48.4   37.4   56.0
171   52.9   41.0   61.4
```



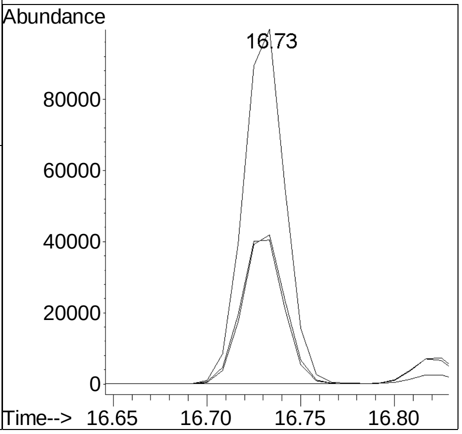


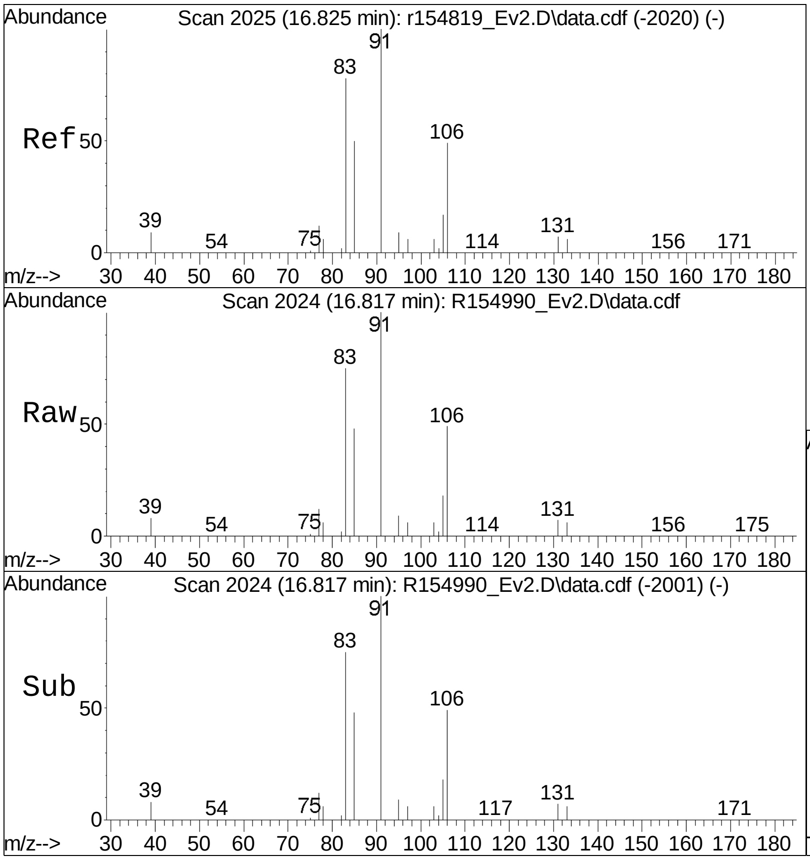




```
#63
styrene
Concen:    4.83 ppbV
RT:   16.73 min  Scan# 2014
Delta R.T.  -0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

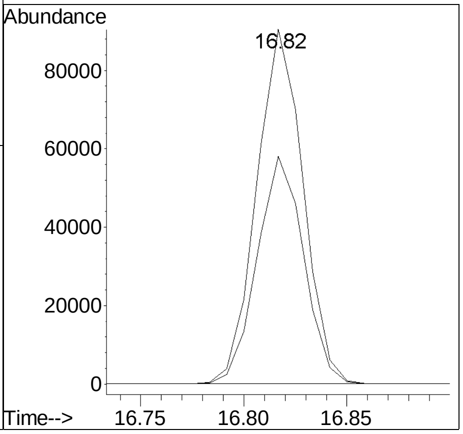
Tgt Ion:104 Resp:  155910
Ion  Ratio  Lower  Upper
104  100
103   42.0   34.2   51.4
 78   40.6   32.5   48.7
```

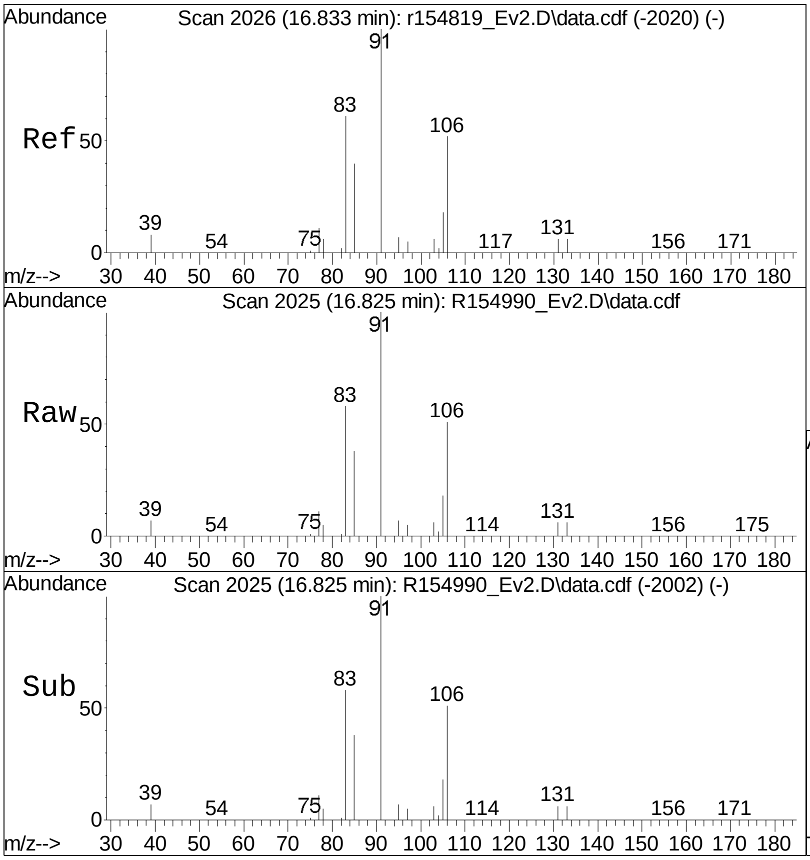




```
#64
1,1,2,2-tetrachloroethane
Concen:    4.95 ppbV
RT:   16.82 min  Scan# 2024
Delta R.T.  -0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

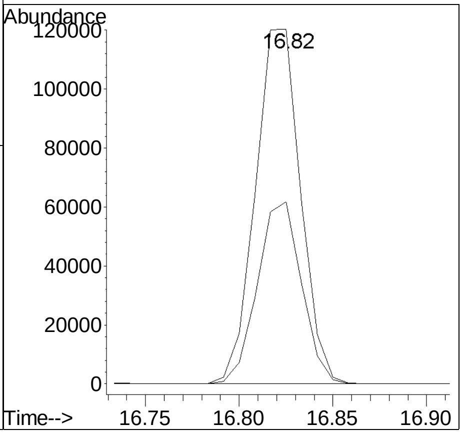
Tgt Ion: 83 Resp:  141526
Ion  Ratio  Lower  Upper
 83  100
 85   64.2   50.8   76.2
```

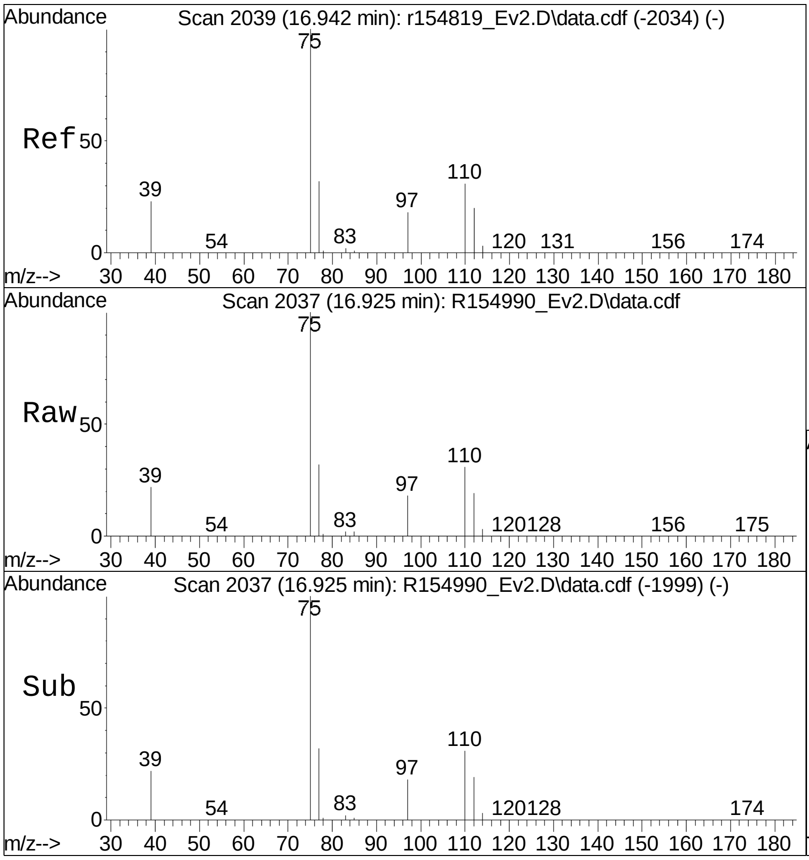




```
#65
o-xylene
Concen:    4.99 ppbV
RT:   16.82 min  Scan# 2025
Delta R.T.  -0.008 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

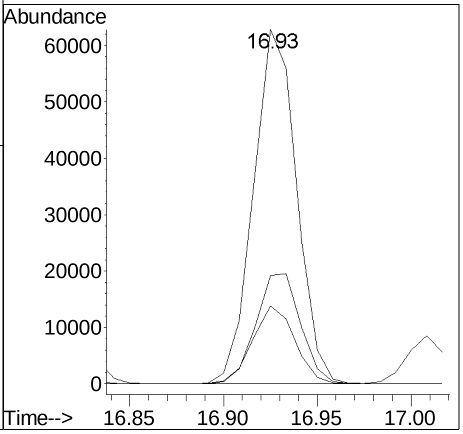
Tgt Ion: 91 Resp:  201953
Ion  Ratio  Lower  Upper
 91  100
106   51.4   41.2   61.8
```





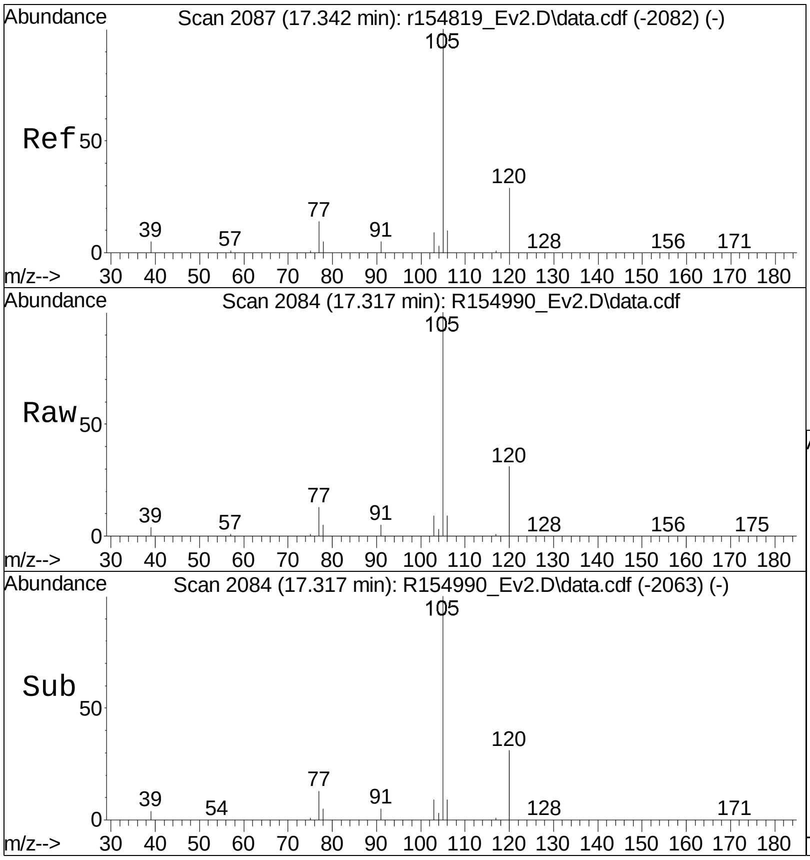
```
#66
1,2,3-Trichloropropane
Concen:    4.37 ppbV
RT:   16.93 min  Scan# 2037
Delta R.T.  -0.017 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

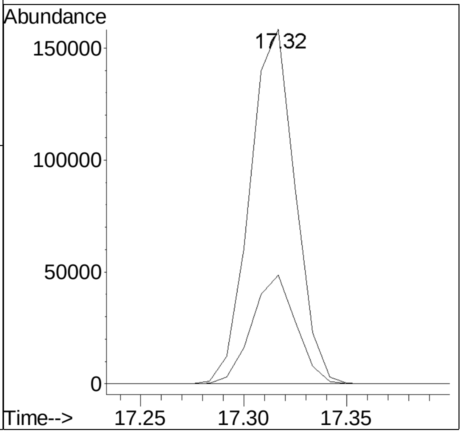
Tgt Ion: 75 Resp:  100680
Ion  Ratio  Lower  Upper
 75  100
110   32.3   24.7   37.1
 39   21.5   18.6   27.8
```

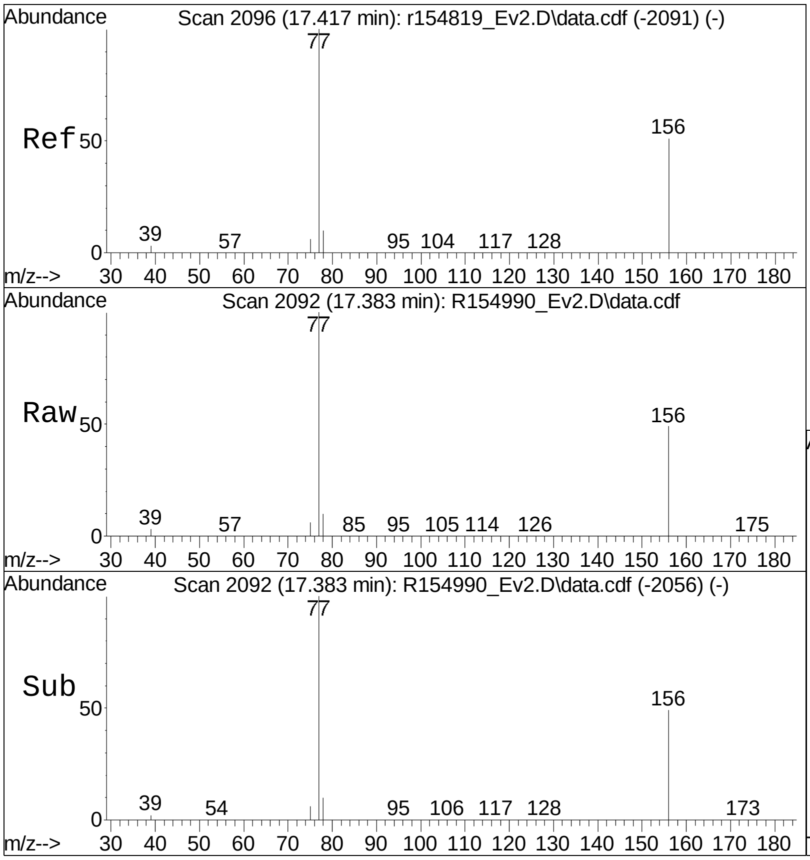


#68
isopropylbenzene
Concen: 4.60 ppbV
RT: 17.32 min Scan# 2084
Delta R.T. -0.025 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:105 Resp: 242315
Ion Ratio Lower Upper
105 100
120   30.7   23.5   35.3



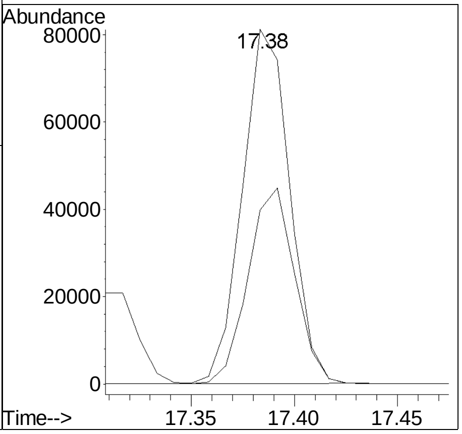


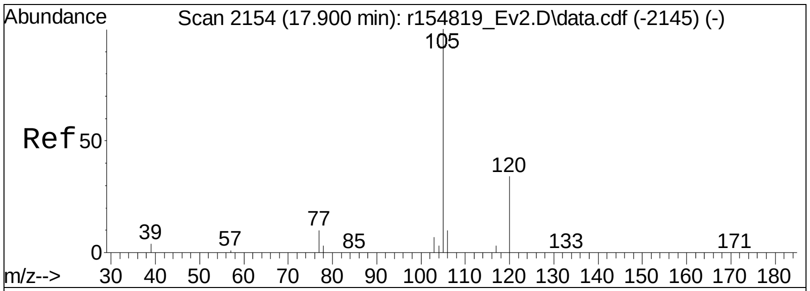


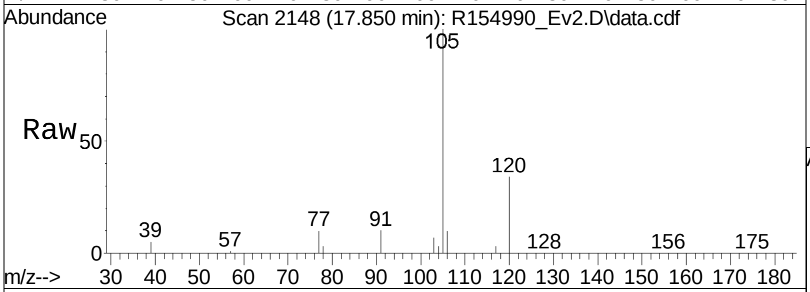
#69
Bromobenzene
Concen: 4.38 ppbV
RT: 17.38 min Scan# 2092
Delta R.T. -0.033 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

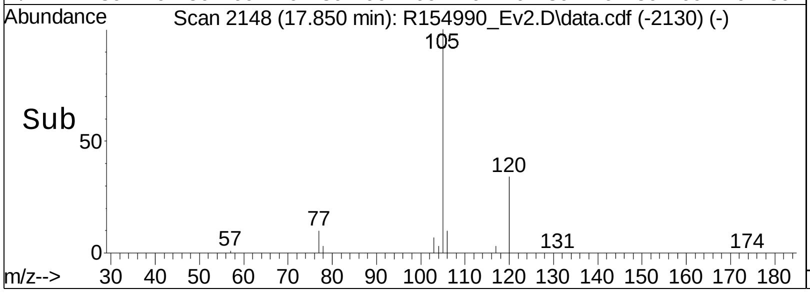
Tgt Ion: 77 Resp: 129357

Ion	Ratio	Lower	Upper
77	100		
156	54.7	42.6	64.0



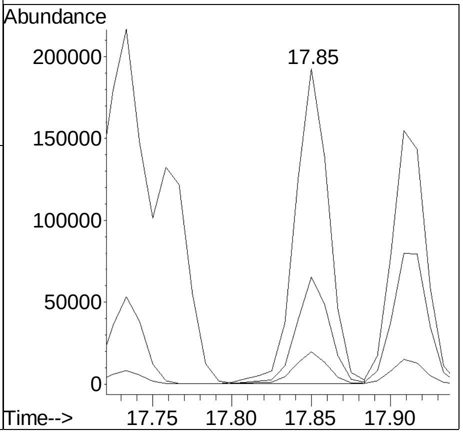

Scan 2154 (17.900 min): r154819_Ev2.D\data.cdf (-2145) (-)

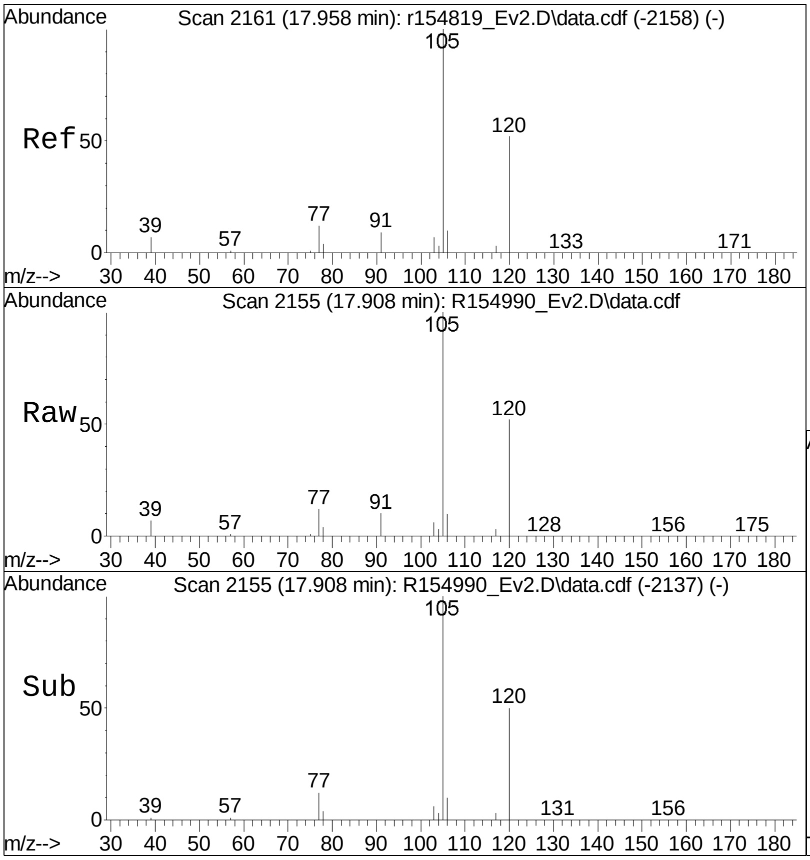

Scan 2148 (17.850 min): R154990_Ev2.D\data.cdf


Scan 2148 (17.850 min): R154990_Ev2.D\data.cdf (-2130) (-)

```
#70
4-ethyl toluene
Concen:    4.88 ppbV
RT:   17.85 min  Scan# 2148
Delta R.T.  -0.050 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

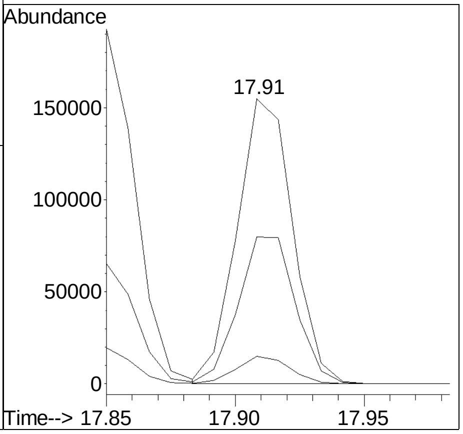
Tgt Ion:105 Resp:  283414
Ion  Ratio  Lower  Upper
105  100
120   33.9   27.0   40.4
 91   10.2    7.9   11.9
```

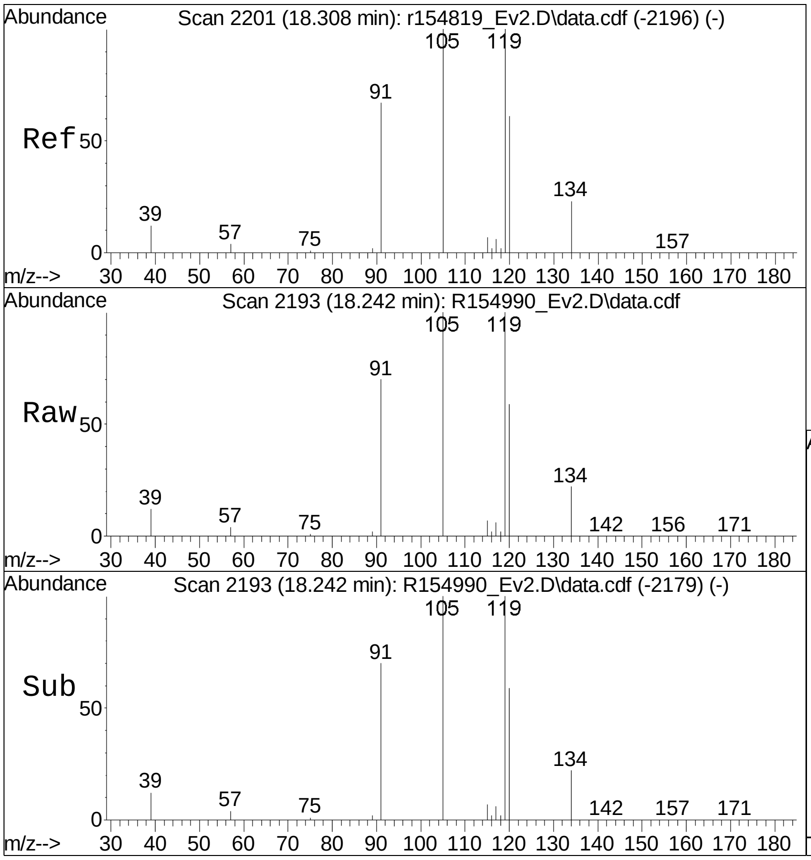




```
#71
1,3,5-trimethylbenzene
Concen:    5.00 ppbV
RT:   17.91 min  Scan# 2155
Delta R.T.  -0.050 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:105 Resp:  231405
Ion  Ratio  Lower  Upper
105  100
120   51.6   41.3   61.9
 91    9.7    7.6   11.4
```

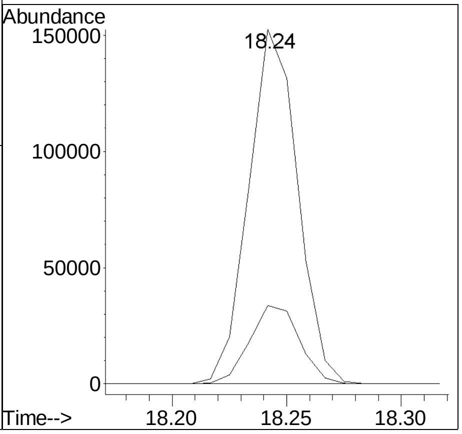


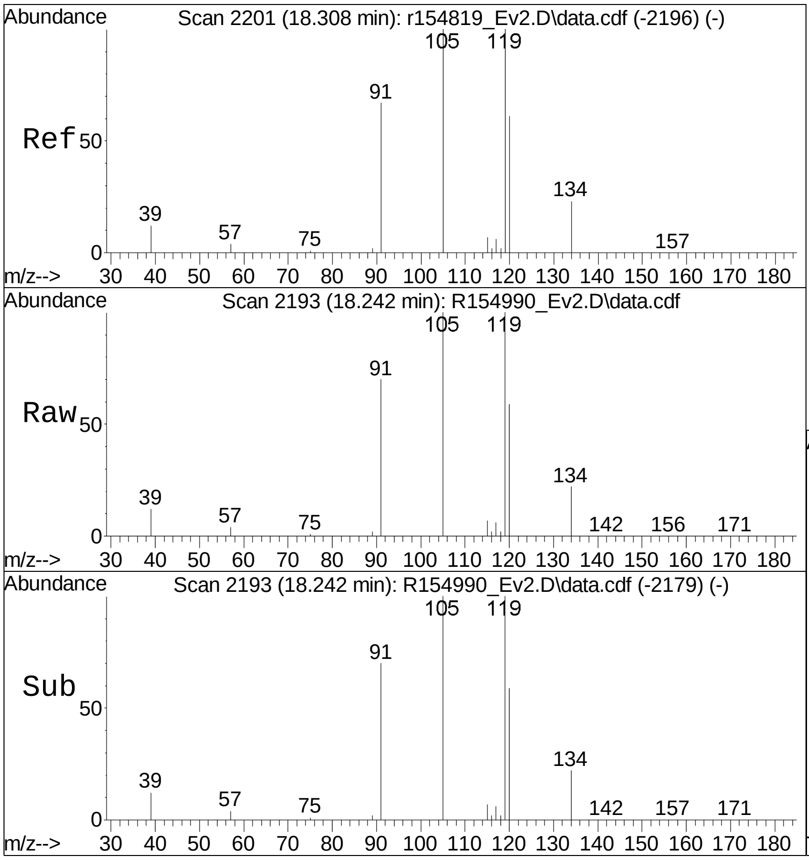


#72
tert-butylbenzene
Concen: 4.64 ppbV
RT: 18.24 min Scan# 2193
Delta R.T. -0.067 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:119 Resp: 226633

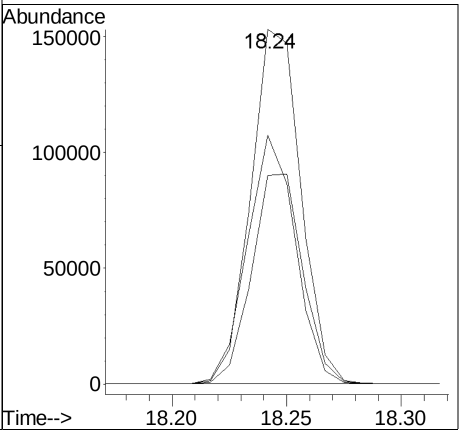
Ion	Ratio	Lower	Upper
119	100		
134	22.1	19.2	28.8

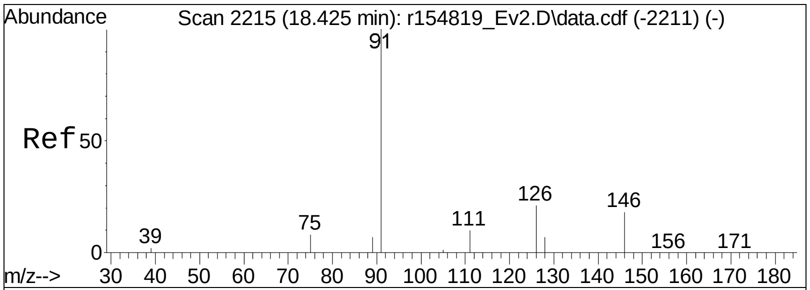


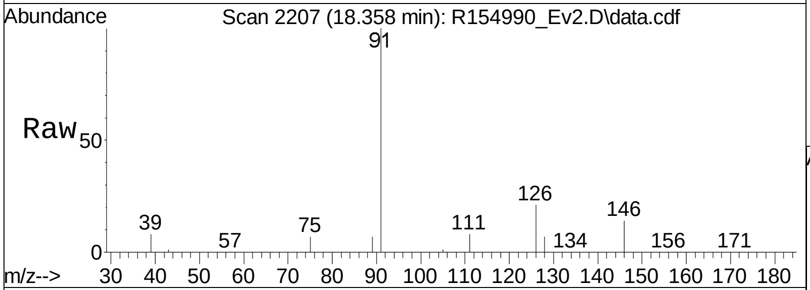


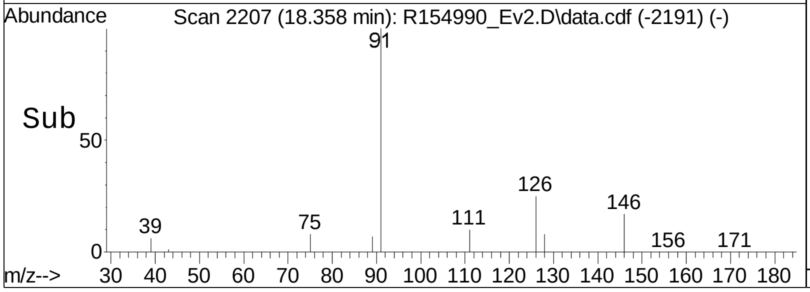
```
#73
1,2,4-trimethylbenzene
Concen:    5.14 ppbV
RT:   18.24 min  Scan# 2193
Delta R.T.  -0.067 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:105 Resp:  233486
Ion  Ratio  Lower  Upper
105  100
120   58.8   48.6   72.8
 91   70.1   53.8   80.6
```



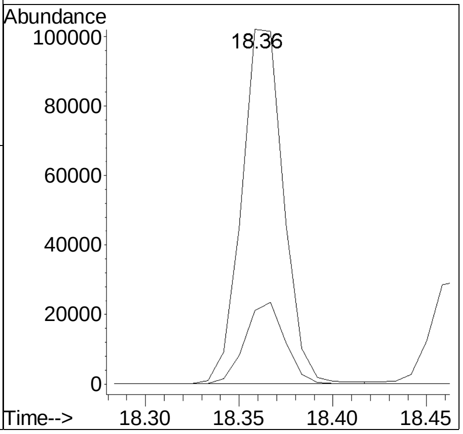


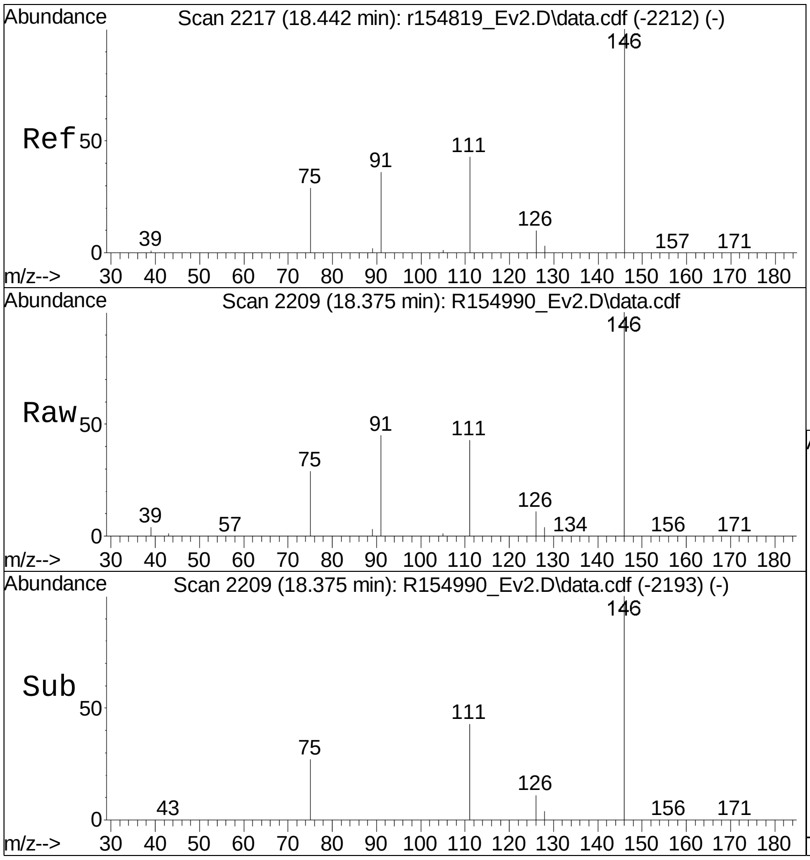




```
#74
Benzyl Chloride
Concen:    5.24 ppbV
RT:   18.36 min  Scan# 2207
Delta R.T.  -0.067 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

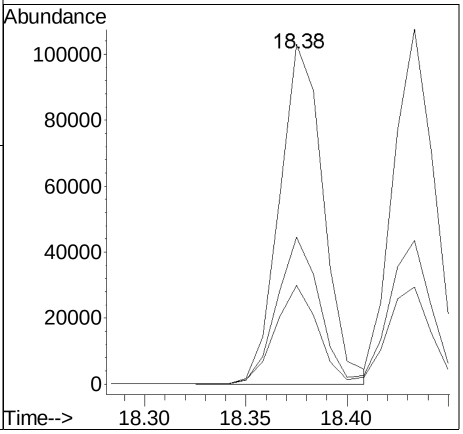
Tgt Ion: 91 Resp:  158659
Ion  Ratio  Lower  Upper
 91  100
126   20.7   17.2   25.8
```

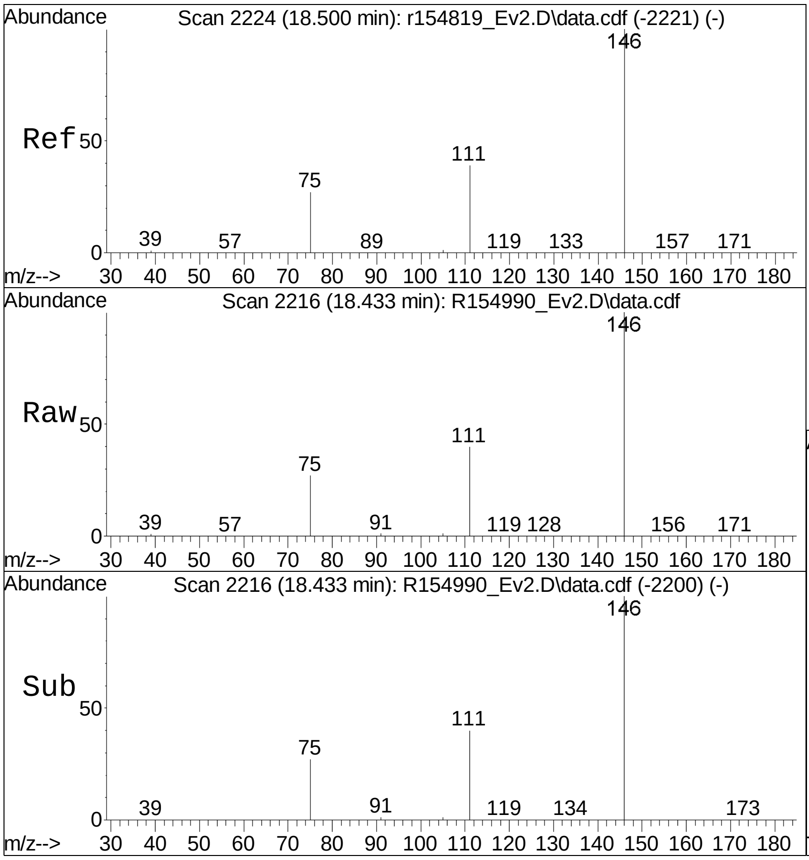




```
#75
1,3-dichlorobenzene
Concen:    5.03 ppbV m
RT:   18.38 min  Scan# 2209
Delta R.T.  -0.067 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

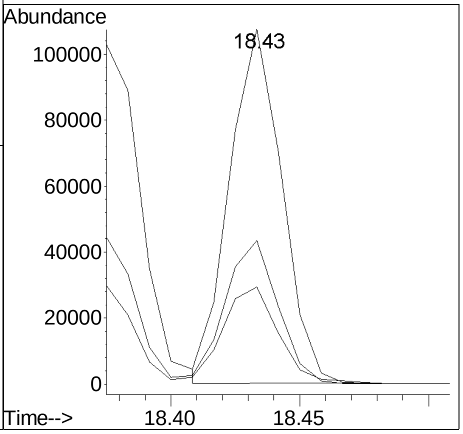
Tgt Ion:146 Resp:  155500
Ion  Ratio  Lower  Upper
146  100
111   43.2   34.1   51.1
 75   29.0   22.9   34.3
```

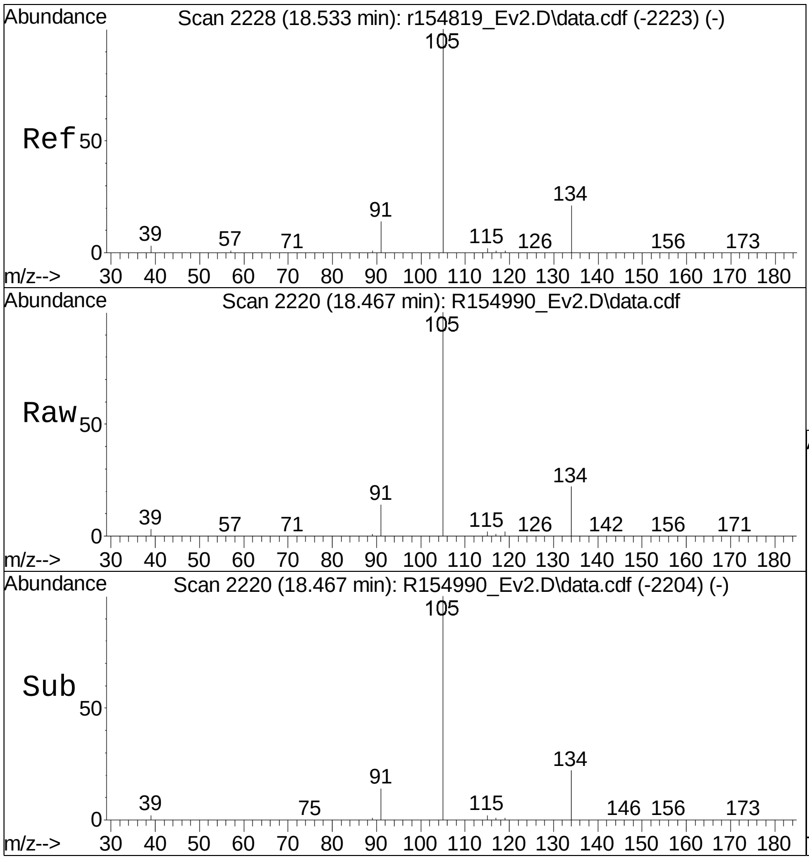




```
#76
1,4-dichlorobenzene
Concen:    4.95 ppbV
RT:   18.43 min  Scan# 2216
Delta R.T.  -0.067 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

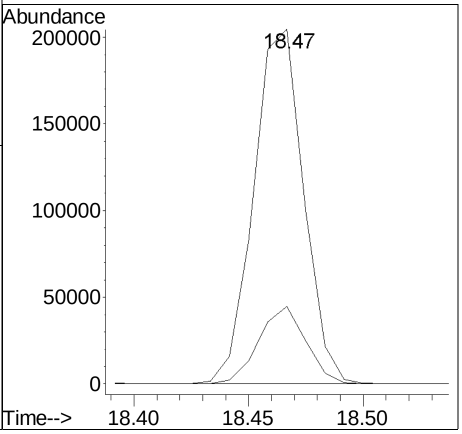
Tgt Ion:146 Resp:  151760
Ion  Ratio  Lower  Upper
146  100
111   40.4   31.6   47.4
 75   27.3   22.6   34.0
```

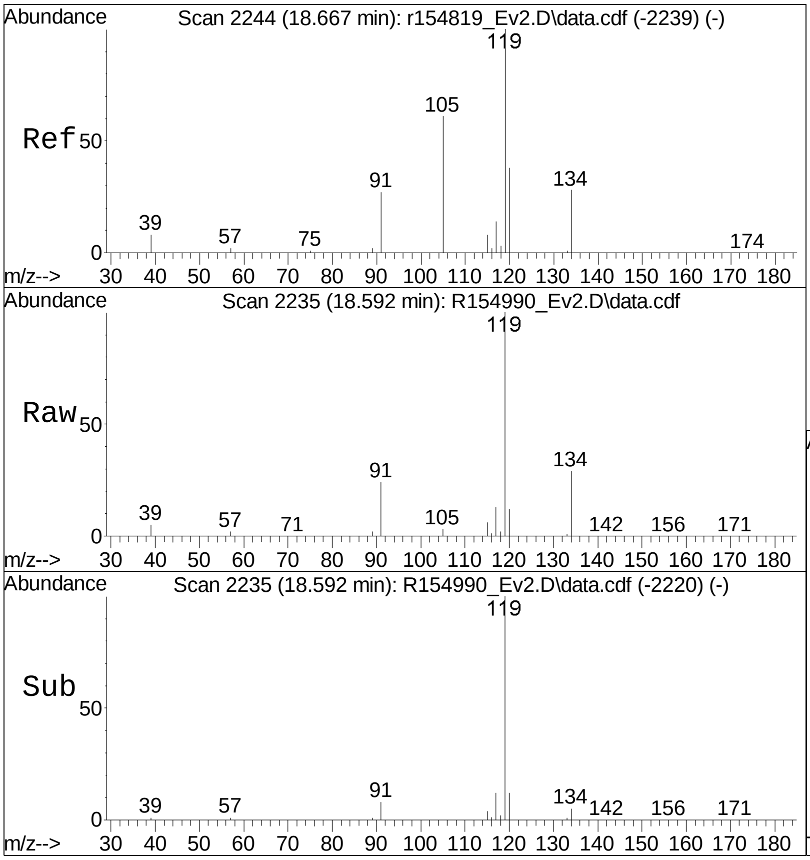




```
#77
sec-butylbenzene
Concen:    4.63 ppbV
RT:   18.47 min  Scan# 2220
Delta R.T.  -0.067 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:105 Resp:  309599
Ion  Ratio  Lower  Upper
105  100
134   21.9   16.9   25.3
```

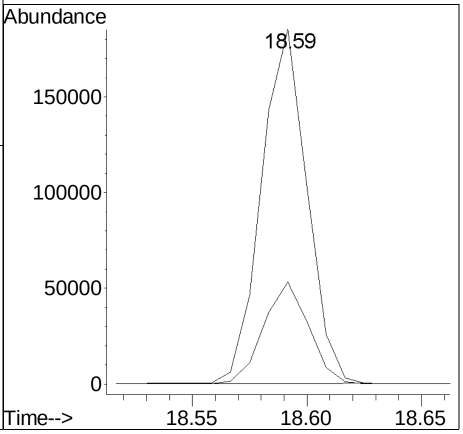


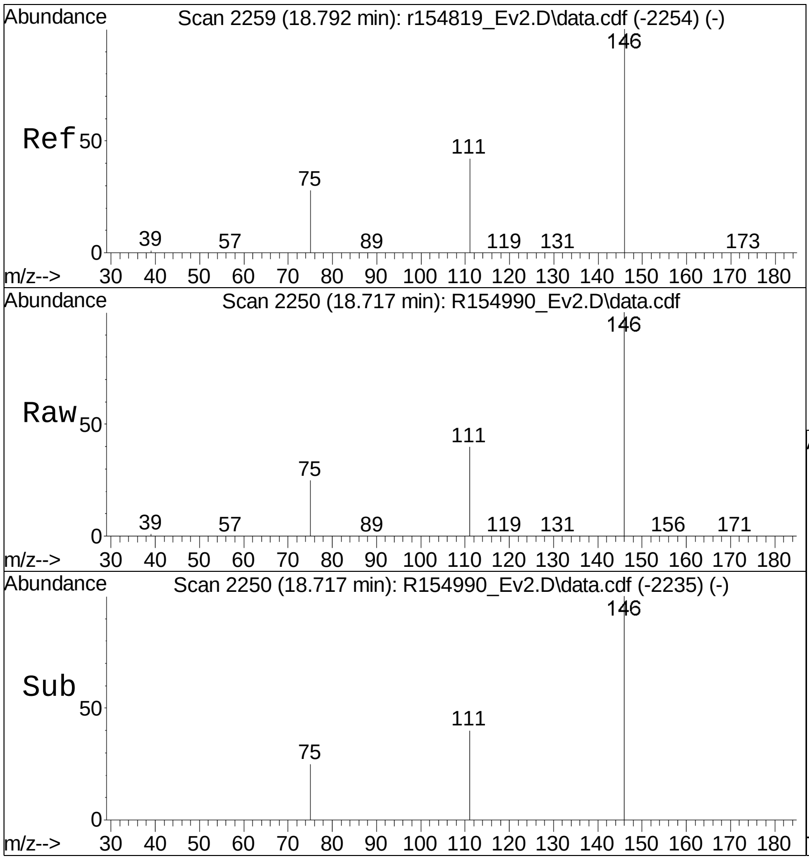


#78
p-isopropyltoluene
Concen: 4.43 ppbV
RT: 18.59 min Scan# 2235
Delta R.T. -0.075 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:119 Resp: 255845

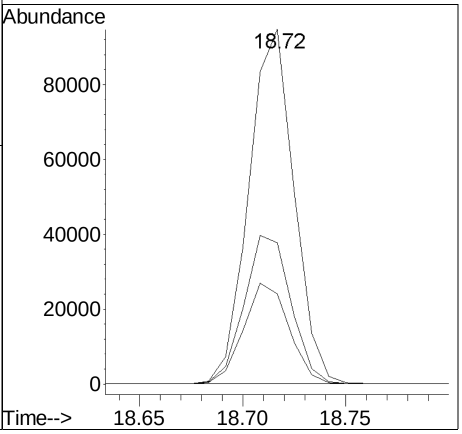
Ion	Ratio	Lower	Upper
119	100		
134	28.7	22.4	33.6

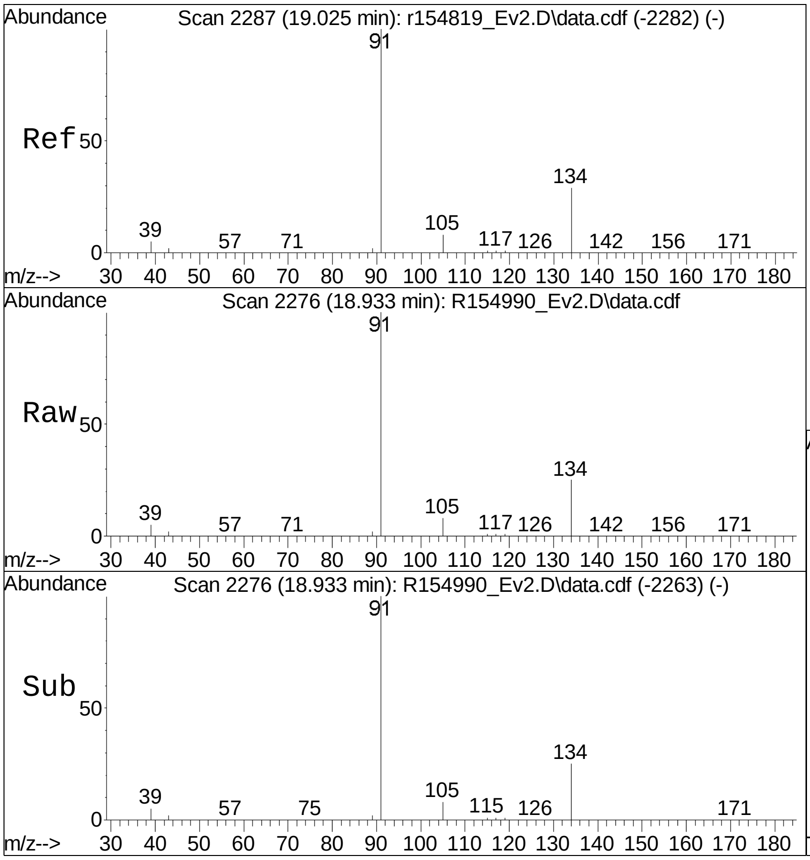




```
#79
1,2-dichlorobenzene
Concen:    5.07 ppbV
RT:   18.72 min  Scan# 2250
Delta R.T.  -0.075 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:146 Resp:  144515
Ion  Ratio  Lower  Upper
146  100
111   39.8   33.8   50.6
 75   25.4   22.6   34.0
```

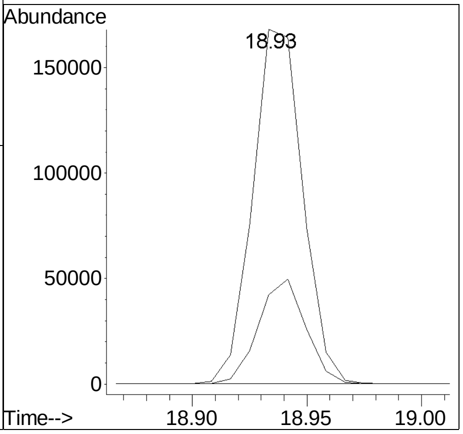


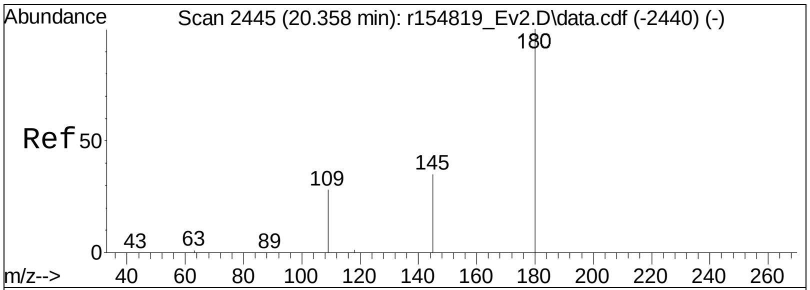


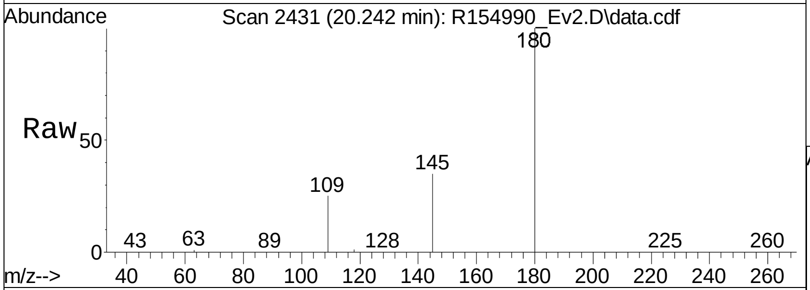
#80
n-butylbenzene
Concen: 4.92 ppbV
RT: 18.93 min Scan# 2276
Delta R.T. -0.092 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

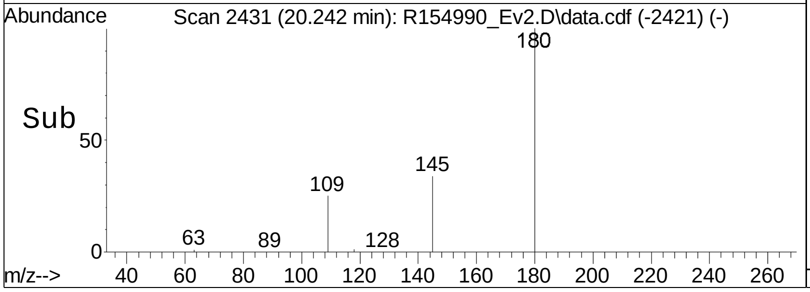
Tgt Ion: 91 Resp: 256123

Ion	Ratio	Lower	Upper
91	100		
134	25.2	22.9	34.3





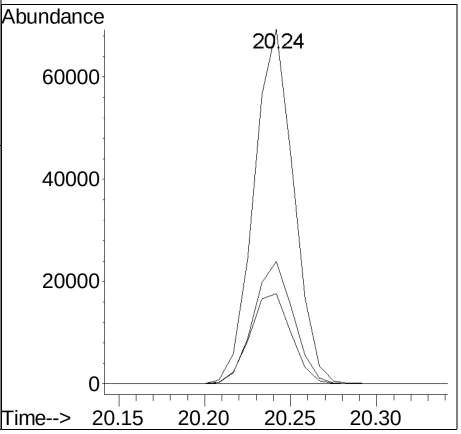


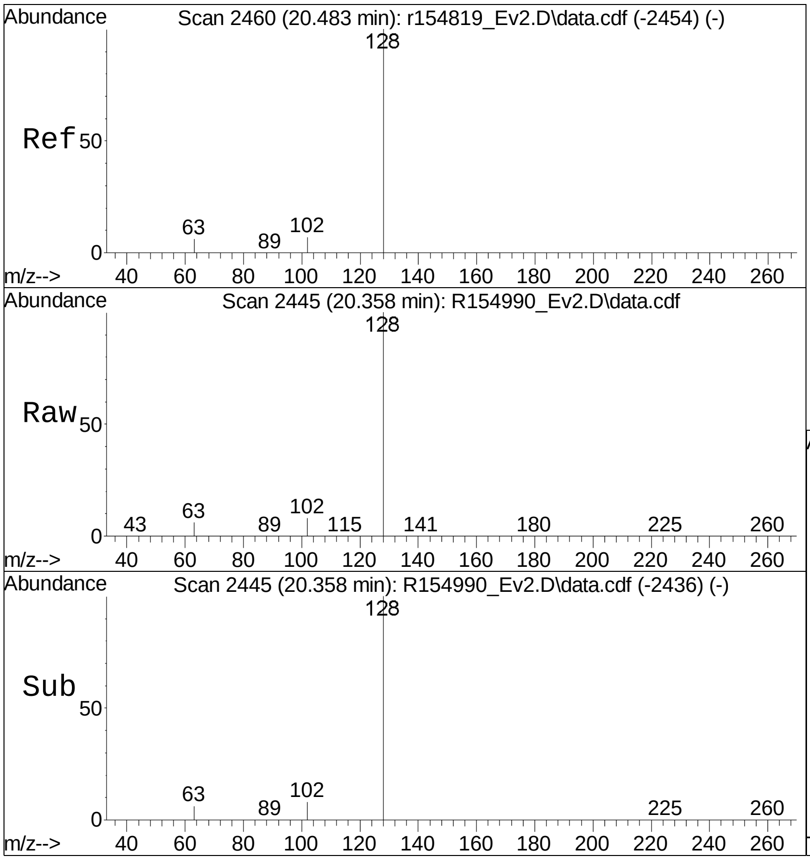


#81
1,2,4-trichlorobenzene
Concen: 5.64 ppbV
RT: 20.24 min Scan# 2431
Delta R.T. -0.117 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:180 Resp: 111634

Ion	Ratio	Lower	Upper
180	100		
145	34.5	27.8	41.6
109	25.5	22.2	33.2

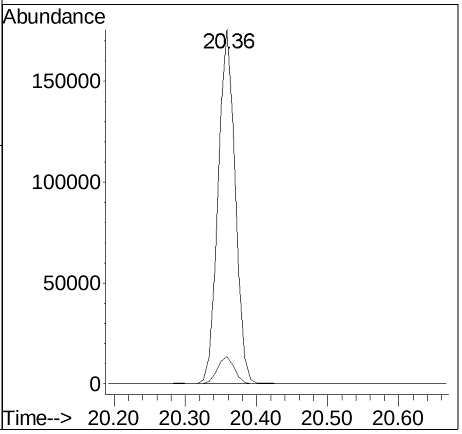


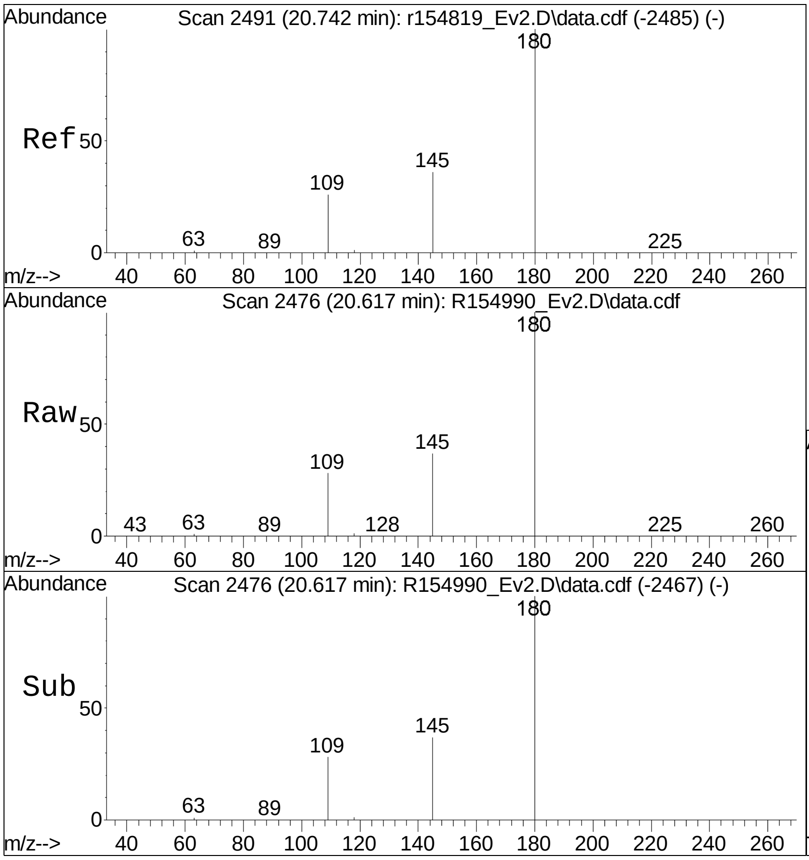


#82
naphthalene
Concen: 5.20 ppbV
RT: 20.36 min Scan# 2445
Delta R.T. -0.125 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:128 Resp: 293176

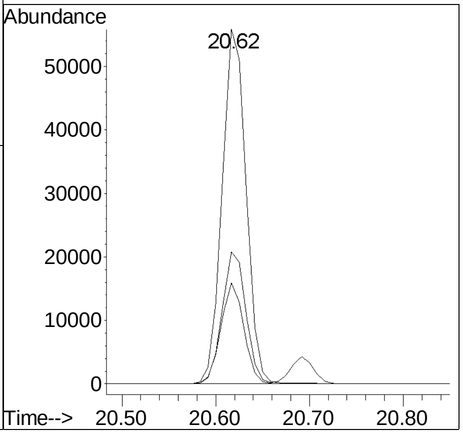
Ion	Ratio	Lower	Upper
128	100		
102	7.7	5.9	8.9

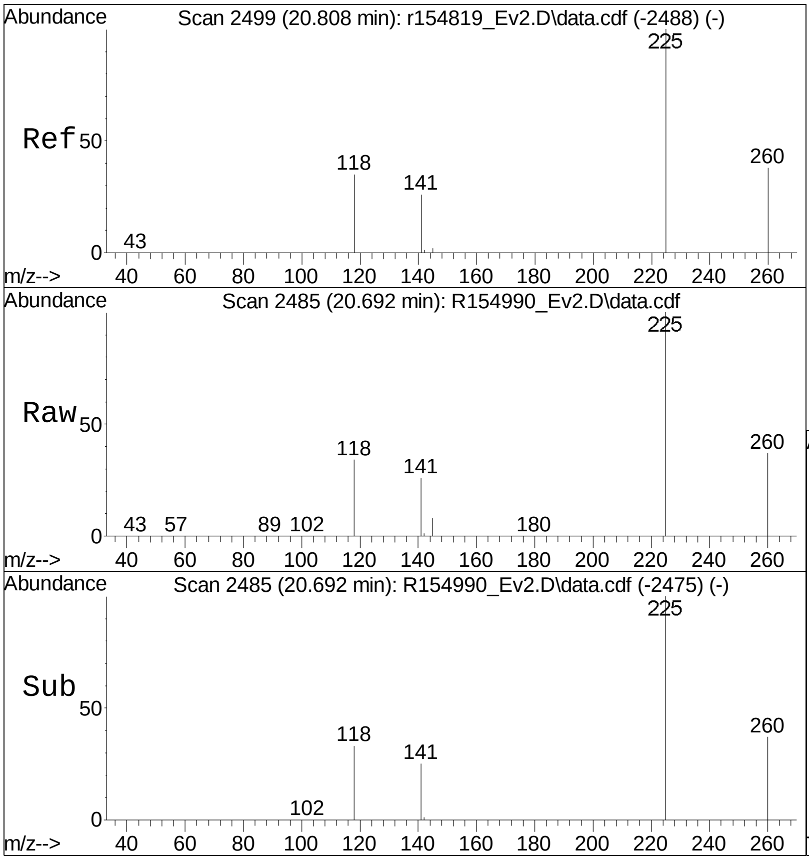




```
#83
1,2,3-trichlorobenzene
Concen:    5.26 ppbV
RT:   20.62 min  Scan# 2476
Delta R.T.  -0.125 min
Lab File:   R154990_Ev2.D
Acq:  2 Jan 2018  12:12 PM

Tgt Ion:180 Resp:   98813
Ion  Ratio  Lower  Upper
180  100
145   37.2   29.1   43.7
109   28.5   20.8   31.2
```

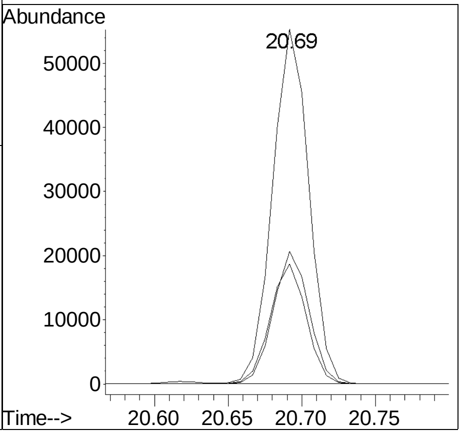




#84
hexachlorobutadiene
Concen: 5.72 ppbV
RT: 20.69 min Scan# 2485
Delta R.T. -0.117 min
Lab File: R154990_Ev2.D
Acq: 2 Jan 2018 12:12 PM

Tgt Ion:225 Resp: 94541

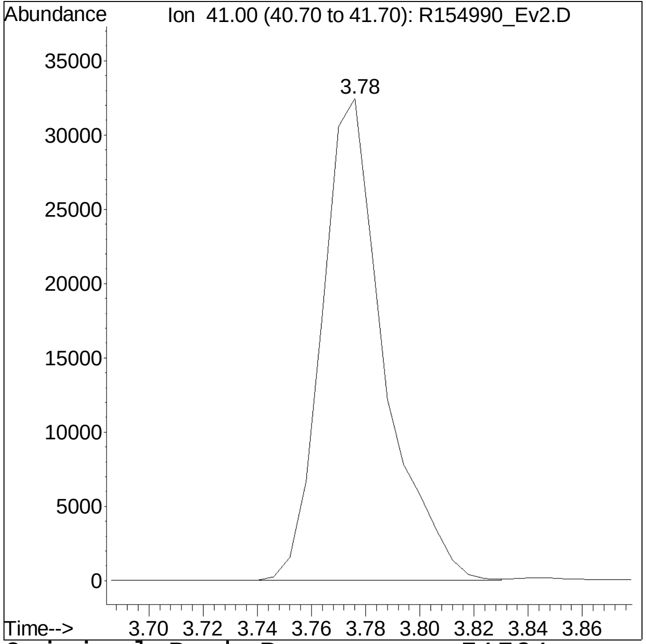
Ion	Ratio	Lower	Upper
225	100		
260	37.3	30.1	45.1
118	33.9	28.0	42.0

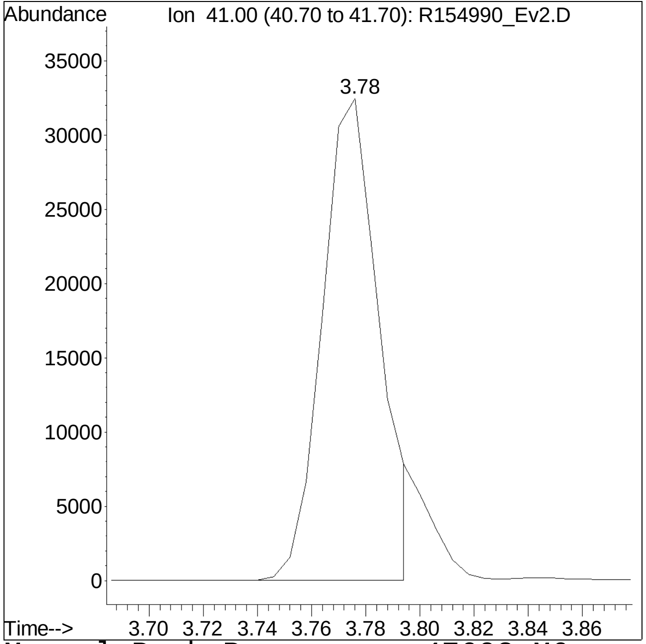


Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : R154990_Ev2.D               Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 12:12 PM           Instrument  :
Sample      : WG1078229-3,3,250,250       Quant Date  : 1/2/2018  1:03 pm
```

Compound #2: propylene





Original Peak Response = 51591   Manual Peak Response = 47603 M6

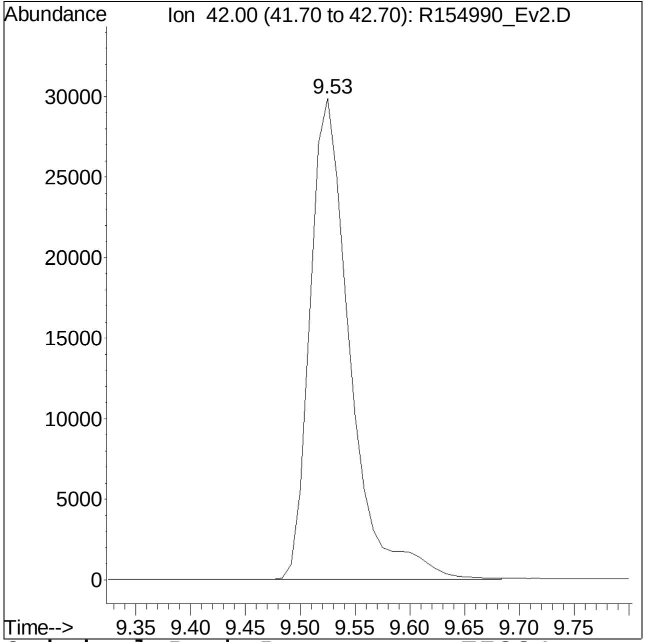
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

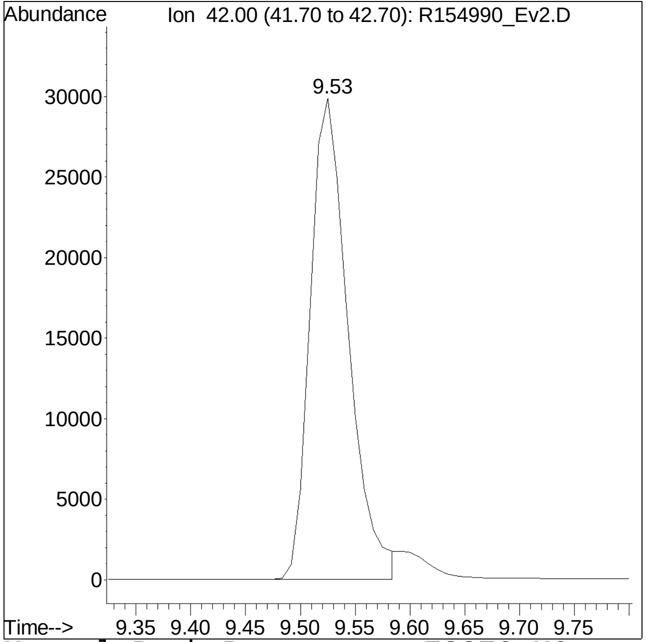
Data Path : O:\Forensics\Data\Airlab15\
Data File : R154990_Ev2.D
Date Inj'd : 1/2/2018 12:12 PM
Sample : WG1078229-3,3,250,250

QMethod : TSIM171222.M
Operator : AIRLAB15:GJ
Instrument :
Quant Date : 1/2/2018 1:03 pm

Compound #31: Tetrahydrofuran



Original Peak Response = 75834



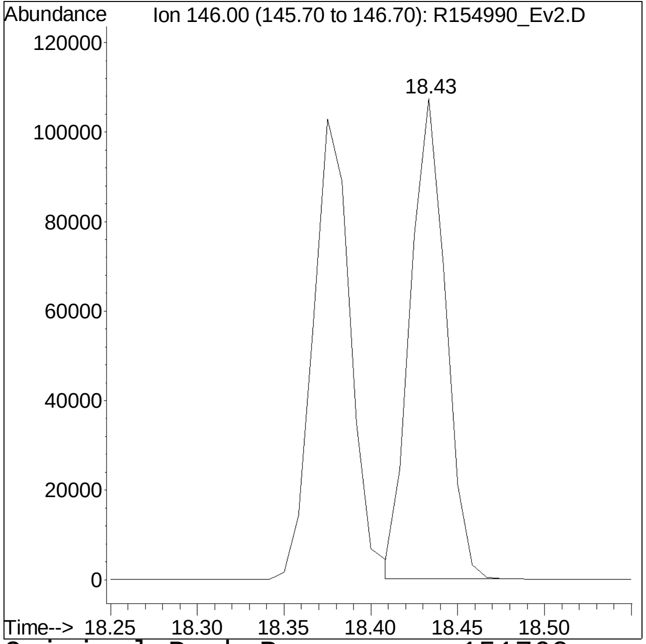
Manual Peak Response = 72270 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

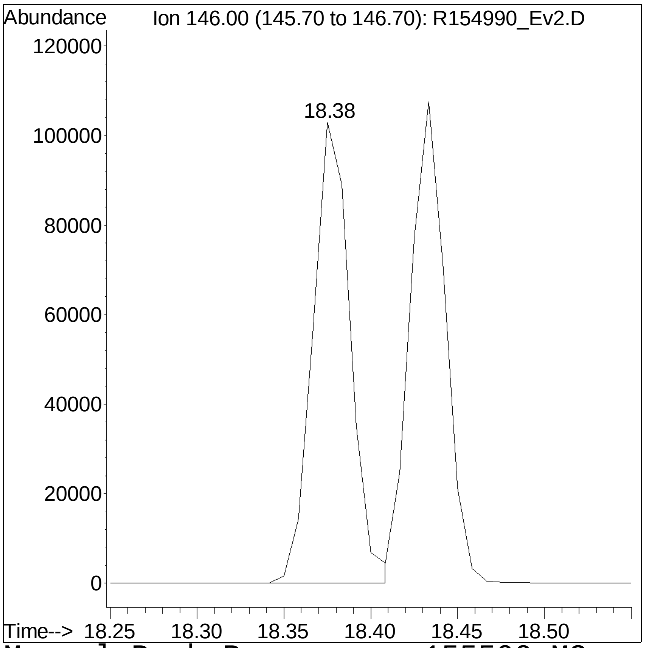
Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : R154990_Ev2.D               Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018 12:12 PM           Instrument  :
Sample      : WG1078229-3,3,250,250       Quant Date  : 1/2/2018  1:03 pm
```

Compound #75: 1,3-dichlorobenzene



Original Peak Response = 151760



Manual Peak Response = 155500 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

```
                    Quantitation Report    (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r154995_Ev2.D
Acq On    :  2 Jan 2018   6:50 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-5,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

Quant Time: Jan 03 07:09:01 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration

CCAL FILE    : O:\Forensics\Data\Airlab15\2018\180102SIM\R154990_Ev2.D
Sub List     : 7-NY-SIM - .

        Compound                    R.T. QIon  Response  Conc Units Dev(Min)
 ---------------------------------------------------------------------------
 Internal Standards
   1) bromochloromethane            8.91   49   124836    10.000 ppbV     0.00
   Standard Area  =       130072                 Recovery   =   95.97%
  33) 1,4-difluorobenzene          11.16  114   330266    10.000 ppbV     0.02
   Standard Area  =       339026                 Recovery   =   97.42%
  51) chlorobenzene-D5             15.88   54    56698    10.000 ppbV     0.00
   Standard Area  =        58190                 Recovery   =   97.44%

 System Monitoring Compounds

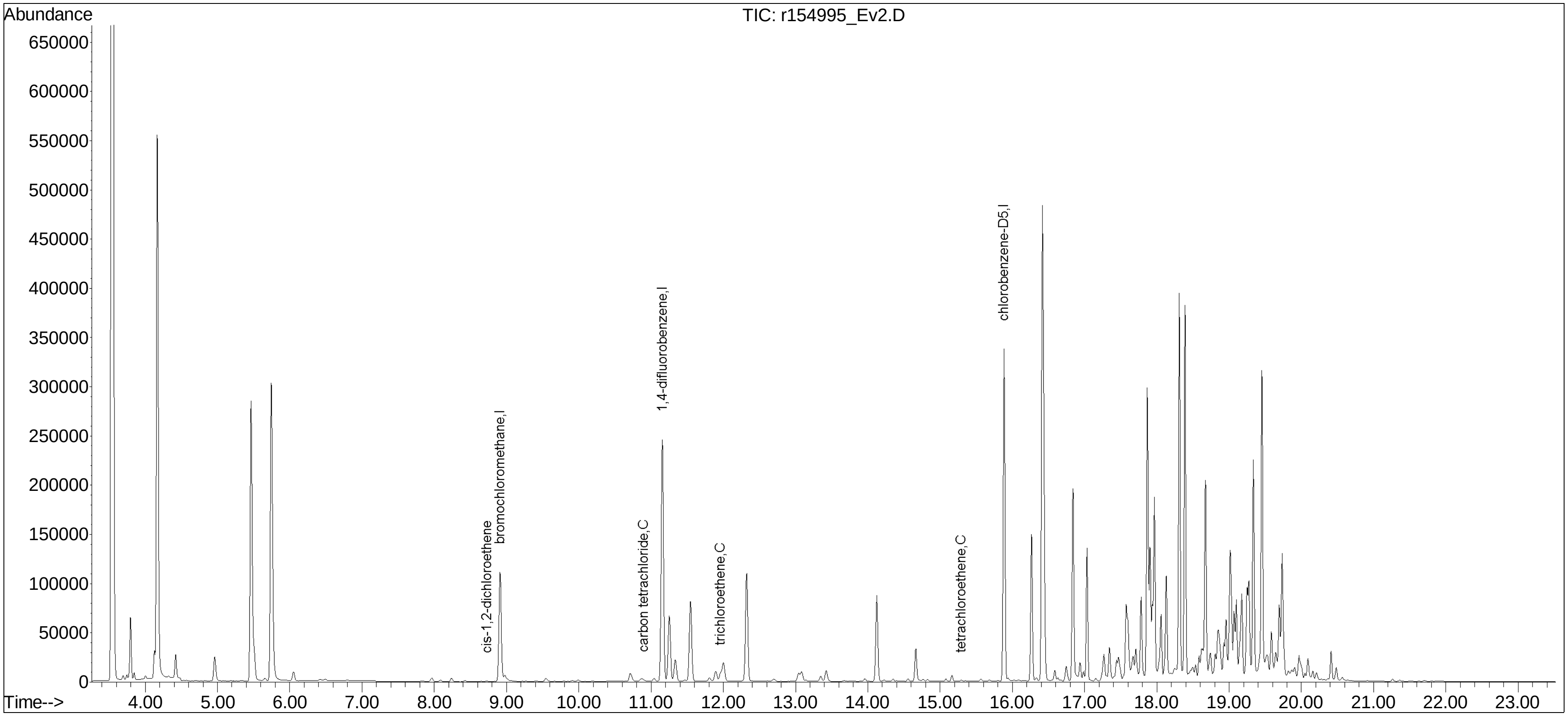
 Target Compounds                                                  Qvalue
   6) vinyl chloride                0.00               0       N.D.
  16) 1,1-dichloroethene            0.00               0       N.D.
  28) cis-1,2-dichloroethene        8.72   61        295      0.024 ppbV      94
  36) 1,1,1-trichloroethane        10.20               0       N.D.
  38) carbon tetrachloride         10.90  117        801      0.067 ppbV #    96
  44) trichloroethene              11.96  130       4406      0.324 ppbV      99
  57) tetrachloroethene            15.29  166        643      0.045 ppbV      91
 ---------------------------------------------------------------------------

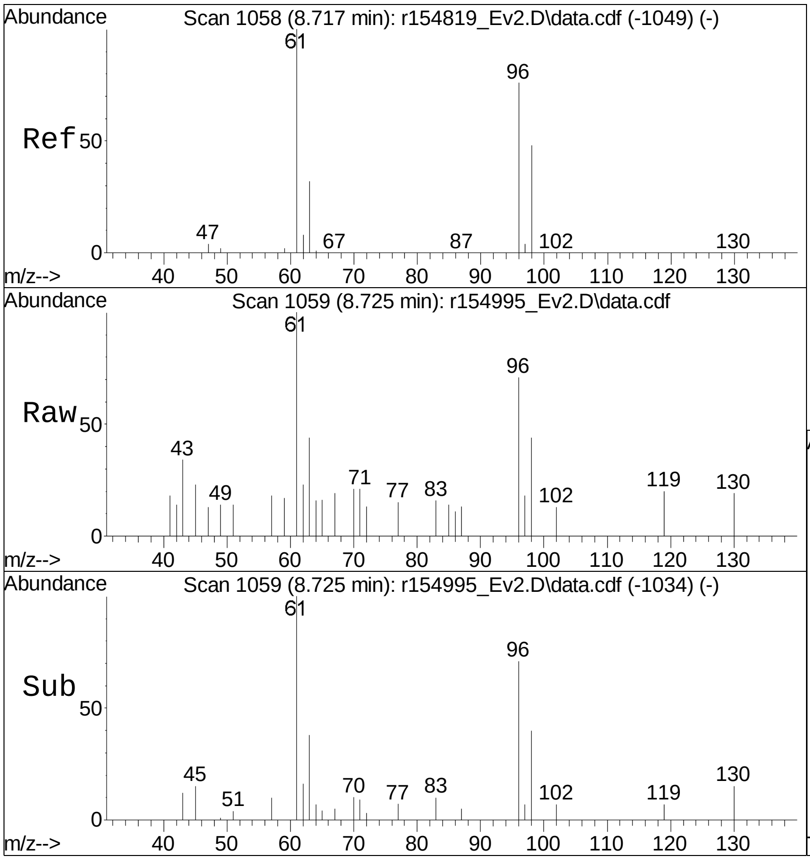
 (#) = qualifier out of range (m) = manual integration (+) = signals summed
```

```
Sub List     : 7-NY-SIM - .\Data\Airlab15\2018\180102SIM\R154990_Ev2.D

Data Path : O:\Forensics\Data\Airlab15\2018\180102SIM\
Data File : r154995_Ev2.D
Acq On    :  2 Jan 2018   6:50 PM
Operator  : AIRLAB15:GJ
Sample    : WG1078229-5,3,250,250
Misc      : WG1078229,ICAL14300
ALS Vial  : 0   Sample Multiplier: 1

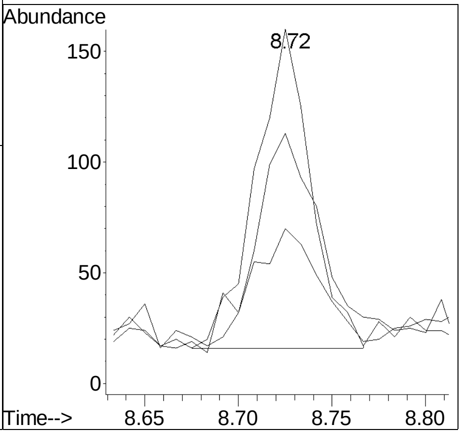
Quant Time: Jan 03 07:09:01 2018
Quant Method : O:\Forensics\Data\Airlab15\2018\180102SIM\TSIM171222.M
Quant Title  : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Sat Dec 23 10:17:55 2017
Response via : Initial Calibration
```

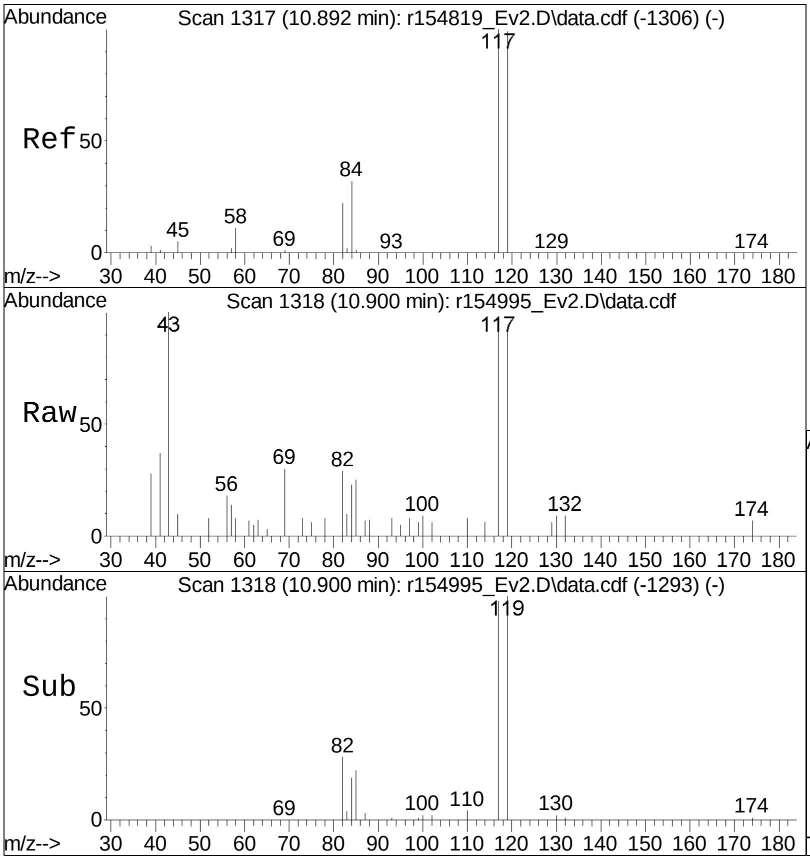




```
#28
cis-1,2-dichloroethene
Concen:    0.02 ppbV
RT:    8.72 min  Scan# 1059
Delta R.T.  0.008 min
Lab File:   r154995_Ev2.D
Acq:  2 Jan 2018   6:50 PM

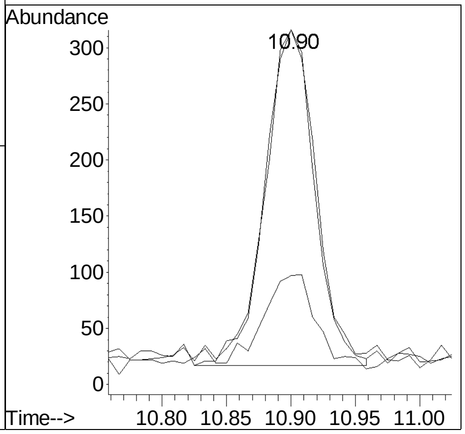
Tgt Ion: 61 Resp:     295
Ion  Ratio  Lower  Upper
 61  100
 96   70.6   60.7   91.1
 98   43.8   38.6   58.0
```

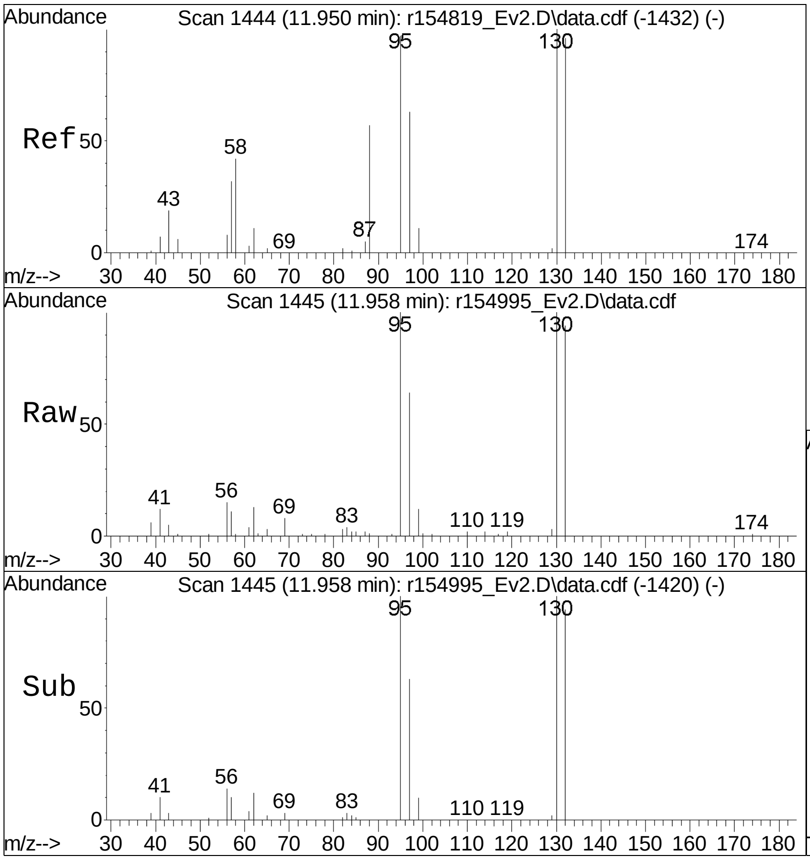




```
#38
carbon tetrachloride
Concen:    0.07 ppbV
RT:   10.90 min  Scan# 1318
Delta R.T.  0.008 min
Lab File:   r154995_Ev2.D
Acq:  2 Jan 2018   6:50 PM

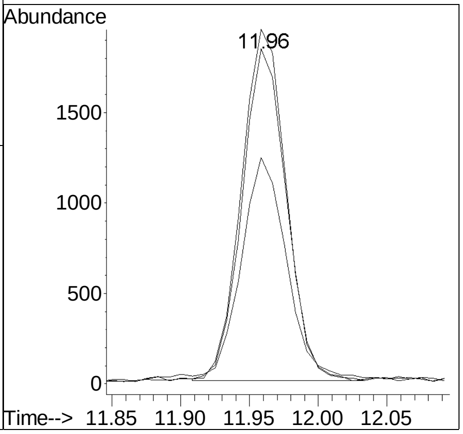
Tgt Ion:117 Resp:     801
Ion  Ratio  Lower  Upper
117  100
119  100.0   79.2  118.8
 82   30.7   18.1   27.1#
```

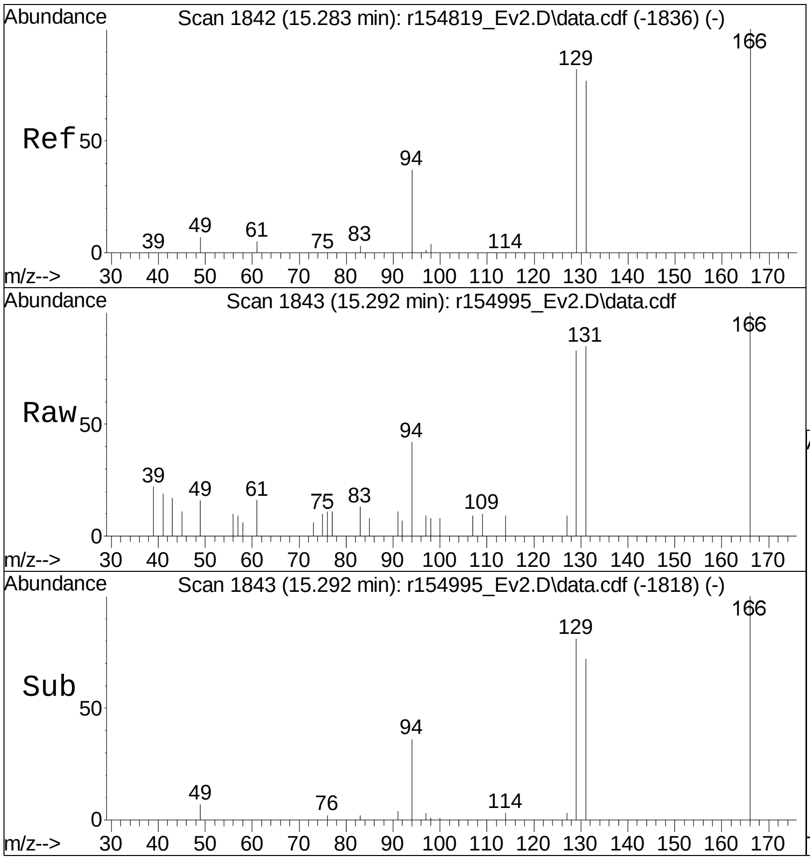




```
#44
trichloroethene
Concen:    0.32 ppbV
RT:   11.96 min  Scan# 1445
Delta R.T.  0.008 min
Lab File:   r154995_Ev2.D
Acq:  2 Jan 2018   6:50 PM

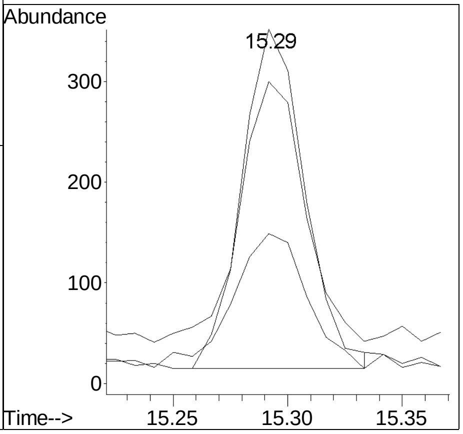
Tgt Ion:130 Resp:    4406
Ion  Ratio  Lower  Upper
130  100
132   94.5   76.7  115.1
 97   63.8   50.5   75.7
```





```
#57
tetrachloroethene
Concen:    0.05 ppbV
RT:   15.29 min  Scan# 1843
Delta R.T.  0.008 min
Lab File:   r154995_Ev2.D
Acq:  2 Jan 2018   6:50 PM

Tgt Ion:166 Resp:     643
Ion  Ratio  Lower  Upper
166  100
131   85.2   61.8   92.6
 94   42.3   29.8   44.8
```



Manual Integration/Negative Proof Report

```
Data Path   : O:\Forensics\Data\Airlab15\QMethod     : TSIM171222.M
Data File   : r154995_Ev2.D             Operator    : AIRLAB15:GJ
Date Inj'd  : 1/2/2018  6:50 PM         Instrument  :
Sample      : WG1078229-5,3,250,250     Quant Date  : 1/3/2018  7:09 am
```

There are no manual integrations or false positives in this file.

Calculation of Volatile Organic Compounds in Air

The instrument will calculate the concentration (ppbv). If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

Result, ppbv = C_s x DF
Where:
C_s = Concentration of sample (ppbv)
DF = Dilution Factor

Calculation of Instrument Dilution Factor

For dilutions, smaller sample volumes (< 250mL) are analyzed. The smallest volume that can be analyzed with accuracy is 10 mL.

Samples that arrive at the laboratory with pressures below -15 inches Hg must be pressurized with zero air to greater than -15 inches Hg. This pressurization results in a dilution factor.

Calculation of Dilution Factor
DF = V_{cf} / V_{ci}
Where:
V_{ci} = volume of air in canister prior to pressurization, L
P =

Conversion of ppbv to ug/m^3
ug/m^3 = (ppbv) * MW / 24.47
Where:
24.47 = molar gas constant (g/g-mole)
MW = molecular weight of the compound of interest

Dilution Factor for Pressurization of Subatmospheric Samples: Three Steps

Step 1: Calculate the volume in the canister prior to pressurization (Assume a 2.7 liter canister is used).

Dilution Factor for Pressurization of Subatmospheric Samples: Three Steps

Step 1: Calculate the volume in the canister prior to pressurization (Assume a 2.7 liter canister is used).

$V_{ci} = 2.7 * PI/14.696$

Step 2: Calculate the volume in the canister after pressurization.

$V_{cf} = 2.7 * PF/14.696$

Step 3: Calculate the dilution factor.

$DF = V_{cf} / V_{ci}$

Where:

V_{ci} = volume of air in canister prior to pressurization, L
PI = pressure reading of canister prior to pressurization (psia)
V_{cf} = volume of air in canister after pressurization, L
PF = pressure reading of canister after pressurization (psia)
DF = dilution factor
14.696 = atmospheric pressure (psia)

ALPHA ANALYTICAL LABORATORIES, INC.

Alpha WORK GROUP REPORT (wk02)

Jan 08 2018, 11:30 am

Work Group: WG1078229   for Department: 3 GC/MS

Created: 02-JAN-18   Due: Operator: MB

```
Sample                       Client ID            C Product              Matrix     Stat UA HOLD DUE  PR Location

L1747629-01                  IA-1                 S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-02                  IA-1 DUPLICATE       S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-03                  OA-1                 S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-04                  IA-2                 S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-07                  IA-3                 S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747629-09                  IA-4                 S TO15-SIM             AIR        DONE U  0125 0103 S0 Can-2.7
L1747754-01                  IA-A_122717          S TO15-SIM             AIR        DONE U  0126 0104 S0 Can-6
L1747754-02                  IA-B_122717          S TO15-SIM             AIR        DONE U  0126 0104 S0 Can-6
WG1078229-1                  MS BFB Tune Standard S TO15-SIM             AIR        DONE U
WG1078229-2                  Continuing Calibrati S TO15-SIM             AIR        DONE U
WG1078229-3                  Laboratory Control S S TO15-SIM             AIR        DONE U
WG1078229-4                  Laboratory Method Bl S TO15-SIM             AIR        DONE U
WG1078229-5                  Duplicate Sample     S TO15-SIM             AIR        DONE U

Comments:

WG1078229-5          L1747629-01
```

Alpha Analytical Air Lab
Instrument Run Log

Instrument ID: Airlab15

Internal Standard/Surrogate IDs: SS17-024 / SS17-031

Date: 12/23/17

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: RY

Sequence File Name: 171223.S

SIM ICAL#

Full Scan ICAL#

NJ ICAL#

APH ICAL#

AS Position #	Sample ID	Acquisition Method	Data File ID	Standard ID or Batch ID #, ICAL Ref #	Comment (s)	Product/ sublist	Leak Check Pass ? Y/N
1	WG1075924-1	TO15_SFS.qgm	R154812.qgd	WG1075924	TUNE		NA
5	ITO15-SIMSTD0.02	TO15_SFS.qgm	R154813.qgd	WG1075924	SIM ONLY	SS17-027D	NA
5	ITO15-SIMSTD0.04	TO15_SFS.qgm	R154814.qgd	WG1075924	SIM ONLY	SS17-027D	NA
5	ITO15-SIMSTD0.1	TO15_SFS.qgm	R154815.qgd	WG1075924	SIM ONLY	SS17-027D	NA
6	ITO15-SIMSTD0.2	TO15_SFS.qgm	R154816.qgd	WG1075924		SS17-027C	NA
6	ITO15-SIMSTD0.5	TO15_SFS.qgm	R154817.qgd	WG1075924		SS17-027C	NA
7	ITO15-SIMSTD1.0	TO15_SFS.qgm	R154818.qgd	WG1075924		SS17-027B1	NA
7	ITO15-SIMSTD5.0	TO15_SFS.qgm	R154819.qgd	WG1075924		SS17-027B1	NA
7	ITO15-SIMSTD010	TO15_SFS.qgm	R154820.qgd	WG1075924		SS17-027B1	NA
8	ITO15-SIMSTD020	TO15_SFS.qgm	R154821.qgd	WG1075924		SS17-027A	NA
8	ITO15-SIMSTD050	TO15_SFS.qgm	R154822.qgd	WG1075924		SS17-027A	NA
8	ITO15-LLSTD100	TO15_SFS.qgm	R154823.qgd	WG1075924	NOT USED FOR SIM	SS27-028A	NA
1	BLANK	TO15_SFS.qgm	R154824.qgd	WG1075924			NA
1	BLANK	TO15_SFS.qgm	R154825.qgd	WG1075924			NA
2	CTO15-LLSTD010	TO15_SFS.qgm	R154826.qgd	WG1075924	FULL SCAN ICV	SS17-033C	NA
2	CTO15-SIMSTD5.0	TO15_SFS.qgm	R154827.qgd	WG1075925	SIM ICV	SS17-033C	NA

Alpha Analytical Air Lab
Instrument Run Log

Date(s) of Initial Calibration: Refer to Initial Calibration Summary Form 6

Date Acquired: see Instrument Performance Check Summary and/or quantitation rep

Sample ID information: L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

Dilution Factor: See Form 1 report, or divide nominal volume by actual volume analyzed

Alpha Analytical Air Lab
Instrument Run Log

Instrument ID: Airlab15

Internal Standard/Surrogate IDs: SS17-024 / SS17-031

Date: 01/02/18

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: MB

Sequence File Name: 180102.S

SIM ICAL# 14300 Full Scan ICAL# 14299 NJ ICAL# APH ICAL#

AS Position #	Sample ID	Acquisition Method	Data File ID	Standard ID or Batch ID #, ICAL Ref #	Comment (s)	Product/ sublist	Leak Check Pass ? Y/N
1	WG1078148-1,3,250,250	TO15_SFS.qgm	R154987.qgd	WG1078148,ICAL14299	TUNE		NA
2	WG1078148-2,3,250,250	TO15_SFS.qgm	R154988.qgd	WG1078148,ICAL14299	CC	SS17-027E	NA
3	WG1078148-3,3,250,250	TO15_SFS.qgm	R154989.qgd	WG1078148,ICAL14299	LL LCS	SS17-033A	NA
3	SIM LCS,3,250,250	TO15_SFS.qgm	R154990.qgd	WG1078148,ICAL14299	SIM LCS	SS17-033A	NA
1	WG1078148-4,3,250,250	TO15_SFS.qgm	R154991.qgd	WG1078148,ICAL14299	BLANK		NA
1	WG1078148-4,3,250,250	TO15_SFS.qgm	R154992.qgd	WG1078148,ICAL14299	BLANK		NA
2	L1747629-03,3,250,250	TO15_SFS.qgm	R154993.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
3	L1747629-01,3,250,250	TO15_SFS.qgm	R154994.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
3	WG1078148-5,3,250,250	TO15_SFS.qgm	R154995.qgd	WG1078148,ICAL14299	TO15-LL / SIM DUP	NY/ 7 SIM	Y
4	L1747629-02,3,250,250	TO15_SFS.qgm	R154996.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
5	L1747629-07,3,250,250	TO15_SFS.qgm	R154997.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
6	L1747629-09,3,250,250	TO15_SFS.qgm	R154998.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
7	L1747754-01,3,250,250	TO15_SFS.qgm	R154999.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
8	L1747754-02,3,250,250	TO15_SFS.qgm	R155000.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
9	L1747629-04,3,250,250	TO15_SFS.qgm	R155001.qgd	WG1078148,ICAL14299		NY/ 7 SIM	Y
10	L1747547-01,3,250,250	TO15_SFS.qgm	R155002.qgd	WG1078148,ICAL14299		NY	Y
11	L1747533-06,3,250,250	TO15_SFS.qgm	R155003.qgd	WG1077988,ICAL14299		9-CL	Y
11	WG1077988-5,3,250,250	TO15_SFS.qgm	R155004.qgd	WG1077988,ICAL14299	MCP-TO15 DUP	9-CL	Y
12	L1747533-07D,3,50,250	TO15_SFS.qgm	R155005.qgd	WG1077988,ICAL14299	OVERDILUTED	9-CL	Y
13	L1747533-08D,3,200,250	TO15_SFS.qgm	R155006.qgd	WG1077988,ICAL14299		9-CL	Y

Alpha Analytical Air Lab
Instrument Run Log

14	L1747533-05D,3,25,250	TO15_SFS.qgm	R155007.qgd	WG1077988,ICAL14299	PCE ONLY	9-CL	Y
15	L1747487-01,3,250,250	TO15_SFS.qgm	R155008.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
16	L1747487-02,3,250,250	TO15_SFS.qgm	R155009.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
1	L1747487-03,3,250,250	TO15_SFS.qgm	R155010.qgd	WG1078148,ICAL14299		STD+ NAPH	Y
12	L1747533-07D,3,125,250	TO15_SFS.qgm	R155011.qgd	WG1077988,ICAL14299		9-CL	Y
14	L1747533-05D,3,50,250	TO15_SFS.qgm	R155012.qgd	WG1077988,ICAL14299		9-CL	Y

Date(s) of Initial Calibration: Refer to Initial Calibration Summary Form 6

Date Acquired: see Instrument Performance Check Summary and/or quantitation rep

Sample ID information: L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

Dilution Factor: See Form 1 report, or divide nominal volume by actual volume analyzed

ATTACHMENT 6

HVAC INSPECTION FORMS
AND
SCREENSHOTS OF HVAC SYSTEM GRAPHIC PANEL OUTPUTS

Elmira City School District AHU #2 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dann
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 3 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 4 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

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Elmira City School District AHU # 5 2/10/16 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 6 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU# 7 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 8 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts Adjust Motor
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

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Elmira City School District AHU #1 cafe 2/10/11 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	Direct Drive
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	✓	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	✓	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	✓	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dush
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	✓	

Elmira City School District AHU #9 2/9/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Bolts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU #10 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 11 2/10/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	N/A	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 12 2/13/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU #13 2/13/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dinh
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU # 14 2/13/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	N/A	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District AHU#15 2/13/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

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Elmira City School District AHU # 16 2/13/17 Elmira High School

HVAC Unit Inspection Form

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.	X	
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	New Belts (Adjusted)
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	NA	
13	Oil fan bearings if applicable.	X	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with most recent inspection)	X	See Mike Dunn
16	Inspect pre-filters and main filters for maintainance (documentation will be provided for the changing of pre-filter three (3) times per year and main filter a minimun of once per calendar year.)	X	
17	Clean duct if necessary.	X	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

Elmira City School District

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HVAC Unit Inspection Form

AHU Unit # 1

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.	X	
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.	–	
13	Oil fan bearings if applicable.	–	
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).	X	
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	REPLACED ALL FILTERS
17	Clean duct if necessary.	–	
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.	X	

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HVAC Unit Inspection Form

AHU Unit # 2

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced Belts
7	Check fan and motor bearings for radial and axial wear.		
8	Clean up spilled or excess grease.		
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.		
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced all filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	Changed heat card
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 3

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	changed belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.		
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced all filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 4

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.		
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	replaced return fan bearings
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 5

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.		
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).		
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 6

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		no flow Unit running forced to Day
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 7

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	replaced mix damper card
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 8

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 9

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replace belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replace filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 10

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).	X	replaced filters
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).		
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	replaced heat card
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 11

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replace belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replace filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	replaced heat wheel pump-seals
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 12

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		tore duct apart mix damper would not open rebuilt
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	replaced belts
6	Check belts for proper tensions, alignment, and excessive wear.	X	
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		Change card hot mix damper
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 13

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replace filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 14

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		replaced vent card
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 15

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

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HVAC Unit Inspection Form

AHU Unit # 16

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced filters
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters replaced heat card
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		

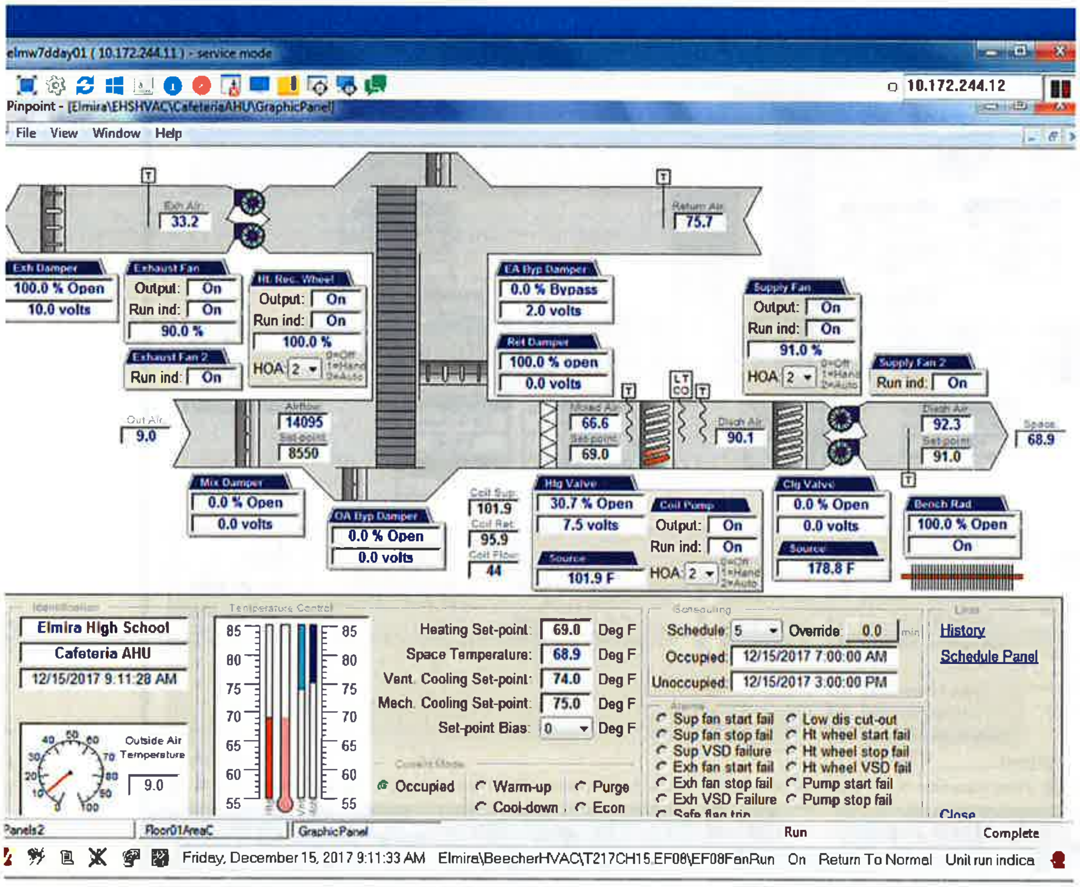
Elmira City School District

Updated 12/14/2017

HVAC Unit Inspection Form

AHU Unit # CAFE

Item		Complete (Mark with "X")	Comments
1	Follow Lockout/Tagout and all electrical safety procedures.		
2	Review Stop Start Status (SSS) reporting in control software. Note any faulty components or non-normal functioning. Notify maintenance supervisor of necessary corrective measures.		
3	Check unit for unusual noise or vibration.	X	
4	Check all motors, guards, pulleys, thrust collars, fan & bearings.	X	
5	Clean Motor, fan blade and guards as needed.	X	
6	Check belts for proper tensions, alignment, and excessive wear.	X	replaced belts
7	Check fan and motor bearings for radial and axial wear.	X	
8	Clean up spilled or excess grease.	X	
9	Ensure unit is running (i.e. switches, computer).	X	
10	Grease fan bearings if applicable.	X	
11	Grease motor if applicable. If the motor bearings or other parts rely on grease which can be serviced, then clean off the grease and replace, or inject grease through grease fittings as per manufacturers guidance.	X	
12	If the motor, its bearings or other parts rely on oil which can be applied during service then apply oil or add oil to the oil reservoir until the fill line is reached, as per manufacturers guidance.		
13	Oil fan bearings if applicable.		
14	Inspect coil for leaks and cleanliness. Clean as necessary.	X	
15	Perform and review airflow of HVAC system to ensure proper CFM (provide annual snapshot of AHU with the most recent inspection).		
16	Inspect pre-filters and main filters for maintainance (documentation will be proovided for the changing of pre-filter three (3) times per year and main filter a minimum of once per calendar year).	X	replaced filters
17	Clean duct if necessary.		
18	Check all controls for proper operation (i.e. air, steam, water).	X	
19	Ensure unit is tagged.		



elmw7dday01 (10.172.244.11) - service mode

10.172.244.12

Pinpoint - [Elmira\EHSHVAC\CafeteriaAHU\GraphicPanel]

Exh Air: 33.2

Return Air: 75.7

Exh Damper
100.0 % Open
10.0 volts

Exhaust Fan
Output: On
Run ind: On
90.0 %

Exhaust Fan 2
Run ind: On

Ht. Rec. Wheel
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

EA Byp Damper
0.0 % Bypass
2.0 volts

Ret Damper
100.0 % open
0.0 volts

Supply Fan
Output: On
Run ind: On
91.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Supply Fan 2
Run ind: On

Out Air: 9.0

Airflow: 14095
Set-point: 8550

Mixed Air: 66.6
Set-point: 69.0

Disch Air: 90.1

Disch Air: 92.3
Set-point: 91.0

Space: 68.9

Mix Damper
0.0 % Open
0.0 volts

OA Byp Damper
0.0 % Open
0.0 volts

Coil Sup: 101.9
Coil Ret: 95.9
Coil Flow: 44

Htg Valve
30.7 % Open
7.5 volts

Source
101.9 F

Coil Pump
Output: On
Run ind: On
HOA: 2 (0=Off 1=Hand 2=Auto)

Clg Valve
0.0 % Open
0.0 volts

Source
178.8 F

Beech Rad
100.0 % Open
On

Identification
Elmira High School
Cafeteria AHU
12/15/2017 9:11:28 AM

Outside Air Temperature: 9.0

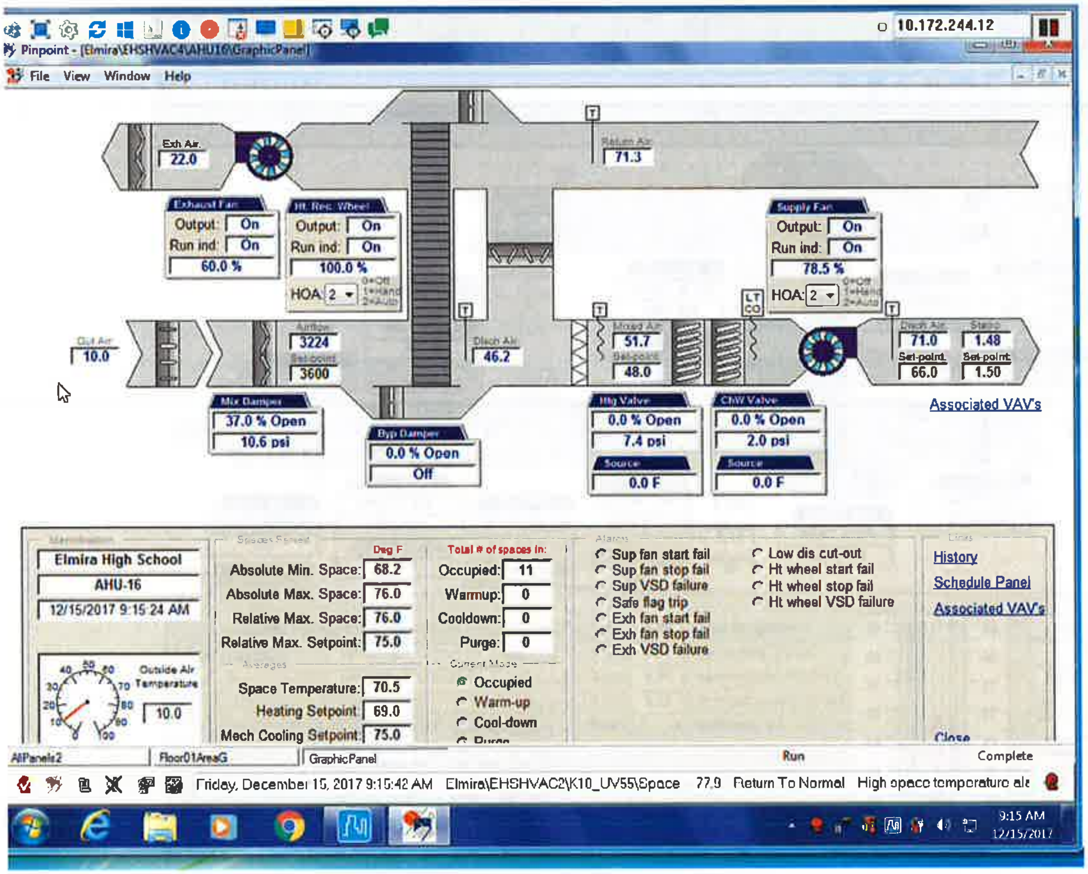
Temperature Control
Heating Set-point: 69.0 Deg F
Space Temperature: 68.9 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Mech. Cooling Set-point: 75.0 Deg F
Set-point Bias: 0 Deg F

Current Mode
● Occupied ○ Warm-up ○ Purge
○ Cool-down ○ Econ

Scheduling
Schedule: 5 Override: 0.0 min
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:00:00 PM

Alarms
○ Sup fan start fail ○ Low dis cut-out
○ Sup fan stop fail ○ Ht wheel start fail
○ Sup VSD failure ○ Ht wheel stop fail
○ Exh fan start fail ○ Ht wheel VSD fail
○ Exh fan stop fail ○ Pump start fail
○ Exh VSD Failure ○ Pump stop fail
○ Safe flag trip

Friday, December 15, 2017 9:11:33 AM Elmira\BeecherHVAC\T217CH15.EF08\EF08FanRun On Return To Normal Unit run indica



Exh Air: 22.0

Return Air: 71.3

Exhaust Fan
Output: On
Run ind: On
60.0 %

Ht Rec Wheel
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Supply Fan
Output: On
Run ind: On
78.5 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 10.0

Airflow: 3224
Set-point: 3600

Disch Air: 46.2

Mixed Air: 51.7
Set-point: 48.0

Disch Air: 71.0
Set-point: 66.0

Static: 1.48
Set-point: 1.50

Mix Damper
37.0 % Open
10.6 psi

Byp Damper
0.0 % Open
Off

Htg Valve
0.0 % Open
7.4 psi
Source: 0.0 F

ChW Valve
0.0 % Open
2.0 psi
Source: 0.0 F

Identification
Elmira High School
AHU-16
12/15/2017 9:15:24 AM

Outside Air Temperature: 10.0

Spaces Served

	Deg F
Absolute Min. Space:	68.2
Absolute Max. Space:	76.0
Relative Max. Space:	76.0
Relative Max. Setpoint:	75.0

	Total # of spaces in:
Occupied:	11
Warmup:	0
Cooldown:	0
Purge:	0

Averages
Space Temperature: 70.5
Heating Setpoint: 69.0
Mech Cooling Setpoint: 75.0

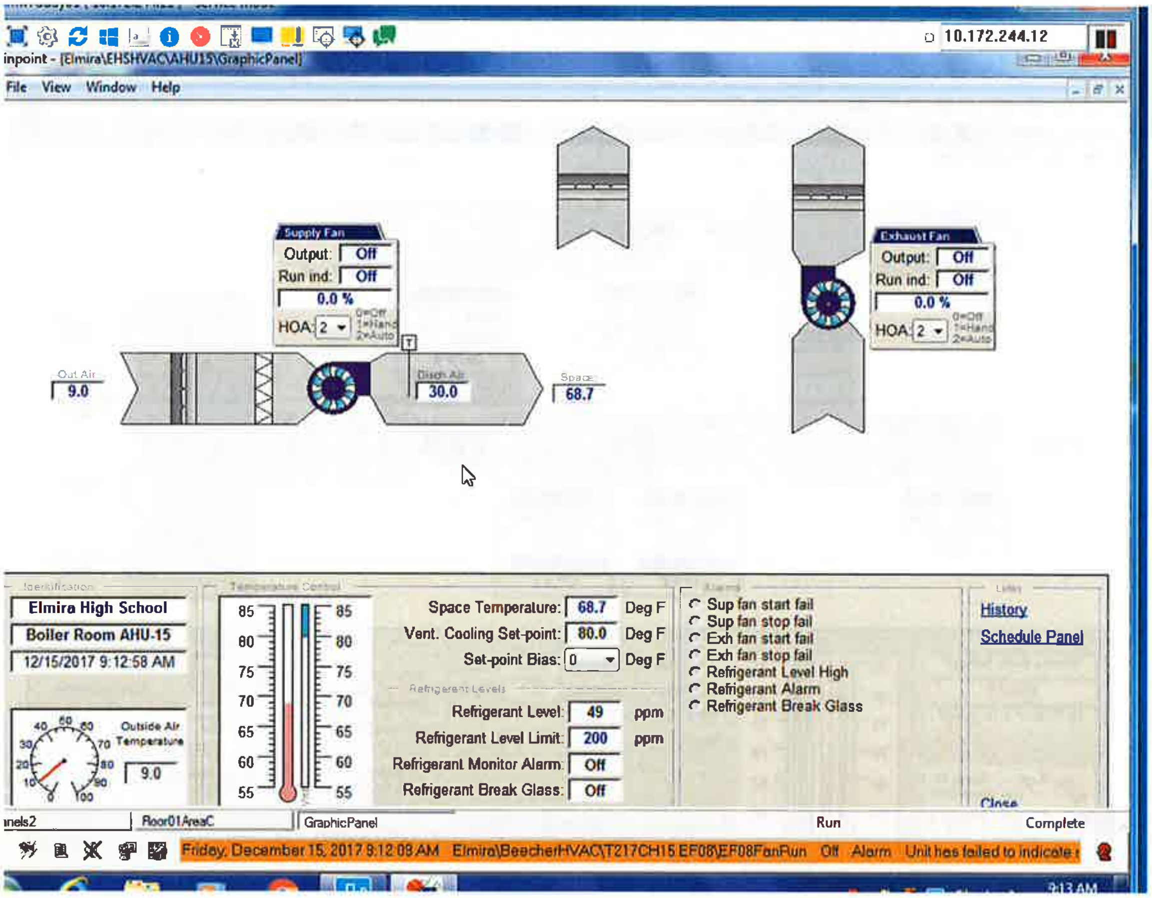
Current Mode
● Occupied
○ Warm-up
○ Cool-down
○ Purge

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Safe flag trip
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD failure

AllPanels2 | Floor01AreaG | GraphicPanel | Run | Complete

Friday, December 15, 2017 9:15:42 AM Elmira\EHSHVAC2\K10_UV55\Space 77.9 Return To Normal High space temperature ale

9:15 AM
12/15/2017



inpoint - [Elmira\EHSHVAC\AHU15\GraphicPanel]

Supply Fan

Output: Off

Run ind: Off

0.0 %

HOA: 2

Out Air: 9.0

Disch Air: 30.0

Space: 68.7

Exhaust Fan

Output: Off

Run ind: Off

0.0 %

HOA: 2

Elmira High School

Boiler Room AHU-15

12/15/2017 9:12:58 AM

Outside Air Temperature: 9.0

Space Temperature: 68.7 Deg F

Vent. Cooling Set-point: 80.0 Deg F

Set-point Bias: 0 Deg F

Refrigerant Level: 49 ppm

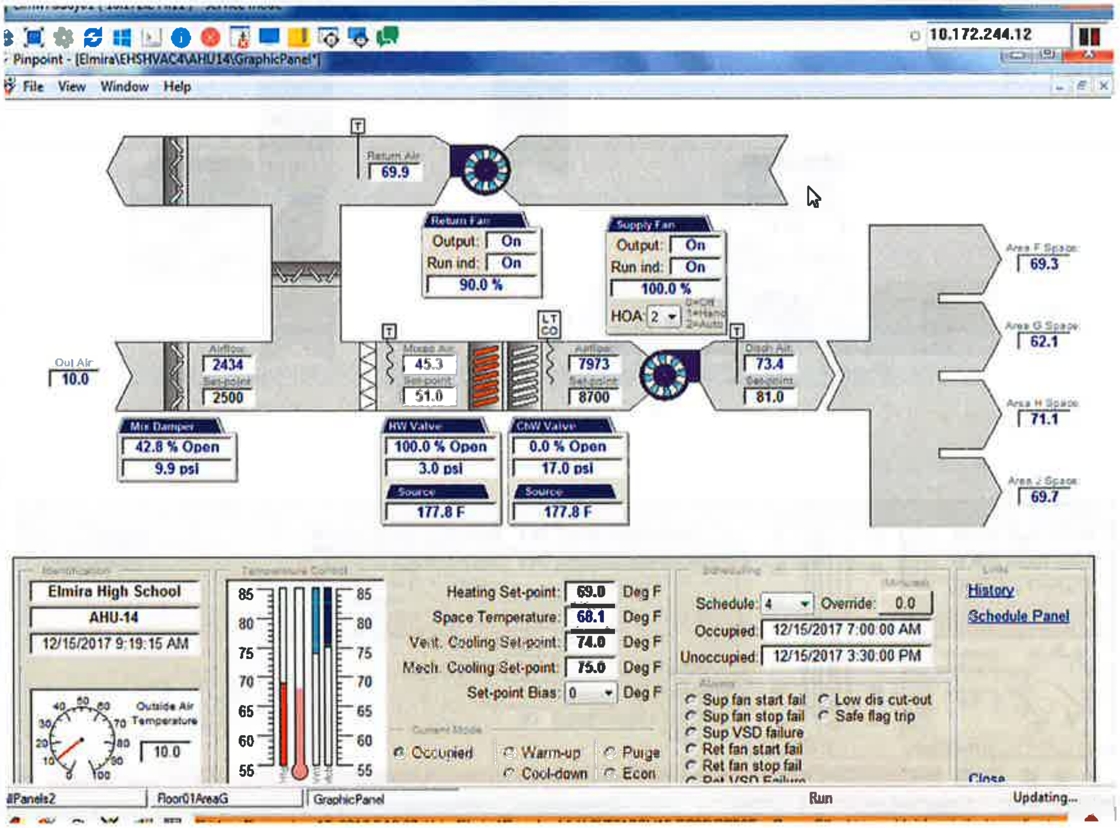
Refrigerant Level Limit: 200 ppm

Refrigerant Monitor Alarm: Off

Refrigerant Break Glass: Off

- ○ Sup fan start fail
- ○ Sup fan stop fail
- ○ Exh fan start fail
- ○ Exh fan stop fail
- ○ Refrigerant Level High
- ○ Refrigerant Alarm
- ○ Refrigerant Break Glass

Friday, December 15, 2017 9:12:09 AM Elmira\BeecherHVAC\T217CH15.EF08\EF08FanRun Off Alarm Unit has failed to indicate



Return Air: 69.9

Return Fan
Output: On
Run ind: On
90.0 %

Supply Fan
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 10.0

Airflow: 2434
Set-point: 2500

Mixed Air: 45.3
Set-point: 51.0

Airflow: 7973
Set-point: 8700

Disch Air: 73.4
Set-point: 81.0

Area F Space: 69.3
Area G Space: 62.1
Area H Space: 71.1
Area J Space: 69.7

Mix Damper
42.8 % Open
9.9 psi

HW Valve
100.0 % Open
3.0 psi
Source
177.8 F

ChW Valve
0.0 % Open
17.0 psi
Source
177.8 F

Elmira High School
AHU-14
12/15/2017 9:19:15 AM

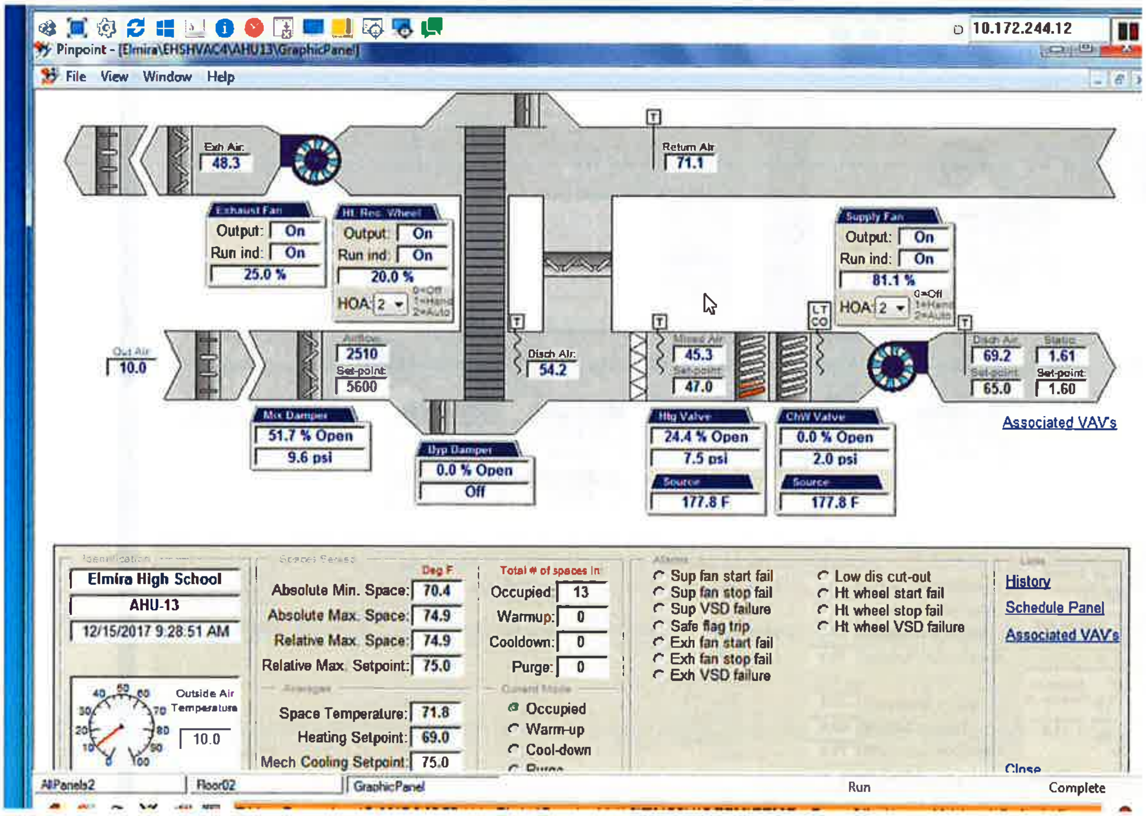
Outside Air Temperature: 10.0

Heating Set-point: 69.0 Deg F
Space Temperature: 68.1 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Mech. Cooling Set-point: 75.0 Deg F
Set-point Bias: 0 Deg F

● Occupied ○ Warm-up ○ Purge
○ Cool-down ○ Econ

Schedule: 4 Override (Minutes): 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:30:00 PM

○ Sup fan start fail ○ Low dis cut-out
○ Sup fan stop fail ○ Safe flag trip
○ Sup VSD failure
○ Ret fan start fail
○ Ret fan stop fail



Pinpoint - [Elmira\EHSHVAC4\AHU13\GraphicPanel]

Exh Air: 48.3

Return Air: 71.1

Exhaust Fan
Output: On
Run ind: On
25.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
20.0 %
HOA: 2

Supply Fan
Output: On
Run ind: On
81.1 %
HOA: 2

Out Air: 10.0

Airflow: 2510
Set-point: 5600

Disch Air: 54.2

Mixed Air: 45.3
Set-point: 47.0

Disch Air: 69.2
Set-point: 65.0

Static: 1.61
Set-point: 1.60

Mix Damper
51.7 % Open
9.6 psi

Byp Damper
0.0 % Open
Off

Htg Valve
24.4 % Open
7.5 psi
Source: 177.8 F

ChW Valve
0.0 % Open
2.0 psi
Source: 177.8 F

Identification
Elmira High School
AHU-13
12/15/2017 9:28:51 AM

Outside Air Temperature: 10.0

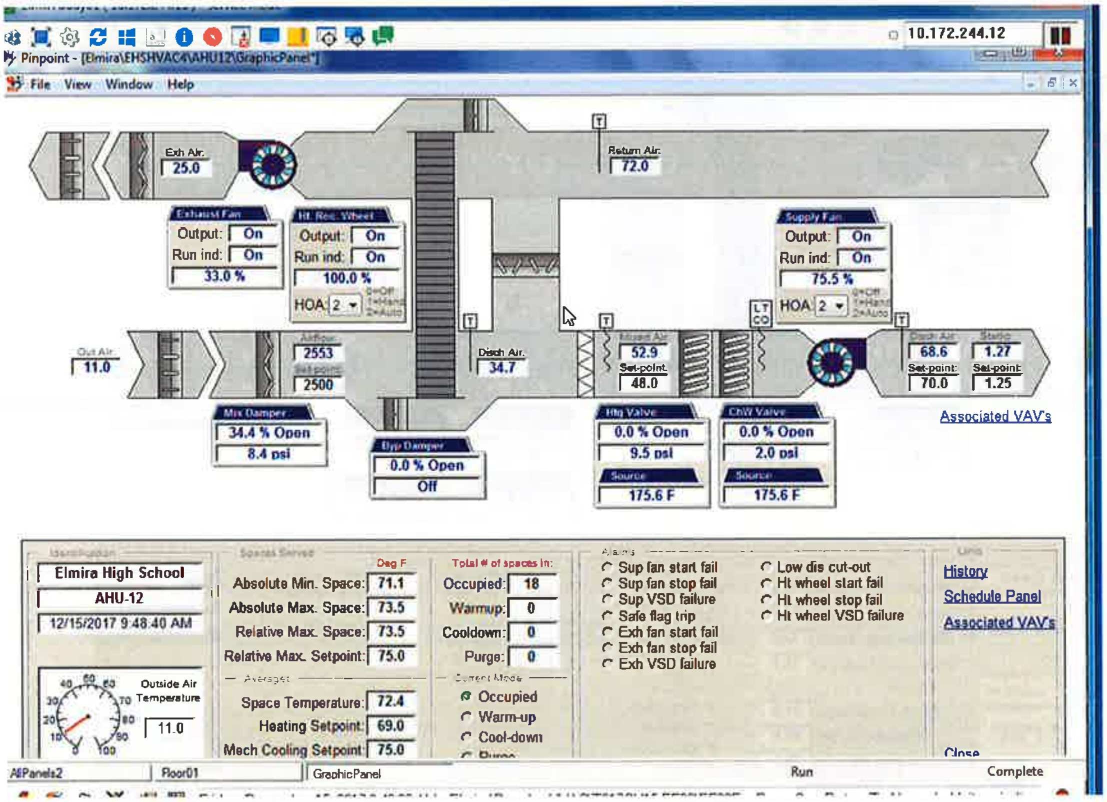
Spaces Sensed (Deg F)
Absolute Min. Space: 70.4
Absolute Max. Space: 74.9
Relative Max. Space: 74.9
Relative Max. Setpoint: 75.0

Averages
Space Temperature: 71.8
Heating Setpoint: 69.0
Mech Cooling Setpoint: 75.0

Total # of spaces in:
Occupied: 13
Warmup: 0
Cooldown: 0
Purge: 0

Current Mode
● Occupied
○ Warm-up
○ Cool-down
○ Purge

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Safe flag trip
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD failure



Exh Air: 25.0

Return Air: 72.0

Exhaust Fan
Output: On
Run ind: On
33.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Supply Fan
Output: On
Run ind: On
75.5 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 11.0

Airflow: 2553
Set-point: 2500

Disch Air: 34.7

Mixed Air: 52.9
Set-point: 48.0

Disch Air: 68.6
Set-point: 70.0

Static: 1.27
Set-point: 1.25

Mix Damper
34.4 % Open
8.4 psi

Byp Damper
0.0 % Open
Off

Htg Valve
0.0 % Open
9.5 psi
Source: 175.6 F

ChW Valve
0.0 % Open
2.0 psi
Source: 175.6 F

Identification
Elmira High School
AHU-12
12/15/2017 9:48:40 AM

Outside Air Temperature: 11.0

Spaces Served (Deg F)
Absolute Min. Space: 71.1
Absolute Max. Space: 73.5
Relative Max. Space: 73.5
Relative Max. Setpoint: 75.0

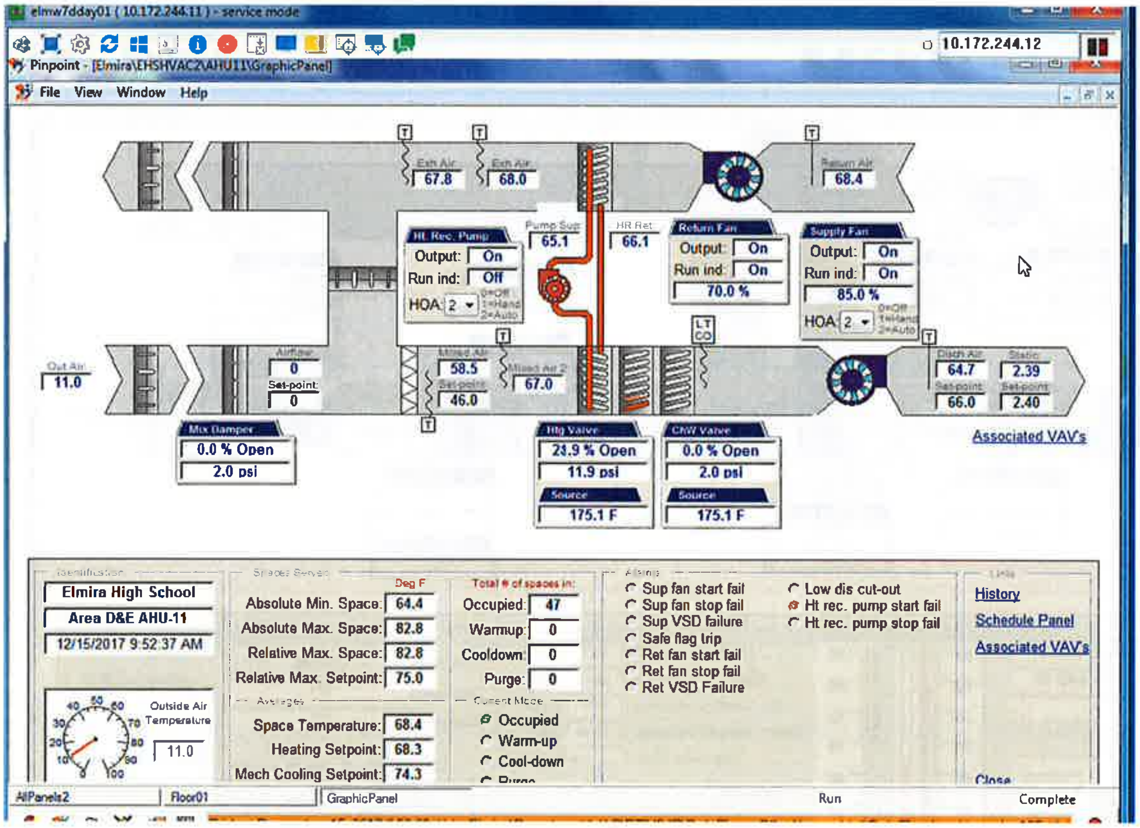
Averages
Space Temperature: 72.4
Heating Setpoint: 69.0
Mech Cooling Setpoint: 75.0

Total # of spaces in:
Occupied: 18
Warmup: 0
Cooldown: 0
Purge: 0

Current Mode
● Occupied
○ Warm-up
○ Cool-down
○ Purge

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Safe flag trip
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD failure

Links
History
Schedule Panel
Associated VAV's
Close



elmw7dday01 (10.172.244.11) - service mode

10.172.244.12

Pinpoint - [Elmira\EHSHVAC2\AHU11\GraphicPanel]

Exh Air: 67.8

Exh Air: 68.0

Return Air: 68.4

Pump Sup: 65.1

HR Ret: 66.1

Ht. Rec. Pump
Output: On
Run ind: Off
HOA: 2

Return Fan
Output: On
Run ind: On
70.0 %

Supply Fan
Output: On
Run ind: On
85.0 %
HOA: 2

Out Air: 11.0

Airflow: 0
Set-point: 0

Mixed Air: 58.5
Set-point: 46.0

Mixed Air 2: 67.0

Disch Air: 64.7
Set-point: 66.0

Static: 2.39
Set-point: 2.40

Mix Damper
0.0 % Open
2.0 psi

Htg Valve
23.9 % Open
11.9 psi
Source
175.1 F

ChW Valve
0.0 % Open
2.0 psi
Source
175.1 F

Associated VAV's

Identification
Elmira High School
Area D&E AHU-11
12/15/2017 9:52:37 AM

Outside Air Temperature: 11.0

Spaces Served (Deg F)
Absolute Min. Space: 64.4
Absolute Max. Space: 82.8
Relative Max. Space: 82.8
Relative Max. Setpoint: 75.0

Total # of spaces in:
Occupied: 47
Warmup: 0
Cooldown: 0
Purge: 0

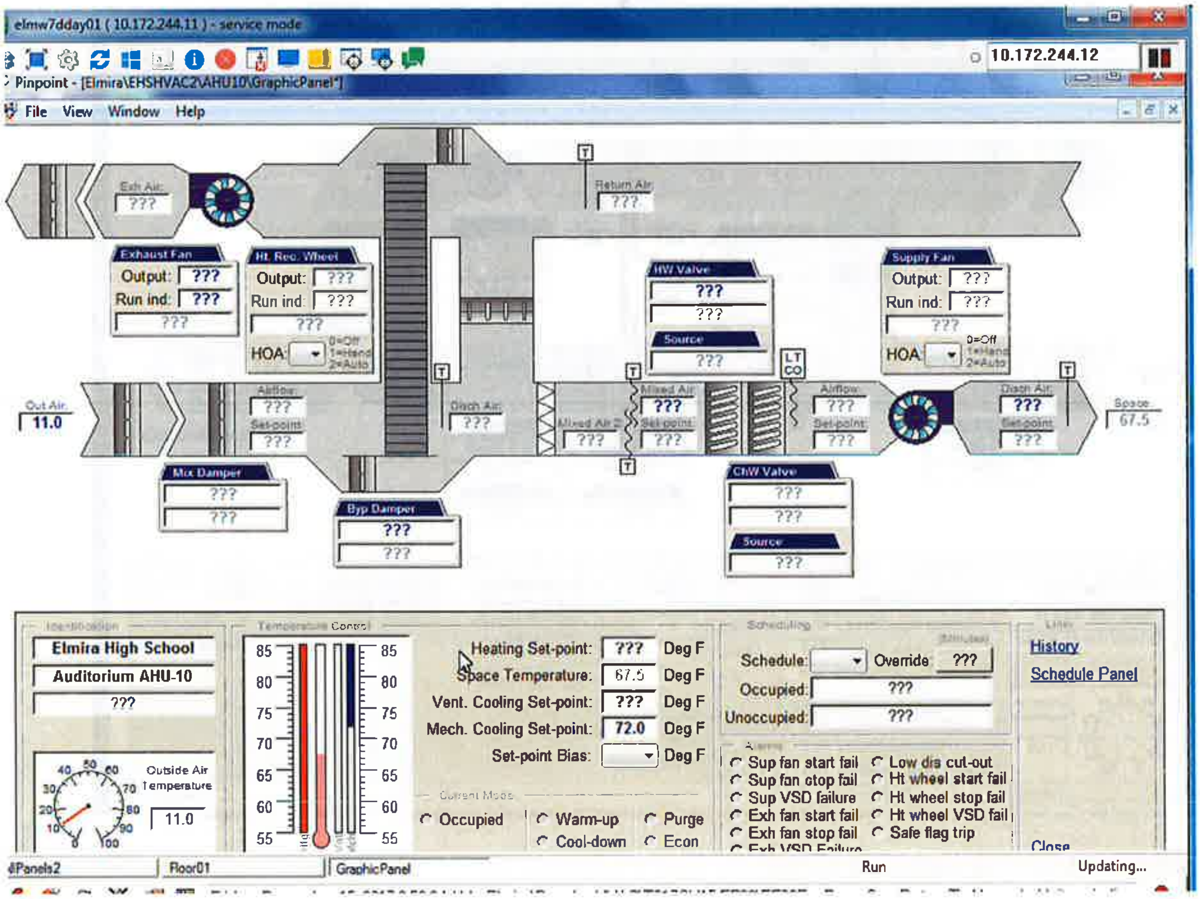
Averages
Space Temperature: 68.4
Heating Setpoint: 68.3
Mech Cooling Setpoint: 74.3

Current Mode
● Occupied
○ Warm-up
○ Cool-down
○ Purge

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Safe flag trip
○ Ret fan start fail
○ Ret fan stop fail
○ Ret VSD Failure
○ Low dis cut-out
● Ht rec. pump start fail
○ Ht rec. pump stop fail

Links
History
Schedule Panel
Associated VAV's
Close

AllPanels2 | Floor01 | GraphicPanel | Run | Complete



elmw7dday01 (10.172.244.11) - service mode

10.172.244.12

Pinpoint - [Elmira\EHSHVAC2\AHU10\GraphicPanel*]

Exh Air: ???

Return Air: ???

Exhaust Fan
Output: ???
Run ind: ???
???

Ht. Rec. Wheel
Output: ???
Run ind: ???
???
HOA: 0=Off 1=Hand 2=Auto

HW Valve
???
???
Source
???

Supply Fan
Output: ???
Run ind: ???
???
HOA: 0=Off 1=Hand 2=Auto

Out Air: 11.0

Airflow: ???
Set-point: ???

Disch Air: ???

Mixed Air 2: ???

Mixed Air: ???
Set-point: ???

Airflow: ???
Set-point: ???

Disch Air: ???
Set-point: ???

Space: 67.5

Mix Damper
???
???

Byp Damper
???
???

ChW Valve
???
???
Source
???

Identification
Elmira High School
Auditorium AHU-10
???

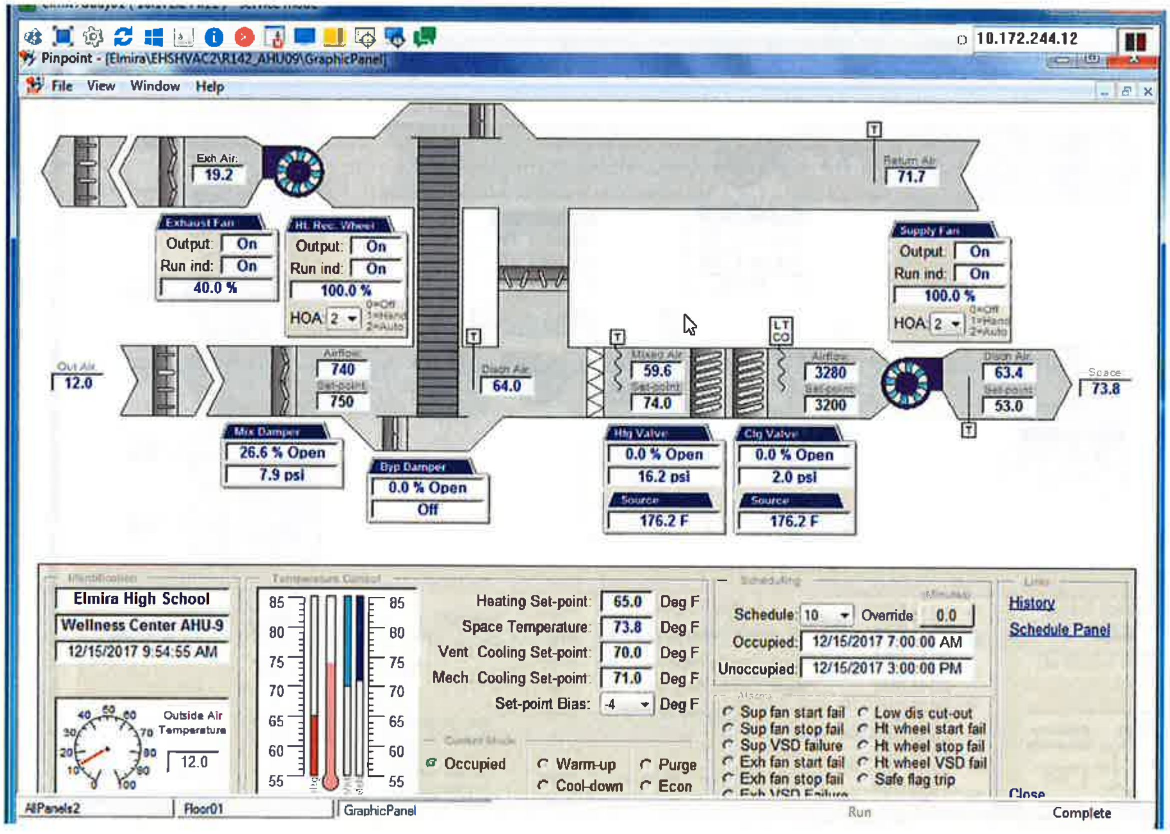
Outside Air Temperature: 11.0

Heating Set-point: ??? Deg F
Space Temperature: 67.5 Deg F
Vent. Cooling Set-point: ??? Deg F
Mech. Cooling Set-point: 72.0 Deg F
Set-point Bias: Deg F

Current Mode
○ Occupied
○ Warm-up
○ Cool-down
○ Purge
○ Econ

Scheduling
Schedule:
Override: ???
Occupied: ???
Unoccupied: ???

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD Failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD fail
○ Safe flag trip



Pinpoint - [Elmira\EHSHVAC2\R142_AHU09\GraphicPanel]

Exh Air: 19.2

Return Air 71.7

Exhaust Fan
Output: On
Run ind: On
40.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
100.0 %
HOA: 2

Supply Fan
Output: On
Run ind: On
100.0 %
HOA: 2

Out Air 12.0

Airflow: 740
Set-point 750

Disch Air 64.0

Mixed Air 59.6
Set-point 74.0

Airflow 3280
Set-point 3200

Disch Air 63.4
Set-point 53.0

Space 73.8

Mix Damper
26.6 % Open
7.9 psi

Byp Damper
0.0 % Open
Off

Htg Valve
0.0 % Open
16.2 psi
Source
176.2 F

Clg Valve
0.0 % Open
2.0 psi
Source
176.2 F

Identification
Elmira High School
Wellness Center AHU-9
12/15/2017 9:54:55 AM

Outside Air Temperature 12.0

Temperature Control
Heating Set-point: 65.0 Deg F
Space Temperature: 73.8 Deg F
Vent Cooling Set-point: 70.0 Deg F
Mech Cooling Set-point: 71.0 Deg F
Set-point Bias: -4 Deg F

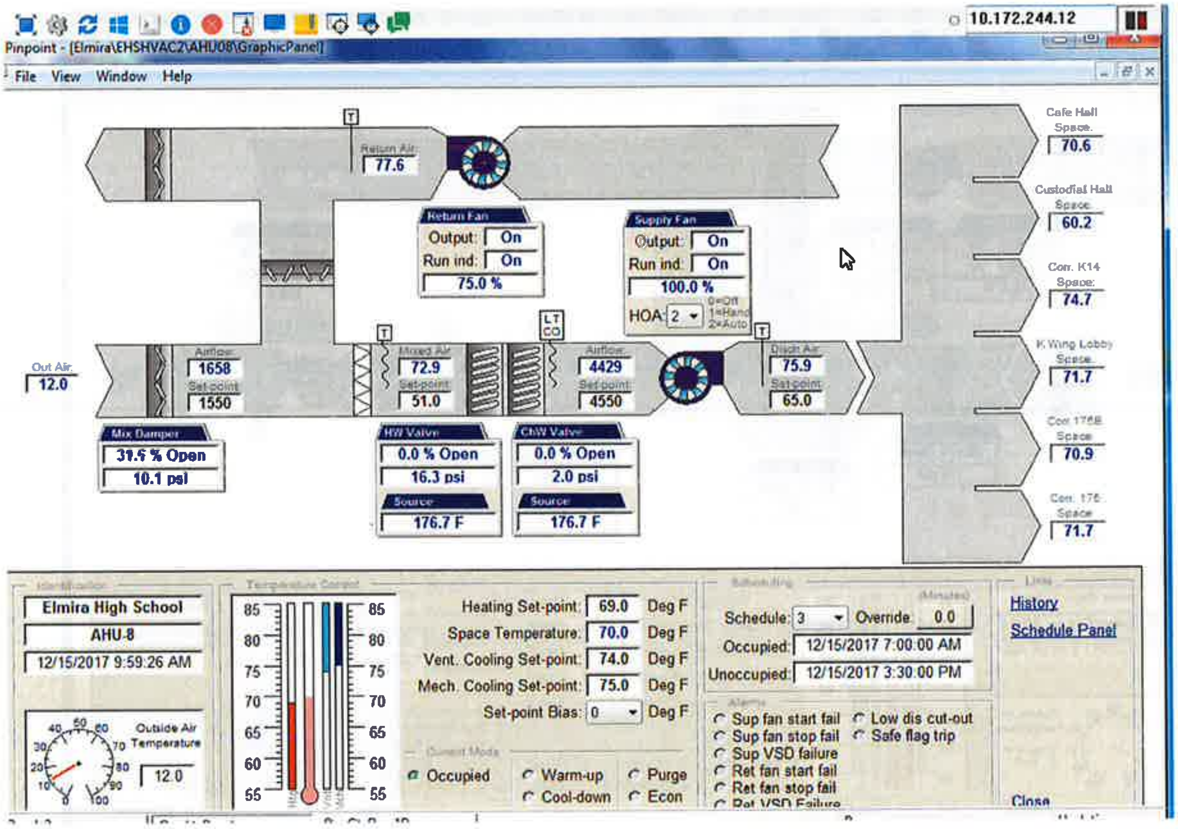
Current Mode
● Occupied ○ Warm-up ○ Cool-down ○ Purge ○ Econ

Scheduling
Schedule: 10 Override (Minutes) 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:00:00 PM

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD Failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD fail
○ Safe flag trip

Links
History
Schedule Panel
Close

AllPanels2 | Floor01 | GraphicPanel | Run | Complete



Return Air: 77.6

Return Fan
Output: On
Run ind: On
75.0 %

Supply Fan
Output: On
Run ind: On
100.0 %
HOA: 2

Out Air: 12.0

Airflow: 1658
Set-point: 1550

Mixed Air: 72.9
Set-point: 51.0

Airflow: 4429
Set-point: 4550

Disch Air: 75.9
Set-point: 65.0

Mix Damper: 31.5 % Open, 10.1 psi

HW Valve: 0.0 % Open, 16.3 psi, Source 176.7 F

ChW Valve: 0.0 % Open, 2.0 psi, Source 176.7 F

Cafe Hall Space: 70.6
Custodial Hall Space: 60.2
Corr. K14 Space: 74.7
K Wing Lobby Space: 71.7
Corr 176B Space: 70.9
Corr. 176 Space: 71.7

Elmira High School
AHU-8
12/15/2017 9:59:26 AM

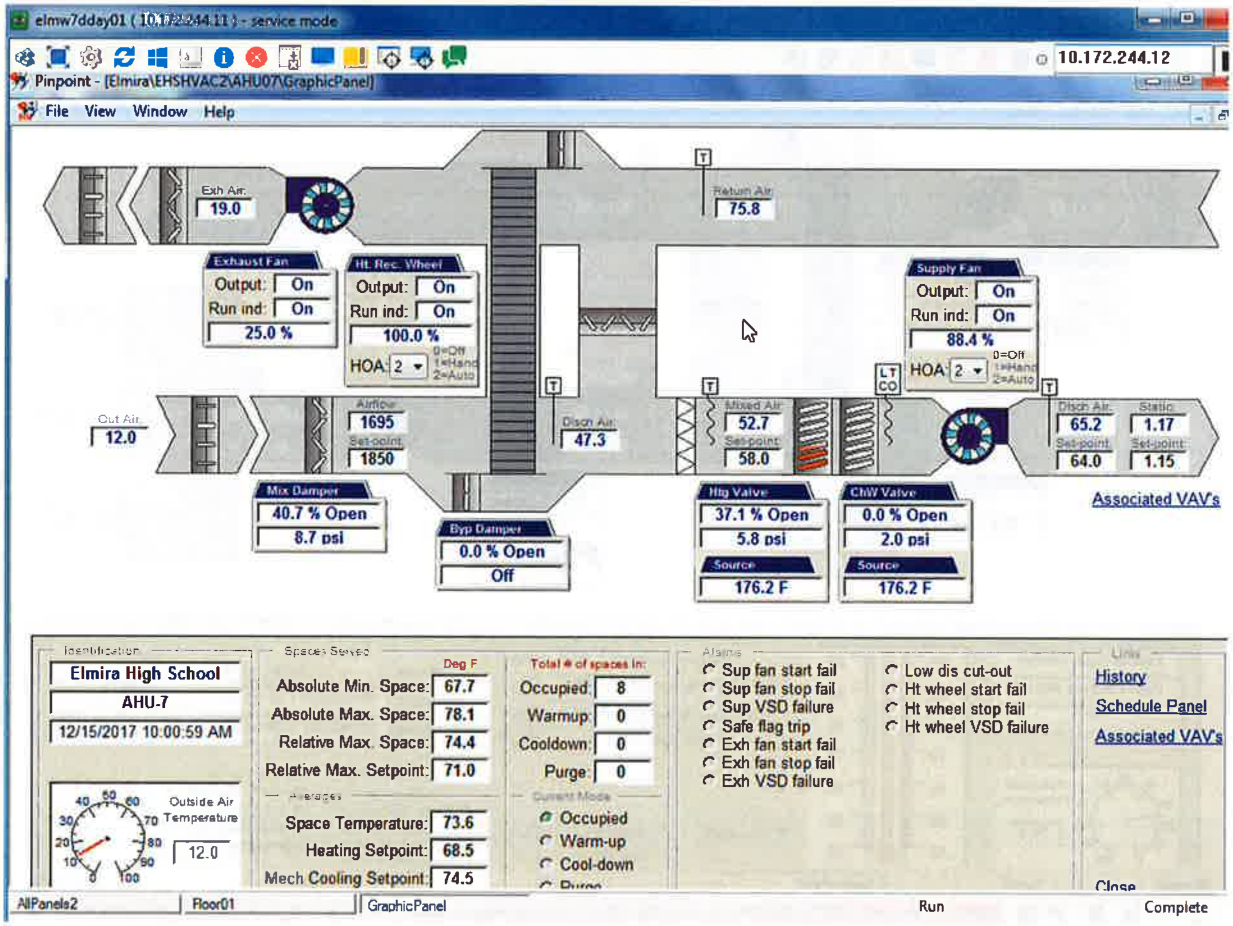
Outside Air Temperature: 12.0

Heating Set-point: 69.0 Deg F
Space Temperature: 70.0 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Mech. Cooling Set-point: 75.0 Deg F
Set-point Bias: 0 Deg F

● Occupied
○ Warm-up
○ Cool-down
○ Purge
○ Econ

Schedule: 3
Override (Minutes): 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:30:00 PM

○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Ret fan start fail
○ Ret fan stop fail
○ Ret VSD Failure
○ Low dis cut-out
○ Safe flag trip



Exh Air: 19.0

Return Air: 75.8

Exhaust Fan
Output: On
Run ind: On
25.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Supply Fan
Output: On
Run ind: On
88.4 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 12.0

Airflow: 1695
Set-point: 1850

Disch Air: 47.3

Mixed Air: 52.7
Set-point: 58.0

Disch Air: 65.2
Set-point: 64.0

Static: 1.17
Set-point: 1.15

Associated VAV's

Mix Damper
40.7 % Open
8.7 psi

Byp Damper
0.0 % Open
Off

Htg Valve
37.1 % Open
5.8 psi
Source
176.2 F

ChW Valve
0.0 % Open
2.0 psi
Source
176.2 F

Identification
Elmira High School
AHU-7
12/15/2017 10:00:59 AM

Outside Air Temperature: 12.0

Spaces Served (Deg F)
Absolute Min. Space: 67.7
Absolute Max. Space: 78.1
Relative Max. Space: 74.4
Relative Max. Setpoint: 71.0

Averages
Space Temperature: 73.6
Heating Setpoint: 68.5
Mech Cooling Setpoint: 74.5

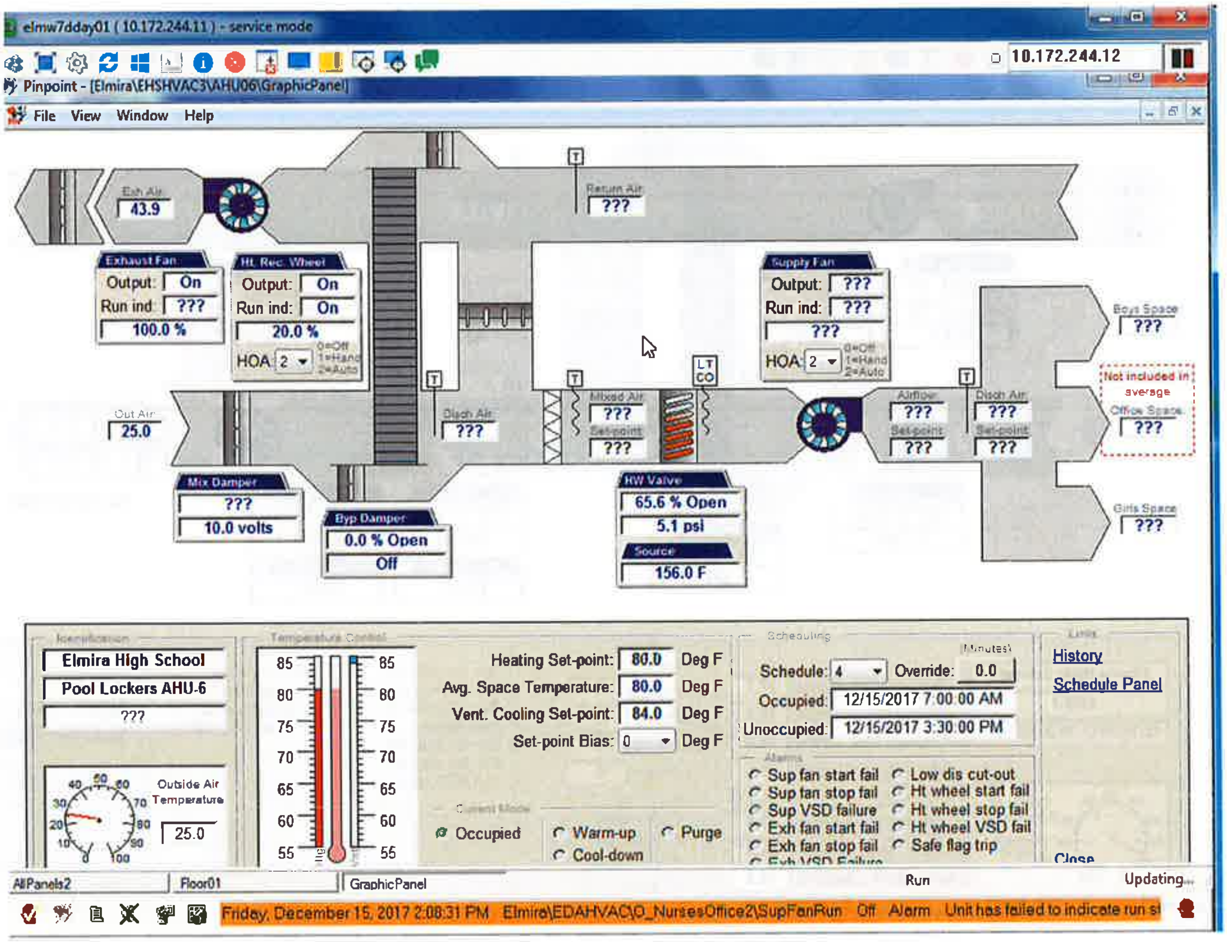
Total # of spaces in:
Occupied: 8
Warmup: 0
Cooldown: 0
Purge: 0

Current Mode
● Occupied
○ Warm-up
○ Cool-down
○ Purge

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Safe flag trip
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD failure

Links
History
Schedule Panel
Associated VAV's
Close

AllPanels2 | Floor01 | GraphicPanel | Run | Complete



Exh Air: 43.9

Return Air: ???

Exhaust Fan — Output: On; Run ind: ???; 100.0 %

Ht. Rec. Wheel — Output: On; Run ind: On; 20.0 %; HOA: 2

Supply Fan — Output: ???; Run ind: ???; ???; HOA: 2

Out Air: 25.0

Disch Air: ???

Mixed Air: ???; Set-point: ???

Mix Damper: ???; 10.0 volts

Byp Damper: 0.0 % Open; Off

HW Valve: 65.6 % Open; 5.1 psi

Source: 156.0 F

Airflow: ???; Set-point: ???

Disch Air: ???; Set-point: ???

Boys Space: ???

Office Space: ???

Girls Space: ???

Elmira High School

Pool Lockers AHU-6

???

Outside Air Temperature: 25.0

Heating Set-point: 80.0 Deg F

Avg. Space Temperature: 80.0 Deg F

Vent. Cooling Set-point: 84.0 Deg F

Set-point Bias: 0 Deg F

Current Mode:

● Occupied
○ Warm-up
○ Purge
○ Cool-down

Schedule: 4

Override: 0.0 (Minutes)

Occupied: 12/15/2017 7:00:00 AM

Unoccupied: 12/15/2017 3:30:00 PM

Alarms:

○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD Failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD fail
○ Safe flag trip

History

Schedule Panel

Close

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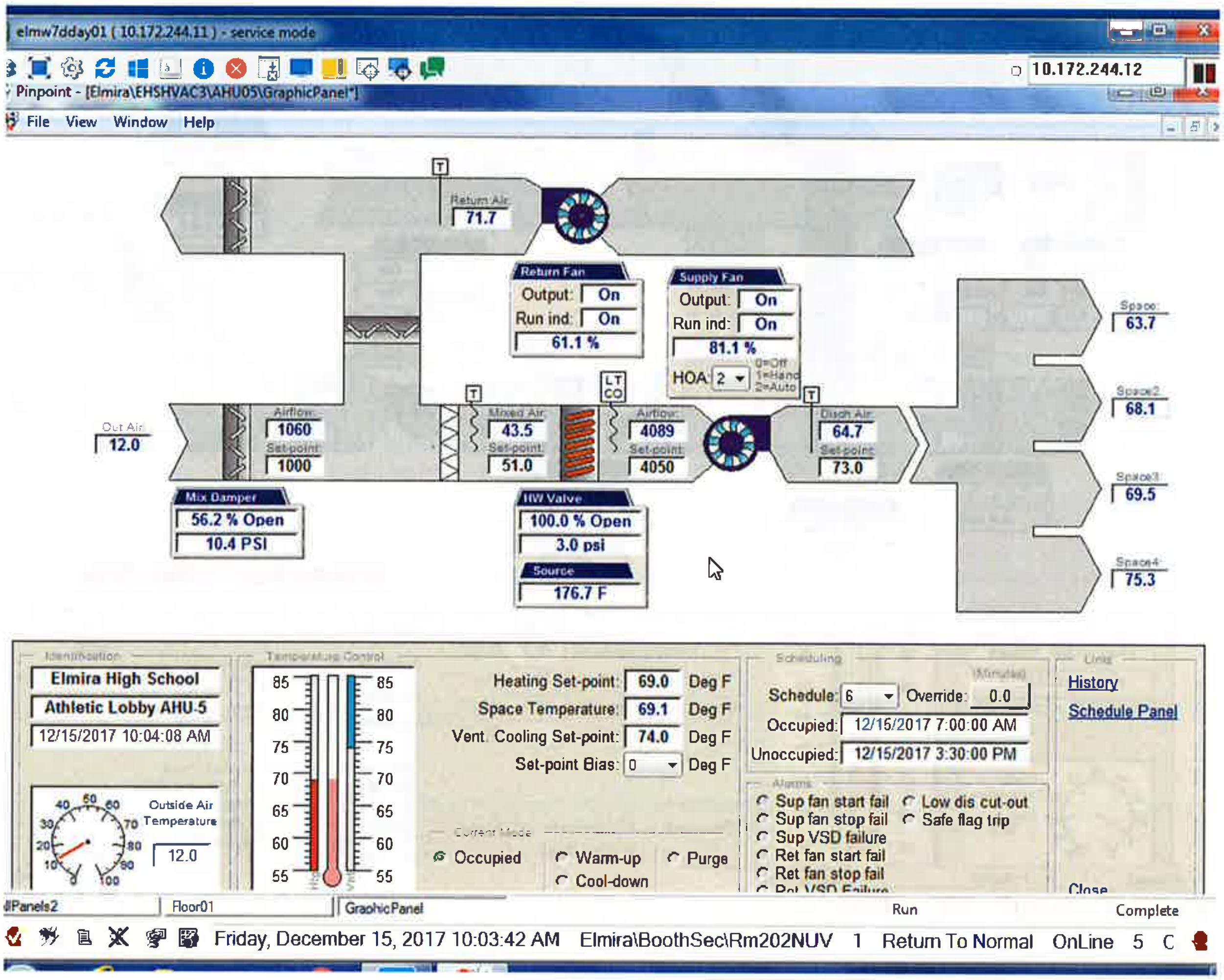
Friday, December 15, 2017 2:08:31 PM   Elmira\EDAHVAC\O_NursesOffice2\SupFanRun   Off   Alarm   Unit has failed to indicate run st
```



elmw7dday01 (10.172.244.11) - service mode

10.172.244.12

Pinpoint - [Elmira\EHSHVAC3\AHU05\GraphicPanel*]

Return Air: 71.7

Return Fan
Output: On
Run ind: On
61.1 %

Supply Fan
Output: On
Run ind: On
81.1 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 12.0

Airflow: 1060
Set-point: 1000

Mixed Air: 43.5
Set-point: 51.0

Airflow: 4089
Set-point: 4050

Disch Air: 64.7
Set-point: 73.0

Space: 63.7
Space2: 68.1
Space3: 69.5
Space4: 75.3

Mix Damper
56.2 % Open
10.4 PSI

HW Valve
100.0 % Open
3.0 psi
Source
176.7 F

Identification
Elmira High School
Athletic Lobby AHU-5
12/15/2017 10:04:08 AM

Outside Air Temperature: 12.0

Temperature Control

Heating Set-point: 69.0 Deg F
Space Temperature: 69.1 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Set-point Bias: 0 Deg F

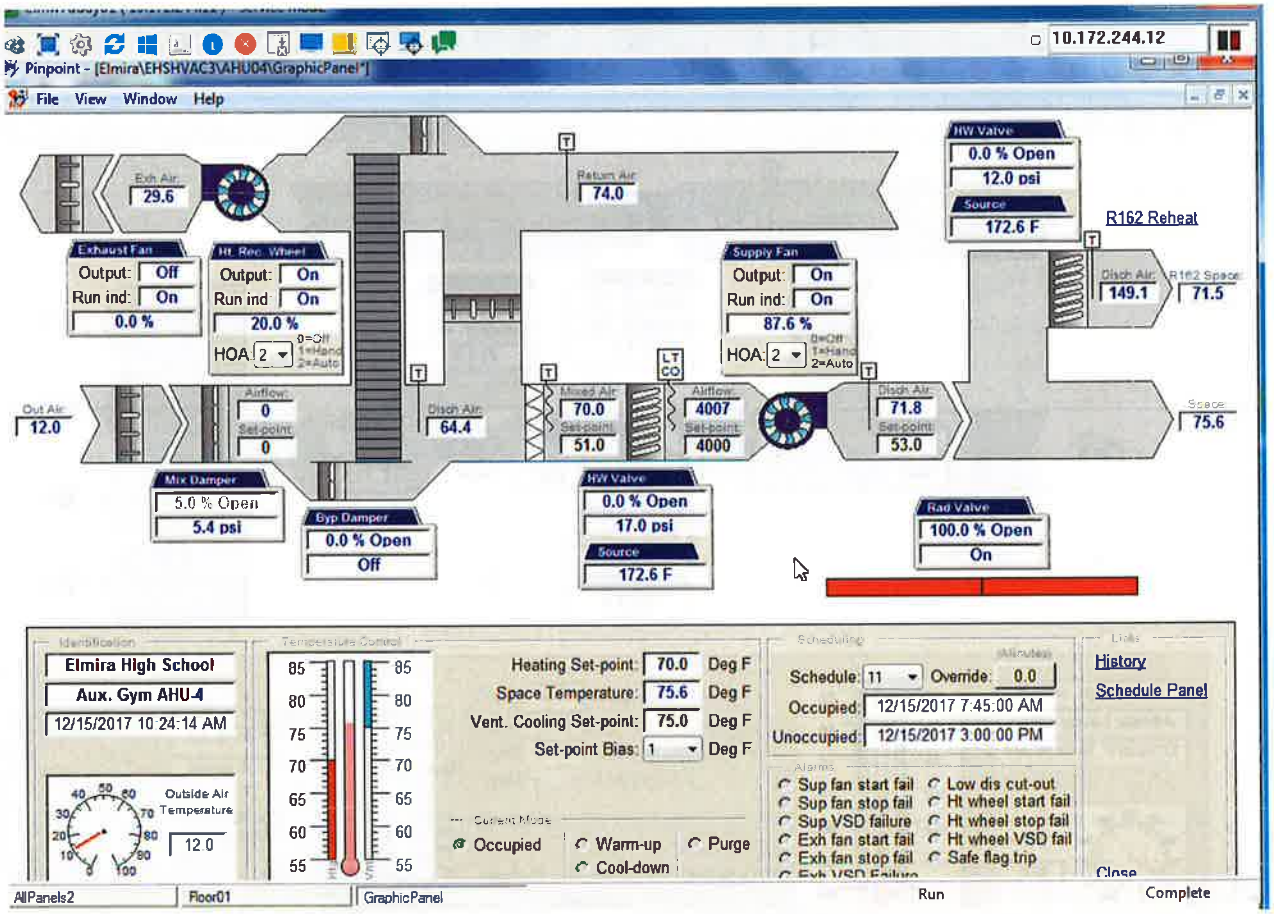
Current Mode
● Occupied ○ Warm-up ○ Purge
○ Cool-down

Scheduling
Schedule: 6 Override: (Minutes) 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:30:00 PM

Alarms
○ Sup fan start fail ○ Low dis cut-out
○ Sup fan stop fail ○ Safe flag trip
○ Sup VSD failure
○ Ret fan start fail
○ Ret fan stop fail
○ Ret VSD Failure

Links
History
Schedule Panel
Close

Friday, December 15, 2017 10:03:42 AM Elmira\BoothSec\Rm202NUV 1 Return To Normal OnLine 5 C



Exh Air: 29.6

Return Air: 74.0

Exhaust Fan
Output: Off
Run ind: On
0.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
20.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 12.0

Airflow: 0
Set-point: 0

Disch Air: 64.4

Mixed Air: 70.0
Set-point: 51.0

Airflow: 4007
Set-point: 4000

Supply Fan
Output: On
Run ind: On
87.6 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Disch Air: 71.8
Set-point: 53.0

Space: 75.6

HW Valve
0.0 % Open
12.0 psi
Source
172.6 F

Disch Air: 149.1
R162 Space: 71.5

Mix Damper
5.0 % Open
5.4 psi

Byp Damper
0.0 % Open
Off

HW Valve
0.0 % Open
17.0 psi
Source
172.6 F

Rad Valve
100.0 % Open
On

Identification
Elmira High School
Aux. Gym AHU-4
12/15/2017 10:24:14 AM

Outside Air Temperature: 12.0

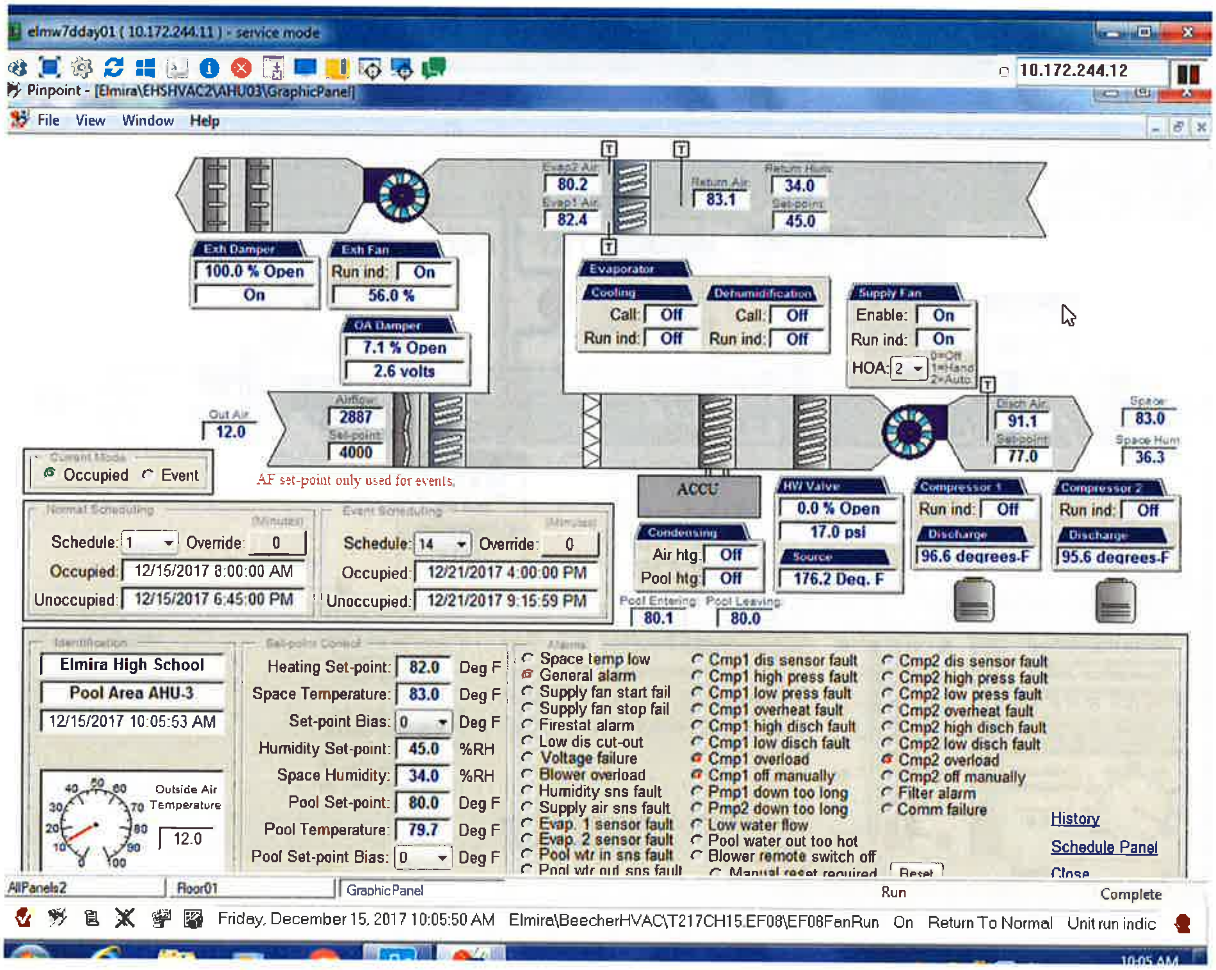
Temperature Control
Heating Set-point: 70.0 Deg F
Space Temperature: 75.6 Deg F
Vent. Cooling Set-point: 75.0 Deg F
Set-point Bias: 1 Deg F

Current Mode
● Occupied ○ Warm-up ○ Purge
○ Cool-down

Scheduling
Schedule: 11 Override: 0.0 (Minutes)
Occupied: 12/15/2017 7:45:00 AM
Unoccupied: 12/15/2017 3:00:00 PM

Alarms
○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Exh fan start fail
○ Exh fan stop fail
○ Exh VSD Failure
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD fail
○ Safe flag trip

Links



Evap2 Air: 80.2
Evap1 Air: 82.4
Return Air: 83.1
Return Hum: 34.0
Set-point: 45.0

Exh Damper
100.0 % Open
On

Exh Fan
Run ind: On
56.0 %

OA Damper
7.1 % Open
2.6 volts

Evaporator

Cooling
Call: Off
Run ind: Off

Dehumidification
Call: Off
Run ind: Off

Supply Fan
Enable: On
Run ind: On
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 12.0
Airflow: 2887
Set-point: 4000
Disch Air: 91.1
Set-point: 77.0
Space: 83.0
Space Hum: 36.3

Current Mode
● Occupied ○ Event

AF set-point only used for events.

HW Valve
0.0 % Open
17.0 psi

Source
176.2 Deg. F

Compressor 1
Run ind: Off
Discharge
96.6 degrees-F

Compressor 2
Run ind: Off
Discharge
95.6 degrees-F

Condensing
Air htg: Off
Pool htg: Off

Pool Entering: 80.1
Pool Leaving: 80.0

Normal Scheduling
Schedule: 1 Override (Minutes): 0
Occupied: 12/15/2017 8:00:00 AM
Unoccupied: 12/15/2017 6:45:00 PM

Event Scheduling
Schedule: 14 Override (Minutes): 0
Occupied: 12/21/2017 4:00:00 PM
Unoccupied: 12/21/2017 9:15:59 PM

Identification
Elmira High School
Pool Area AHU-3
12/15/2017 10:05:53 AM

Outside Air Temperature: 12.0

Set-point Control
Heating Set-point: 82.0 Deg F
Space Temperature: 83.0 Deg F
Set-point Bias: 0 Deg F
Humidity Set-point: 45.0 %RH
Space Humidity: 34.0 %RH
Pool Set-point: 80.0 Deg F
Pool Temperature: 79.7 Deg F
Pool Set-point Bias: 0 Deg F

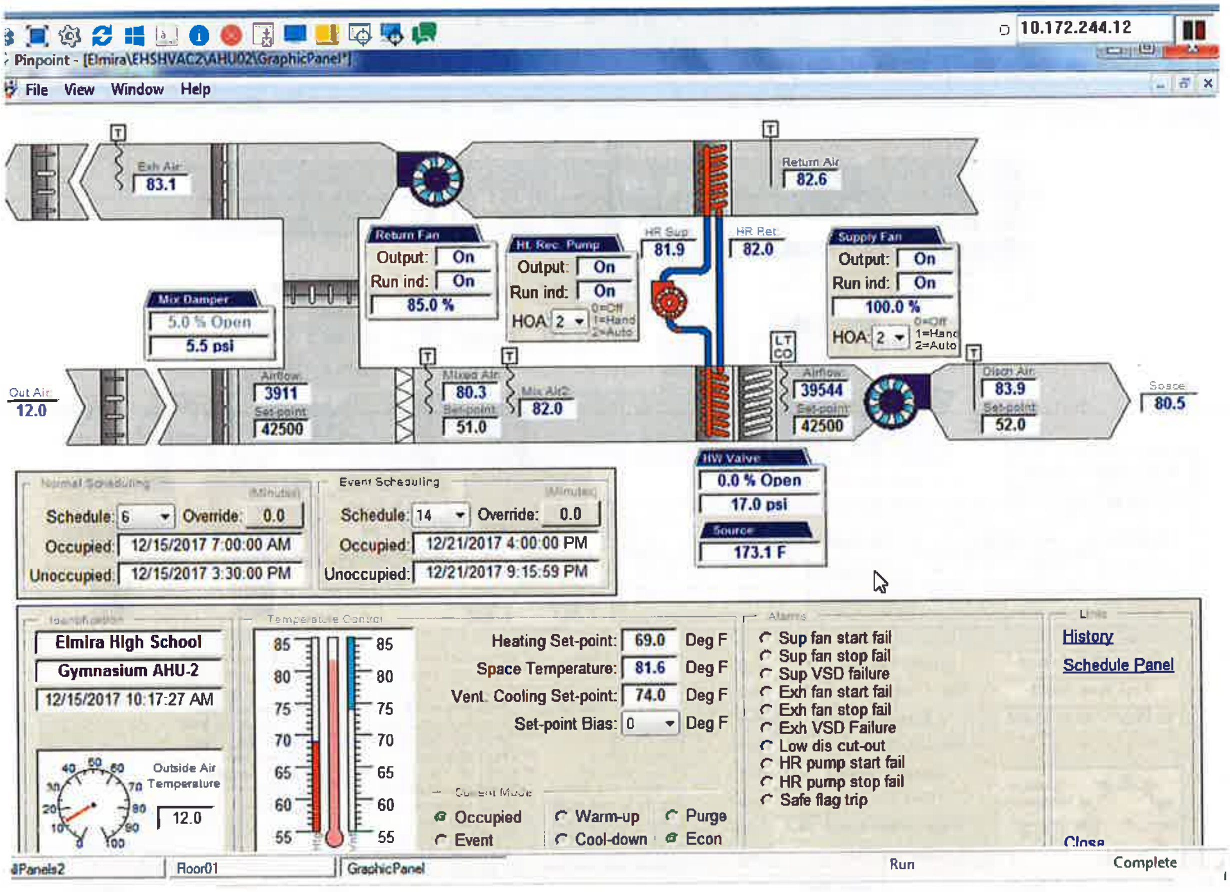
Alarms
○ Space temp low
● General alarm
○ Supply fan start fail
○ Supply fan stop fail
○ Firestat alarm
○ Low dis cut-out
○ Voltage failure
○ Blower overload
○ Humidity sns fault
○ Supply air sns fault
○ Evap. 1 sensor fault
○ Evap. 2 sensor fault
○ Pool wtr in sns fault
○ Pool wtr out sns fault
○ Cmp1 dis sensor fault
○ Cmp1 high press fault
○ Cmp1 low press fault
○ Cmp1 overheat fault
○ Cmp1 high disch fault
○ Cmp1 low disch fault
● Cmp1 overload
● Cmp1 off manually
○ Pmp1 down too long
○ Pmp2 down too long
○ Low water flow
○ Pool water out too hot
○ Blower remote switch off
○ Manual reset required Reset
○ Cmp2 dis sensor fault
○ Cmp2 high press fault
○ Cmp2 low press fault
○ Cmp2 overheat fault
○ Cmp2 high disch fault
○ Cmp2 low disch fault
● Cmp2 overload
○ Cmp2 off manually
○ Filter alarm
○ Comm failure

History
Schedule Panel
Close

Run Complete

Friday, December 15, 2017 10:05:50 AM Elmira\BeecherHVAC\T217CH15.EF08\EF08FanRun On Return To Normal Unit run indic

10:05 AM



Exh Air: 83.1

Return Air: 82.6

Return Fan
Output: On
Run ind: On
85.0 %

Ht. Rec. Pump
Output: On
Run ind: On
HOA: 2

HR Sup: 81.9

HR Ret: 82.0

Supply Fan
Output: On
Run ind: On
100.0 %
HOA: 2

Mix Damper
5.0 % Open
5.5 psi

Out Air: 12.0

Airflow: 3911
Set-point: 42500

Mixed Air: 80.3
Set-point: 51.0

Mix Air2: 82.0

Airflow: 39544
Set-point: 42500

Disch Air: 83.9
Set-point: 52.0

Space: 80.5

HW Valve
0.0 % Open
17.0 psi

Source
173.1 F

Normal Scheduling (Minutes)
Schedule: 6 Override: 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:30:00 PM

Event Scheduling (Minutes)
Schedule: 14 Override: 0.0
Occupied: 12/21/2017 4:00:00 PM
Unoccupied: 12/21/2017 9:15:59 PM

Identification
Elmira High School
Gymnasium AHU-2
12/15/2017 10:17:27 AM

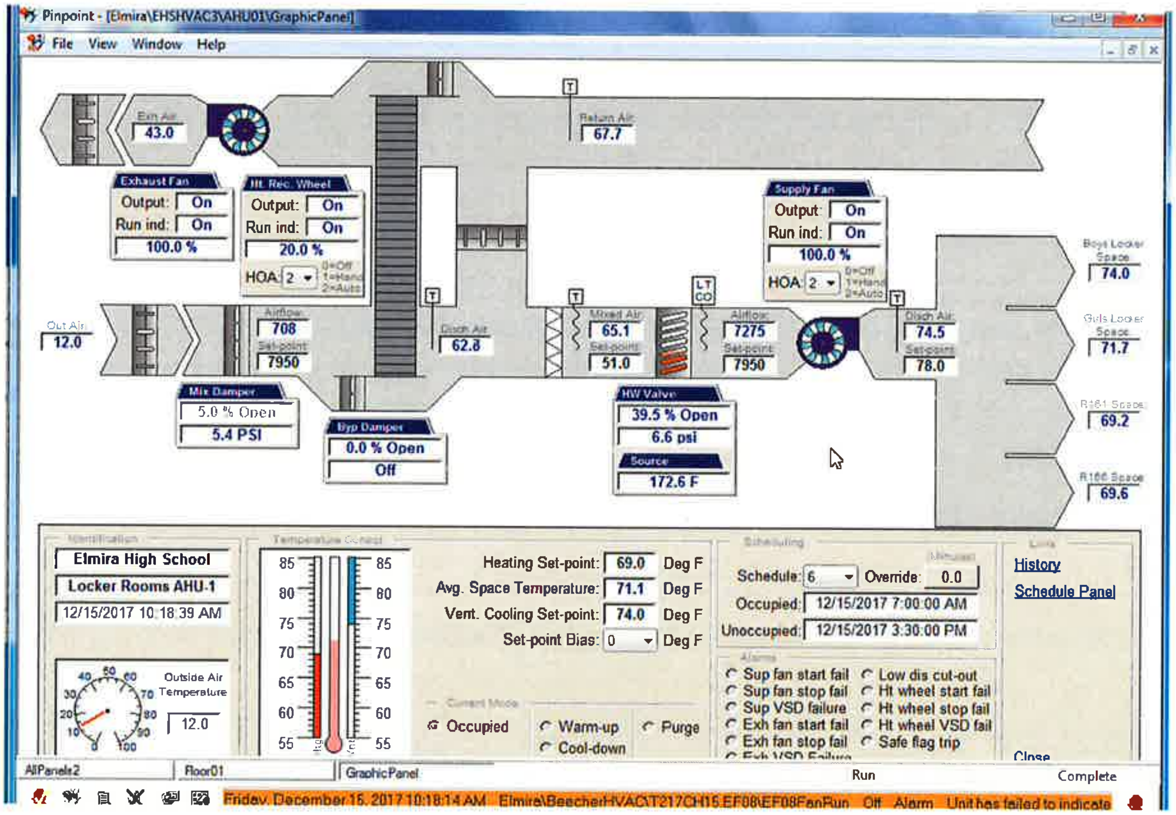
Outside Air Temperature: 12.0

Temperature Control
Heating Set-point: 69.0 Deg F
Space Temperature: 81.6 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Set-point Bias: 0 Deg F

Current Mode
● Occupied ○ Warm-up ○ Purge
○ Event ○ Cool-down ● Econ

Alarms
- ○ Sup fan start fail
- ○ Sup fan stop fail
- ○ Sup VSD failure
- ○ Exh fan start fail
- ○ Exh fan stop fail
- ○ Exh VSD Failure
- ○ Low dis cut-out
- ○ HR pump start fail
- ○ HR pump stop fail
- ○ Safe flag trip

Links



Exh Air: 43.0

Return Air: 67.7

Exhaust Fan
Output: On
Run ind: On
100.0 %

Ht. Rec. Wheel
Output: On
Run ind: On
20.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Supply Fan
Output: On
Run ind: On
100.0 %
HOA: 2 (0=Off 1=Hand 2=Auto)

Out Air: 12.0

Airflow: 708
Set-point: 7950

Disch Air: 62.8

Mixed Air: 65.1
Set-point: 51.0

Airflow: 7275
Set-point: 7950

Disch Air: 74.5
Set-point: 78.0

Boys Locker Space: 74.0
Girls Locker Space: 71.7
R161 Space: 69.2
R166 Space: 69.6

Mix Damper
5.0 % Open
5.4 PSI

Byp Damper
0.0 % Open
Off

HW Valve
39.5 % Open
6.6 psi

Source
172.6 F

Elmira High School
Locker Rooms AHU-1
12/15/2017 10:18:39 AM

Outside Air Temperature: 12.0

Heating Set-point: 69.0 Deg F
Avg. Space Temperature: 71.1 Deg F
Vent. Cooling Set-point: 74.0 Deg F
Set-point Bias: 0 Deg F

Current Mode: ● Occupied ○ Warm-up ○ Cool-down ○ Purge

Schedule: 6 Override: 0.0
Occupied: 12/15/2017 7:00:00 AM
Unoccupied: 12/15/2017 3:30:00 PM

○ Sup fan start fail
○ Sup fan stop fail
○ Sup VSD failure
○ Exh fan start fail
○ Exh fan stop fail
○ Low dis cut-out
○ Ht wheel start fail
○ Ht wheel stop fail
○ Ht wheel VSD fail
○ Safe flag trip

History
Schedule Panel

AllPanels2 | Floor01 | GraphicPanel | Run | Complete

Friday, December 15, 2017 10:18:14 AM Elmira\BeecherHVAC\T217CH15.EF08\EF08FanRun Off Alarm Unit has failed to indicate

ATTACHMENT 7

COVER SYSTEM DISTURBANCES SUMMARY
AND
NYSDOH EMAIL CORRESPONDENCE

Table 1
Sub-Slab Cover System Inspection Log - December 26 and 27, 2017
Elmira High School, Elmira, New York

Location	Floor Cover Type	Floor Condition	Notes
Cafeteria Bathroom - Men	Concrete	No cracks	Floor drain present.
Cafeteria Bathroom - Women	Concrete	No cracks	Floor drain present.
Cafeteria Office	Concrete (Painted)	No cracks	
Cafeteria Serving Area	Ceramic Tile	No cracks	Floor drains present
Cafeteria Storage	Concrete	One (1) large crack (2016)	Unable to enter and review floor. EHS will review.
Dishwashing Room	Concrete (painting)	No cracks, no chipping, multiple floor drains	Multiple floor drains present.
Kitchen - Men's Bathroom	Painted Concrete	No cracks	Floor drain present.
Kitchen - Women's Bathroom	Painted Concrete	No cracks	Floor drain present.
Kitchen/Food Preparation/Serving/Dishes	Painted Concrete	No cracks	Multiple floor drains present.
M-13	Concrete	No cracks	
M-14	Concrete	One (1) large crack, covered with sealent	
M-15	Concrete	No cracks	
M-16	Concrete	No cracks	Floor drain present.
M-17	Concrete	No cracks	
M-18	Concrete	No cracks	
North Wing of Stage	Concrete	No cracks	
Room 100 - Library	Carpet	N/A, No potruding evidence	
Room 100A - Library Office	Vinyl Tile	No cracks	
Room 101	Concrete	One (1) crack running east-west, covered in sealant.	
Room 101A - Kiln Room	Concrete	One (1) crack, covered in sealant.	
Room 102	Concrete	Cracks on south side of room, covered in sealant.	
Room 102 - South Office	Concrete	Cracks in office, covered in sealant.	Floor drain present.
Dark Room 102A	Concrete	No cracks	
Room 103 and Office	Concrete	Cracks throughout floor in office and classroom, covered in sealant.	
Room 104	Carpet	N/A, No potruding evidence	
Room 104A - Office	Vinyl Tile	Missing Vinyl Tiles - near cut out in wall and adjacent to water heater - no cracks in underneath concrete and in good condition.	See Photograph 1
Room 105	Vinyl Tile	No cracks, multiple chipped tile areas; covered in sealant	
Room 106	Vinyl Tile	No cracks, multiple chipped tile areas; covered in sealant.	
Room 107	Vinyl Tile	No cracks	
Room 107A	Vinyl Tile	No cracks	
Room 107B - Bathroom	Vinyl Tile	No cracks	Floor drain present.
Room 108	Vinyl Tile	No cracks	
Room 109	Vinyl Tile	No cracks	
Room 110	Vinyl Tile	No cracks, multiple chipped tile areas< 1"x1"x1"; covered in sealant	
Room 111	Vinyl Tile	No cracks, multiple chipped tile areas< 1"x1"x1"; covered in sealant	
Room 112	Vinyl Tile	No cracks, multiple chipped tile areas< 1"x1"x1"; covered in sealant	
Room 113 - Faculty Lounge	Vinyl Tile	No cracks	
Room 113A	Vinyl Tile	No cracks	
Room 113A - Women's Restroom	Vinyl Tile	No cracks	
Room 113B - Men's Restroom	Vinyl Tile	No cracks	
Room 114	Vinyl Tile	No cracks	
Room 115	Vinyl Tile	No cracks, multiple chipped tile areas< 1"x1"x1"; covered in sealant	
Room 116	Vinyl Tile	No cracks, multiple chipped tile areas; covered in sealant	
Room 117	Vinyl Tile	No cracks, multiple chipped tile areas; covered in sealant	
Room 118	Vinyl Tile	No cracks	
Room 119 Student Personnel Offices	Carpet	N/A, No potruding evidence	
Room 119A Asst. Principal	Carpet	N/A, No potruding evidence	
Room 119B Asst. Principal	Carpet	N/A, No potruding evidence	
Room 120	Vinyl Tile	No cracks	
Room 120A - Storage	Vinyl Tile	No cracks	
Room 121	Vinyl Tile	Three (3) holes, one and one-half (1.5) inches diameter, 1 = 1", 1 = 0.5";tiles missing under smat board, sealant present	
Room 122	Vinyl Tile	No cracks	
Room 124	Vinyl Tile	Three (3) holes in southwest corner of room, approximately 1" diameter and 1/16" deep, sealant present,tiles from SSDS	
Room 125	Vinyl Tile, covered with sealent	Multiple holes < 1" diameter, tiles from Geosyntec, SSDS in Fwing	
Room 126	Vinyl Tile	No cracks	
Room 127	Vinyl Tile	No cracks, tiles where SSDS by Geosyntec (tiles removed)	See Photograph 2
Room 128	Vinyl Tile	No cracks, tiles where SSDS by Geosyntec (tiles removed), small sections missing Terrazzo	See Photograph 3

Table 1 (cont.)
Sub-Slab Cover System Inspection Log - December 26 and 27, 2017
Elmira High School, Elmira, New York

Location	Floor Cover Type	Floor Condition	Notes
Room 129A - Main Office (Registrar)	Carpet	N/A, No potruding evidence	
Room 129B - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129C - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129D - Main Office (Guidance Room))	Carpet	N/A, No potruding evidence	
Room 129E - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129F - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129G - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129H - Main Office (Guidance Room)	Carpet	N/A, No potruding evidence	
Room 129J - Main Office (Restroom)	Vinyl Tile	No cracks	
Room 129K - Mail/Copy	Carpet	N/A, No potruding evidence	
Room 130	Vinyl Tile	Small area <1"x1" where terrazzo tile missing, covered with sealant	
Room 131 - Main Office (Guidance Conference)	Carpet	N/A, No potruding evidence	
Room 132	Vinyl Tile	Deep crack - 1"x1"x0.5" in North corner adjacent exit.	EHS will address. See Photograph 4
Room 133 - Main Office	Terrazzo/carpet	Crack in vinyl near Room 133A, covered in sealant, carpet-no potruding evidence	
Room 133A - Main Office	Carpet	N/A, No potruding evidence	
Room 133B - Main Office (Restroom)	Vinyl Tile	No cracks	
Room 133C - Main Office (Office Storage)	Vinyl Tile	Missing piece ~ 1" X 2" Covered with sealent	
Room 133E - Main Office	Carpet	N/A, No potruding evidence	
Room 133F - Main Office (Principal)	Carpet	N/A, No potruding evidence	
Room 133G - Main Office (Conference Room)	Carpet	N/A, No potruding evidence	
Room 134 - Cafeteria	Terrazzo	Three (3) cracks-Eastern exit to courtyard and central, near men's bathroom	
Room 135	Concrete	No cracks	Floor drain present.
Room 136A - District Food Service	Carpet	N/A, No potruding evidence	
Room 138A	Vinyl Tile	No cracks	Floor drain present.
Room 138A - Closet	Vinyl Tile	No cracks	
Room 138B	Vinyl Tile	No cracks.	Floor drain present.
Room 138C - South Office	Vinyl Tile	No cracks, storage closet but no chemicals stored	
Room 139 - Technology Room	Wood	1.5" X 2" piece missing	See Photograph 5
Room 139A - Storage	Concrete	No cracks	
Room 139B - Finish Room	Concrete	No cracks	
Room 139C - Lumber Storage	Concrete	No cracks	
Room 140	Vinyl Tile	No cracks	
Room 140A - Shop	Vinyl Tile	No cracks	
Room 141 - Technology Office	Vinyl Tile	No cracks	
Room 142 - Wellness Center	Rubber Mats	Not Available	
Room 143	Vinyl Tile	No cracks	
Room 143A - Storage Closet (IDF)	Concrete	No cracks	
Room 144	Vinyl Tile	One (1) crack on west wall	
Room 145 - Nurse Office	Vinyl Tile	No cracks, tiles missing where sub-slab port is.	
Room 145A - Nurses' Office	Vinyl Tile	One (1) crack, sealant present	
Room 146 - Band Room	Vinyl Tile	One (1) large crack in tile at entrance. One (1) long crack in south entrance, cracks present in offices; covered with sealant.	
Room 146A - Office	Vinyl Tile	No cracks	
Room 146B - Office	Vinyl Tile	No cracks	
Room 146C - Office	Vinyl Tile	No cracks	
Room 146D - Two East Storage Rooms	Vinyl Tile	No cracks	
Room 147 - Orchestra	Vinyl Tile	No cracks	
Room 147B - Practice Room	Carpet	N/A, No potruding evidence	
Room 147C - Practice Room	Carpet	N/A, No potruding evidence	
Room 147D - Office	Carpet	N/A, No potruding evidence	
Room 147E - Office	Carpet	N/A, No potruding evidence	

Table 1 (cont.)
Sub-Slab Cover System Inspection Log - December 26 and 27, 2017
Elmira High School, Elmira, New York

Location	Floor Cover Type	Floor Condition	Notes
Room 148	Vinyl Tile	Large crack near north exit through tile, not covered with sealant - but does not penetrate underneath concrete slab.	
Room 148B - Office	Vinyl Tile	No cracks	
Room 148C - Office	Vinyl Tile	No cracks.	
Room 148D - Music Library	Vinyl Tile	No cracks, no tile along edges of room - no cracks observed in concrete.	See Photograph 6
Room 148E - Practice Room	Carpet	N/A, No potruding evidence	
Room 148F - Practice Room	Carpet	N/A, No potruding evidence	
Room 148G - Practice Room	Carpet	N/A, No potruding evidence	
Room 148H - Practice Room	Carpet	N/A, No potruding evidence	
Room 148J - Practice Room	Carpet	N/A, No potruding evidence	
Room 148K - Practice Room	Carpet	N/A, No potruding evidence	
Room 148L - Practice Room	Carpet	N/A, No potruding evidence	
Room 149	Carpet	N/A, No potruding evidence	
Room 150C - Conference Room	Carpet	N/A, No potruding evidence	
Room 151	Carpet	N/A, No potruding evidence	
Room 149 - Storage	Concrete	No cracks	
Room 152 - Boys Pool Dressing Room	Concrete	One (1) small crack, covered in sealant.	Multiple floor drains present.
Room 152A - Boys Pool Locker Room	Concrete	One (1) small crack, covered in sealant.	Multiple floor drains present.
Room 152C - Pool Storage	Concrete	One (1) crack, covered in sealant.	
Room 153 - Girls Pool Dressing Room	Concrete	No cracks	Multiple floor drains present.
Room 153A - Girls Pool Locker Room	Concrete	No cracks	Multiple floor drains present.
Room 153B - Girls Pool Locker	Concrete	No cracks	Multiple floor drains present.
Room 154 - Pool	Ceramic Tile	No cracks	Floor drains every 12 feet around pool
Room 154B - Pool Restroom	Conrete	No cracks	Floor drain present.
Room 154C - Pool Restroom	Conrete	No cracks	Floor drain present.
Room 154D - Pool Storage	Concrete	One (1) long narrow crack, not covered in	
Room 154E - Pool Filter Room	Concrete	No cracks, opening in floor for pipe discharge system, sump pump, floor drain	
Room 154G - Mechanical	Concrete	No cracks	Floor drain present
Room 155 - Gym	Concrete W/E Edges, Wood Center	Crack observed along E wall.	EHS personnel will address. Photograph 7
Room 156 - Girls PE Locker Room	Tiles	No cracks	Floor drain present.
Room 157 - Girls Coaches Office	Vinyl Tile	No cracks	
Room 158 - Storage	Concrete	No cracks	
Room 159 - Storage	Concrete	One (1) crack observed.	EHS personnel will address.
Room 160 - Coaches Office	Vinyl Tile	No cracks	
Room 161B - Boys Team Locker Restroom	Painted Concrete	One (1) crack, sealant present	
Room 161D - Boys Team Locker Showers	Vinyl Tile/Concrete	No cracks	Multiple floor drains present.
Room 162 - Training Room	Concrete/Tile	No cracks	
Room 162A - Storage	Painted Concrete	No cracks	
Room 163 - Auditorium	Concrete w/Carpet	Eighteen (18) small cracks near seats 114, 115, & one (1) each in rows J, K, L, M, N, O, P, Q, & R - identified as surficial.	No new cracks observed from 2014 inspection.
Room 163C - Stage	Concrete	Multiple surficial cracks, covered in sealant.	
Room 164 - Boys PE Locker Room	Concrete	One (1) crack, sealant present	
Room 164A - Boys Coaches Office	Vinyl Tile	No cracks	
Room 164B - Staff Restroom	Concrete	One (1) crack, sealant present	Floor drain present
Room 165 - Concessions	Vinyl Tile	No cracks	
Room 166B - Girls Team Locker Bathroom	Concrete	No cracks	
Room 166D - GirlsTeam Locker Showers	Concrete/Tile	No cracks,	Multiple floor drains present.
Room 170B - (IDF)	Concrete	No cracks	
Room 171 - Auxillary Gym	Rubber Mats (concrete under)	No cracks.	
Room 172A - Boys Bathroom	Red Tile	No cracks	
Room 172B - Storage Room	Concrete	No cracks	
Room 172C - Girls Bathroom	Red Tile	No cracks	
Room 174 - Pool Office	Vinyl Tile	No cracks	
Room 174A - Pool Room	Concrete	One (1) crack - covered in sealant.	Multiple floor drains present.
Room 176 - Sick Room	Vinyl Tile	No cracks	
Room 176A - Faculty Bathroom	Vinyl Tile	No cracks	
Room 176B - Student Bathroom	Vinyl Tile	No cracks	
Room 178 - Stage Dressing Room-Girls	Concrete	One (1) crack running east-west on south wall of girls dressing area - covered in sealant.	
Room 178A - Girls Restroom	Concrete	No cracks.	Floor drain present.
Room 179 - Stage Dressing Room-Boys	Concrete	One (1) crack running east-west in repair of boys dressing area.	
Room 179A - Boys Restroom	Concrete	No cracks.	Floor drain present.
Room 180- Green Room	Concrete	Two (2) east/west cracks - covered in sealant.	
Room 180A- Costume Room	Concrete	One (1) small surficial crack.	
Room 183G Elevator Machine Room	Concrete	Small surficial crack.	

Table 1 (cont.)
Sub-Slab Cover System Inspection Log - December 26 and 27, 2017
Elmira High School, Elmira, New York

Location	Floor Cover Type	Floor Condition	Notes
Room 183B - Welcome Center	Carpet	N/A, No potruding evidence	
Room 184 - Women's Bathroom	Terrazzo(1)	No cracks	
Room 185A - School store	Carpet	N/A, No potruding evidence	
Room 186 - Snacks	Carpet	N/A, No potruding evidence	
Room 187 - Men's Restroom	Terrazzo(1)	No cracks	
Room 195 - Boys Restroom	Red Ceramic Tile	No cracks, Boy's chipped tiles x3.	Floor drain present. See Photograph 8
Room 195 - Girls Restroom	Red Ceramic Tile	No cracks	Floor drain present
Room K01 - Girls Bathroom	Ceramic Tile	No cracks	Floor drain present.
Room K02 - Boys Bathroom	Ceramic Tile	No cracks	Floor drain present.
Room K04	Vinyl Tile	No cracks	
Room K05 - Prep	Vinyl Tile	No cracks	
Room K06 - Electrical closet	Concrete	1 crack, controlled	
Room K07	Vinyl Tile	No cracks	
Room K08	Vinyl Tile	No cracks	
Room K09 - Prep	Vinyl Tile	No cracks	
Room K10	Vinyl Tile	No cracks	
Room K13	Concrete	One (1) crack, sealant present	
Room K15	Vinyl Tile	No cracks	
Room K16 - Prep Room	Vinyl Tile	No cracks	
Room K17 - Maintenance Closet	Ceramic Tile	No cracks	Floor drain present.
Room K18	Vinyl Tile	No cracks	
Room K19 - Women's Faculty restroom	Ceramic Tile	No cracks	Two floor drains present.
Room K20 - Men's Faculty restroom	Ceramic Tile	No cracks	Two floor drains present.
Room K22	Ceramic Tile	No cracks	
Room M-1	Carpet	N/A, No potruding evidence	
Room M-2	Concrete	No cracks	
Room M-3	Concrete	No cracks	Floor drain present
Room M-4	Vinyl Tile	1 small < 1"x1" hole, no sealant present	
South Wing of Stage	Concrete	One (1) crack. One (1) crack cut in concrete.	
Stage Dressing Room Entrance	Concrete	One (1) crack running north-south	
Stair Well 1	Terrazzo	No cracks	
Stair Well 2	Terrazzo	No cracks	
Stair Well 5	Terrazzo	No cracks	
Stair Well 6(St 6)	Terrazzo	One (1) crack, Missing Terrazzo under heater, covered in sealant	
Stair Well 7	Terrazzo	No cracks	
Hallway - Auditorium	Terrazzo	Four (4) cracks, covered in sealant.	
Hallway - Auxillary Gym	Terrazzo	Five (5) cracks present, covered in sealant.	
Hallway - Cafeteria	Terrazzo(1)	Thirty-two (32) cracks, sealant present on all but one (1) adjacent Cafeteria Room entrance.	EHS personnel were notified of any cracks not covered with sealant.
Hallway - Custodial	Concrete	One (1) crack extended from outside door to loading dock, with no sealent.	EHS personnel were notified of any cracks not covered with sealant.
Hallway - Gym/Pool Entrance	Terrazzo	Seven (7) cracks, covered in sealant.	
Hallway - Ice + Locker Rooms	Concrete	Five (5) cracks, covered in sealant.	
Hallway - K Wing	Terrazzo	No cracks observed. Terazzo in good condition.	
Hallway - Library	Terrazzo	No cracks observed. Terazzo in good condition.	
Hallway - Main Entrance	Terrazzo	Thirteen (13) cracks present, tiles near exit doors adjacent Cafeteria and Library missing/absent tiles under heater.	See Photograph 9
Hallway - Music/Band/Orchestra	Terrazzo	Fourteen (14) cracks present, covered in sealant.	
Hallway - Nurses Office	Terrazzo	Fourteen (14) cracks present, covered in sealant.	
Hallway - Rooms 103 - 108	Terrazzo	Three (3) cracks present, covered in sealant.	
Hallway - Rooms 109 - 112	Terrazzo	Two (2) cracks, covered in sealant.	
Hallway - Rooms 113 - 117	Terrazzo	No cracks observed. Terazzo in good condition.	
Hallway - Rooms 118 - 120	Terrazzo	Three (3) cracks present, covered in sealant.	
Hallway - Rooms 121 - 132	Terrazzo	Three (3) cracks present, covered in sealant.	
Hallway - Rooms 138 - 143	Terrazzo	Twelve (12) cracks, covered in sealant.	

Notes:
(1)Terrazzo is flooring material of marble or stone chips set in mortar and polished when dry.

Photograph 1: Classroom Office (Room 104)

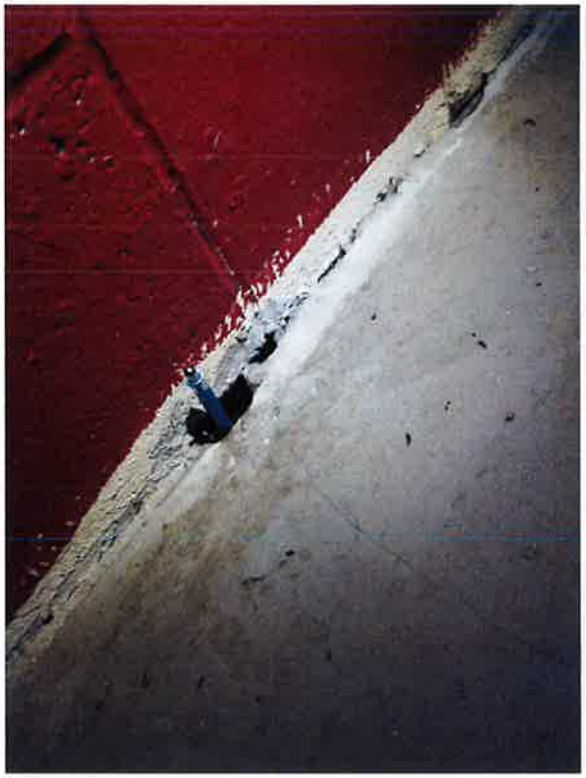
Photograph 2: Classroom (Room 127)

Photograph 3: Classroom (Room 128)

Photograph 4: Classroom (Room 132)

Photograph 5: Technology Room (Room 139)

Photograph 6: Music Library (Room 148D)



Photograph 7: Gym along east wall under bleachers (Room 155)

Photograph 8: Boy's Bathroom (Room 195)

Photograph 9: Main Entrance Hallway (adjacent Cafeteria and Library)

Table 2
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location (1)	Cover Type	Condition	Photograph ID
A3	Grass	No Disturbance in Cover	
A4	Grass	No Disturbance in Cover	
A5	Grass	No Disturbance in Cover	
A6	Grass	No Disturbance in Cover	
A7	Grass	No Disturbance in Cover	
A8	Grass	No Disturbance in Cover	
B3	Grass	No Disturbance in Cover	
B4	Grass	No Disturbance in Cover	
B5	Grass	No Disturbance in Cover	
B6	Grass	No Disturbance in Cover	
B7	**Grass**	**Dead Vegetation Due to Athletic Activities.**	**1**
B8	Grass	No Disturbance in Cover	
C3	Grass	No Disturbance in Cover	
C4	Grass	No Disturbance in Cover	
C5	Baseball Field	No Disturbance in Cover	
C6	Grass	No Disturbance in Cover	
C7	**Grass**	**Dead Vegetation Due to Athletic Activities.**	**2**
C8	Grass	No Disturbance in Cover	
D3	**Grass & Baseball Field**	**Vector Holes Observed Under Dugouts.**	**3**
D4	Grass & Baseball Field	No Disturbance in Cover	
D5	Grass	No Disturbance in Cover	
D6	Grass	No Disturbance in Cover	
D7	Grass	No Disturbance in Cover	
D8	Grass	No Disturbance in Cover	
E3	Grass & Baseball Field	No Disturbance in Cover	
E4	Grass & Baseball Field	No Disturbance in Cover	
E5	Grass	No Disturbance in Cover	
E6	Grass	No Disturbance in Cover	
F3	Grass	No Disturbance in Cover	
F4	Grass	No Disturbance in Cover	
F5	Grass	No Disturbance in Cover	
F6	Grass	No Disturbance in Cover	
F7	Grass	No Disturbance in Cover	
G3	Grass	No Disturbance in Cover	
G4	Grass	No Disturbance in Cover	
G5	Grass	No Disturbance in Cover	
G6	Grass, Pavement, & Garage	No Disturbance in Cover	
G7	Grass	No Disturbance in Cover	
G8	Grass & Pavement	No Disturbance in Cover	
G9	Grass & Pavement	No Disturbance in Cover	
H3	**Grass**	**No Grass Due to Foot Traffic**	**4**
H4	Grass	No Disturbance in Cover	
H5	Grass & Baseball Field	No Disturbance in Cover	
H6	Grass & Baseball Field	No Disturbance in Cover	
H7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
H8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
H9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I3	Grass	No Disturbance in Cover	
I4	Grass	No Disturbance in Cover	
I5	Grass & Baseball Field	No Disturbance in Cover	
I6	Grass & Baseball Field	No Disturbance in Cover	
I7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
I9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
J3	Grass	No Disturbance in Cover	
J4	Grass	No Disturbance in Cover	
J5	**Grass & Baseball Field**	**No Grass Due to Athletic Activities.**	**5**
J6	Grass, Field House, & Baseball Field	No Disturbance in Cover	
J7	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	**6**
J8	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
J9	**Grass & Pavement**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
K3	Grass & Track	No Disturbance in Cover	
K4	Grass & Track	No Disturbance in Cover	
K5	Grass & Track	No Disturbance in Cover	
K6	Grass, Field House, & Pavement	No Disturbance in Cover	
K7	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	**7**
K8	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
K9	Grass	No Disturbance in Cover	
L3	Grass & Track	No Disturbance in Cover	
L4	Grass	No Disturbance in Cover	

Table 2
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location (1)	Cover Type	Condition	Photograph ID
L5	Grass & Track	No Disturbance in Cover	
L6	Track, Grass, & Pavement	No Disturbance in Cover	
L7	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
L8	**Tennis Court**	**Mulitple Cracks, To Be Addressed During Summer 2017**	
L9	Tennis Court & Grass	No Disturbance in Cover	
M3	**Grass, Track & Bleachers**	**No Grass Due to Foot Traffic**	**10**
M4	Grass	No Disturbance in Cover	
M5	Grass & Track	No Disturbance in Cover	
M6	Track, Pavement, Bleachers	No Disturbance in Cover	
M7	Tennis Court, Grass, & Pavement	No Disturbance in Cover	
M8	**Tennis Court, Grass, & Pavement**	**Dead Vegetation Due to Parking Area Plow Activities from 2016**	**8**
M9	**Tennis Court & Grass**	**Dead Vegetation Due to Parking Area Plow Activities from 2016**	**9**
N3	**Grass, Track & Bleachers**	**No Grass Due to Foot Traffic**	
N4	Grass	No Disturbance in Cover	
N5	Grass & Track	No Disturbance in Cover	
N6	Track, Pavement, Bleachers	No Disturbance in Cover	
N7	Grass	No Disturbance in Cover	
N8	Grass	No Disturbance in Cover	
N9	Pavement & Grass	No Disturbance in Cover	
O3	Grass & Track	No Disturbance in Cover	
O4	Grass	No Disturbance in Cover	
O5	Grass & Track	No Disturbance in Cover	
O6	Grass, Track, & Pavement	No Disturbance in Cover	
O7	Pavement	No Disturbance in Cover	
O8	Pavement	No Disturbance in Cover	
O9	Pavement & Grass	No Disturbance in Cover	
P2	Grass	No Disturbance in Cover	
P3	Grass & Track	No Disturbance in Cover	
P4	**Grass, Track, & Pavement**	**Ruts Due to School Maintenance Vehicle Traffic**	**11**
P5	Grass, Track, & Pavement	No Disturbance in Cover	
P6	Grass & Track	No Disturbance in Cover	
P7	Pavement	No Disturbance in Cover	
P8	Pavement	No Disturbance in Cover	
P9	Pavement & Grass	No Disturbance in Cover	
Q2	Grass	No Disturbance in Cover	
Q3	**Grass & School Building**	**Dead Vegetation Due to School Maintenance Vehicle Traffic**	**12**
Q4	Grass & School Building	No Disturbance in Cover	
Q5	Grass & School Building	No Disturbance in Cover	
Q6	Grass	No Disturbance in Cover	
Q7	Pavement & Grass	No Disturbance in Cover	
Q8	Pavement	No Disturbance in Cover	
Q9	**Pavement & Grass**	**No Grass Due to Foot Traffic**	**21**
R2	**Grass**	**Dead Vegetation Due to School Maintenance Vehicle Traffic**	**13**
R3	Grass & School Building	No Disturbance in Cover	
R4	School Building	No Disturbance in Cover	
R5	School Building, Grass, & Concrete	No Disturbance in Cover	
R6	Grass & Concrete	No Disturbance in Cover	
R7	Grass, Pavement, & Concrete	No Disturbance in Cover	
R8	Pavement	No Disturbance in Cover	
R9	Pavement & Grass	No Disturbance in Cover	
S2	Grass	No Disturbance in Cover	
S3	Grass & School Building	No Disturbance in Cover	
S4	School Building & Pavement	No Disturbance in Cover	
S5	School Building	No Disturbance in Cover	
S6	School Building & Grass	No Disturbance in Cover	
S7	School Building & Concrete	No Disturbance in Cover	
S8	Pavement, School Building, & Concrete	No Disturbance in Cover	
S9	Pavement & Grass	No Disturbance in Cover	
T2	**Grass, Pavement & School Building**	**No Grass Due to Dead Vegetation and Truck Traffic, Vector Holes Present Beneath Trailer**	**14, 15**
T3	Grass, Pavement & School Building	No Disturbance in Cover	
T4	Pavement & School Building	No Disturbance in Cover	
T5	School Building	No Disturbance in Cover	
T6	School Building	No Disturbance in Cover	
T7	School Building & Concrete	No Disturbance in Cover	
T8	School Building, Concrete, Pavement	No Disturbance in Cover	
T9	**Grass, Concrete, School Building**	**No Grass Due to Foot Traffic and Dead Vegetation**	**20**
U1	Grass	No Disturbance in Cover	
U2	**Grass, Pavement, & School Building**	**No Grass Due to Dead Vegetation**	**16**
U3	School Building & Pavement	No Disturbance in Cover	
U4	**School Building & Pavement**	**No Grass Due to Foot Traffic and Dead Vegetation**	**17**

Table 2
Outdoor Cover System Inspection - April 9, 2017
Inspection Log
Elmira High School, Elmira, New York

Grid Location [(1)]	Cover Type	Condition	Photograph ID
U5	School Building	No Disturbance in Cover	
U6	School Building & Concrete	No Disturbance in Cover	
U7	School Building & Concrete	No Disturbance in Cover	
U8	School Building	No Disturbance in Cover	
U9	Grass	No Disturbance in Cover	
V1	Grass	No Disturbance in Cover	
V2	Pavement	No Disturbance in Cover	
V3	Pavement	No Disturbance in Cover	
V4	Pavement & Grass	No Disturbance in Cover	
V5	Pavement, Concrete, & Grass	No Disturbance in Cover	
V6	**Concrete & Grass**	**Dead Grass Due to Foot Traffic**	**18**
V7	Concrete & School Building	No Disturbance in Cover	
V8	School Building	No Disturbance in Cover	
V9	Grass	No Disturbance in Cover	
W1	Grass	No Disturbance in Cover	
W2	Pavement	No Disturbance in Cover	
W3	Pavement	No Disturbance in Cover	
W4	Grass & Pavement	No Disturbance in Cover	
W5	Grass, Pavement, Concrete	No Disturbance in Cover	
W6	**Grass**	**No Grass Due to Foot Traffic and Dead Vegetation**	**19**
W7	Grass, School Building, Pavement	No Disturbance in Cover	
W8	Grass, School Building, Pavement	No Disturbance in Cover	
W9	Grass, School Building, Pavement	No Disturbance in Cover	
X1	Grass	No Disturbance in Cover	
X2	Grass	No Disturbance in Cover	
X3	Grass	No Disturbance in Cover	
X4	Grass	No Disturbance in Cover	
X5	Grass & Pavement	No Disturbance in Cover	
X6	Grass & Pavement	No Disturbance in Cover	
X7	Grass & Pavement	No Disturbance in Cover	

Notes:

(1) See Figure 2 - Outdoor Cover Inspection, April 9, 2017

Conditions in **Bold** to be addressed by Elmira City School District

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 1

Photograph 2

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 3

Photograph 4

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 5

Photograph 6

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 7

Photograph 8

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 9

Photograph 10

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 11

Photograph 12

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 13

Photograph 14

Photograph Log

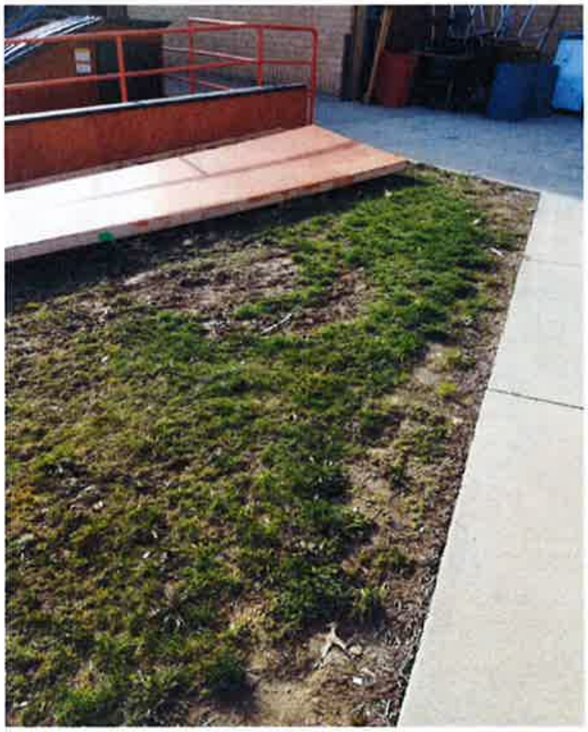
(See Table 2 for Location and Condition Description)

Photograph 15

Photograph 16

Photograph Log

(See Table 2 for Location and Condition Description)



Photograph 17

Photograph 18

Photograph Log

(See Table 2 for Location and Condition Description)

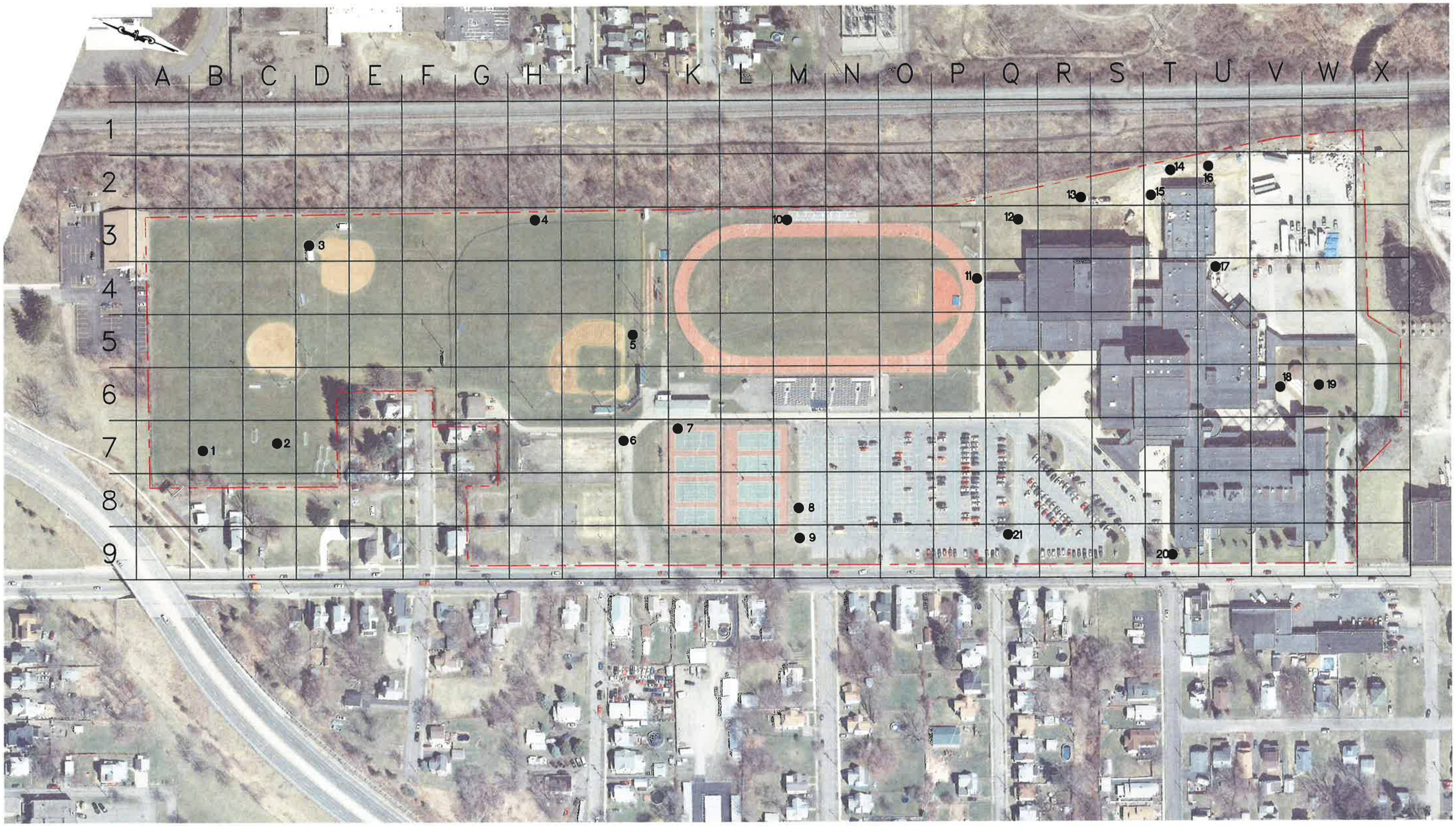
Photograph 19

Photograph 20

Photograph Log

(See Table 2 for Location and Condition Description)

Photograph 21



LEGEND:

— — — APPROXIMATE PROPERTY LINE

●1 PHOTOGRAPH I.D.# OF COVER SYSTEM DISTURBANCE
(GRID SPACE 100')

0 90 180 360

(IN FEET)
1 inch = 180 ft.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

OUTDOOR COVER INSPECTION
APRIL 9, 2017
ELMIRA CITY SCHOOL DISTRICT
ELMIRA HIGH SCHOOL, 777 S. MAIN ST.

CITY OF ELMIRA CHEMUNG CO., N.Y.

PROJ. No.: 28014	DATE: 5/15/17	SCALE: 1" = 180'	DWG. NO. 28014110	FIGURE 2

Amanda Castignetti

From: Mike Dunn [mdunn@elmiracityschools.com]
Sent: Monday, March 30, 2015 3:01 PM
To: Joseph Bilek; Amanda Castignetti
Subject: FW: Todays meeting

FYI Please add to the ACR as the DOH response to cracks.

Thank you,
Mike Dunn
Director of Facilities III
Elmira City School District
733 Benjamin Street
Elmira, NY 14901

Phone: 607-735-3980
Fax: 607-735-3979

From: Hettrick, Dawn (HEALTH) [mailto:dawn.hettrick@health.ny.gov]
Sent: Monday, March 30, 2015 2:36 PM
To: Mike Dunn
Cc: Deming, Justin (HEALTH)
Subject: FW: Todays meeting

Mike,

Per our conversation:

Superficial cracks that are cosmetic and affect the surface of the foundation's floor are not a concern. Substantial cracks that may compromise the foundation slab and may permit soil vapor intrusion should be sealed.

Hopefully this clarifies our concerns. Let me know if you have any other questions or there are any specific examples that you have additional questions about.

Dawn Hettrick, P.E.
Public Health Engineer
New York State Department of Health

Bureau of Environmental Exposure Investigation
Empire State Plaza - Corning Tower Room 1787
Albany, NY 12237
(518) 402-7860

Please change your address book. My new email address: dawn.hettrick@health.ny.gov

From: Doroski, Melissa (HEALTH)
Sent: Monday, March 30, 2015 10:36 AM
To: Hettrick, Dawn (HEALTH); Deming, Justin (HEALTH)
Subject: FW: Todays meeting

FYI

Melissa A. Doroski, MPH
Public Health Specialist
Bureau of Environmental Exposure Investigation
New York State Department of Health
Empire State Plaza - Corning Tower Room #1787
Albany, NY 12237
Phone: 518.402.7860 Fax: 518.402.7859
Email: melissa.doroski@health.ny.gov

From: Mike Dunn [mailto:mdunn@elmiracityschools.com]
Sent: Friday, March 27, 2015 1:42 PM
To: Doroski, Melissa (HEALTH)
Subject: RE: Todays meeting

Good Afternoon Melissa,
Just following up from my last e-mail regarding the DOH protocol for crack management for Elmira High School (formerly Elmira Southside High). I have received our 2014 ACR from Sterling Environmental and I would like to include the requested material in the report. Your assistance in this matter would be greatly appreciated.

Thank you,
Mike Dunn
Director of Facilities III
Elmira City School District
733 Benjamin Street
Elmira, NY 14901

Phone: 607-735-3980
Fax: 607-735-3979

From: Doroski, Melissa (HEALTH) [mailto:melissa.doroski@health.ny.gov]
Sent: Wednesday, July 09, 2014 2:42 PM
To: Mike Dunn
Cc: taschnei@gw.dec.state.ny.us; Deming, Justin (HEALTH); cthurnau@mail.nysed.gov; Hettrick, Dawn (HEALTH)
Subject: RE: Todays meeting

Mr. Dunn,

Thank you for the email and your contact information. It was a pleasure speaking with you yesterday. I will follow up in a separate email regarding your question about our protocol for repairing cracks in the slab. I will also work to address your concerns you brought up about the apparent miscommunication there is on the current operation of the HVAC system with respect to the environmental management plan. Please don't hesitate to contact me with any additional questions.

Thanks, Melissa

Melissa A. Doroski, MPH
Public Health Specialist
Bureau of Environmental Exposure Investigation
New York State Department of Health
Empire State Plaza - Corning Tower Room #1787
Albany, NY 12237
Phone: 518.402.7860 Fax: 518.402.7859
Email: melissa.doroski@health.ny.gov

From: Mike Dunn [mailto:mdunn@elmiracityschools.com]
Sent: Tuesday, July 08, 2014 3:20 PM
To: Doroski, Melissa (HEALTH)
Subject: Todays meeting

Melissa,
It was a pleasure to meet you and your associates at Elmira High School. Thank you for taking the time to discuss the cracks and other issues. Here is my contact information feel free to contact me anytime.
Look forward to hearing from you regarding the protocol for crack repairs. Michael J. Dunn, Elmira City School District, Director of Facilities III, 6077353980, mdunn@elmiracityschools.com

Thank you,
Mike Dunn
Supervisor of Buildings & Grounds
Elmira City School District
733 Benjamin Street
Elmira, NY 14901

Phone: 607-735-3980
Fax: 607-735-3979

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Total Control Panel Login

To: amanda.castignetti@sterlingenvironmental.com Remove this sender from my allow list

From: mdunn@elmiracityschools.com

You received this message because the sender is on your allow list.

ATTACHMENT 8

2017 CAPITAL IMPROVEMENT REPORT

ATTACHMENT 9

LIGHT POLE BORINGS
LABORATORY ANALYTICAL RESULTS
(PROVIDED ON CD)

www.alphalab.com

Alpha Analytical

Laboratory Code: 11148

SDG Number: L1714714

Table of Contents

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1714714-01	T-2 (6.0-10.0)	SOIL	ELMIRA HIGH SCHOOL	05/05/17 14:45	05/05/17
L1714714-02	T-2 (20.0-24.0)	SOIL	ELMIRA HIGH SCHOOL	05/05/17 15:30	05/05/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Cyanide, Total

L1714714-02: The sample has an elevated detection limit due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps Melissa Cripps

Report Date: 05/12/17

Title: Technical Director/Representative

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Volatile Organics Instruments

Volatile Organics:
Instrument: Agilent 5975MSD (or equivalent)
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)
Purge time: 11 min

Columns (length x ID x df):
RTX-VMS 20m x 0.18mm x 1um
RTX-VMS 30m x 0.25mm x 1.4um
RTX-502.2 40m x 0.18mm x 1um

Volatile Organics: VPH
Instrument: Agilent 6890 (or equivalent)
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 um
ID: 0.53mm

Volatile Organics: PIANO
Instrument: Agilent 7890 GC/5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar Velocity / EST Encon
Autosampler: Varian Archon / EST Centurion
Purge time: 11 min

Column Type: DB-VRX
Column Length: 60 Meters
df: 1.40 um
ID: 0.25 mm
Desorb: 1 min

Volatile Organics in Air Instruments

Volatile Organics in Air:
Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE

Concentrator: Entech 7100A or 7200
Autosampler: Entech 7016CA or 7016D

Column Type: Restek RTX-1
Column Length: 60 Meters
df: 1.00 um
ID: 0.52 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-1701	df: 0.25
Column B: Restek RTX-5	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

EPH

Instrument: Agilent 6890N w/FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):
Instrument: Agilent 5973N / 5975 MSD — Injection volume: 1 ul
Column Type: ZB-5 — df: 0.25 um
Column Length: 60 Meters — ID: 0.25 mm

Semivolatile Organics (8270):
Instrument: Agilent 5973N / 5975 MSD — Injection volume: 2 ul
Column Type: ZB-Semivolatiles — df: 0.25 um
Column Length: 30 Meters — ID: 0.25 mm

Semivolatile Organics (8270 SIM):
Instrument: Agilent 5973N / 5975 MSD — Injection volume: 3 ul
Column Type: ZB-5 — df: 0.25 um
Column Length: 30 Meters — ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):
Instrument: Agilent 5973N / 5975 / 5977 MSD — Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB — df: 0.25um, 0.18 um
Column Length: 60 Meters — ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):
Instrument: Agilent 5973N / 5975 MSD — Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB — df: 0.25um, 0.18 um
Column Length: 60 Meters — ID: 0.25um, 0.18 mm

Semivolatile Organics (ECD):
Instrument: Agilent 6890 / 7890 — Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II — df: 0.25 um
Column Length: 60 Meters — ID: 0.25 mm

Semivolatile Organics (SHC Extractables):
Instrument: Agilent 6890 — Injection volume: 1 ul
Column Type: RTX-5 — df: 0.25 um
Column Length: 60 Meters — ID: 0.25 mm

Sample **D**elivery **G**roup Form

Laboratory Job number: L1714714

Project Manager: Candace Fox **Review Date:** 05/08/2017

Project Number: 28014

Project Name: ELMIRA CSD **Received:** 05/05/2017 20:20

Client Account: Sterling Environmental Eng **Received by:** RR

Samples Delivered by: COURIER **Call Tracker #**

Bill Of Laden N/A **Trackingnum**

Coc Present Present

Container Status Intact **Sample IDs**

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt N/A **Are samples Properly Preserved?** Yes

Initial pH **preserved in house with** **Final pH**

Other Issues

Chlorine Check N/A

Are VOA/VPH Vials Present? Yes

Aqueous: Do Vials Contain Head Space? N/A

Soils: Is MeOHCovering the Soil? Yes

Reagent H2O Preserved vials Frozen on 05/06/17 06:04

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
A	Absent	Yes	No	3.3 - IR Gun	No	No

```
                    ALPHA ANALYTICAL LABORATORIES, INC.
                       LOGIN CHAIN OF CUSTODY REPORT
                          May 12 2017, 04:44 pm

                          Login Number: L1714714
           Account: STERLINGENV  Sterling Environmental EngProject: 28014
                      Received: 05MAY17     Due Date: 12MAY17
Sample #    Client ID          Mat PR Collected     Container

L1714714-01 T-2 (6.0-10.0)       3 S0 05MAY17 14:45 1-Glass-A.120,1-Glass-A.5,1-Glass-AM.06,1-Plastic-A-TS,1-Vial-F,2-Vial-W
8151: Report List Built (Part 375) 8081: Report List Built (Part 375) 8270: Report List Built (Part
375) 8260: Report List Built (Part 375) ASP-A Package Due Date: 05/12/17

ASP-A,HERB-APA,NY-PART375METALS,AG-TI,AS-TI,BA-TI,BE-TI,CD-TI,CR-TI,CU-TI,HEXCR-7196,HG-T,MN-TI,NI-
TI,PB-TI,PREPT,SE-TI,TCN-9010,TRICR-CALC,TS,ZN-TI,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270

L1714714-02 T-2 (20.0-24.0)      3 S0 05MAY17 15:30 1-Glass-A.120,1-Glass-A.5,1-Glass-AM.06,1-Plastic-A-TS,1-Vial-F,2-Vial-W
8260: Report List Built (Part 375) 8270: Report List Built (Part 375) 8081: Report List Built (Part
375) 8151: Report List Built (Part 375)  Package Due Date: 05/12/17

HERB-APA,NY-PART375METALS,AG-TI,AS-TI,BA-TI,BE-TI,CD-TI,CR-TI,CU-TI,HEXCR-7196,HG-T,MN-TI,NI-TI,PB-
TI,PREPT,SE-TI,TCN-9010,TRICR-CALC,TS,ZN-TI,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270

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                          Logged By: Candace Fox
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ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 5/6/17

ALPHA Job # L1714714

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Elmira CSD
Project Location: ~~$~~ Elmira High School
Project # 28014
(Use Project name as Project #) ☐
Project Manager: Amanda Castignetti
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information

Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email: amanda.castignetti@sterlingenvir

Deliverables

☑ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☑ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☑ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

amanda.castignetti@sterlingenvironmental.com Part 375 Parameters

Please specify Metals or TAL.

Sample Filtration
☐ **Done**
☐ **Lab to do**
Preservation
☐ **Lab to do**
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	HEXCR	HERB-APA, TCN	NYTCL-8081,8082,8270	TRICR-CALC	Total Hg Total Metals	NYTCL-8260	NYTCL-8260	Total Solids	Sample Specific Comments	Total Bottles
14714 -01	T-2 (6.0-10.0)	5-5-17	14:45	Soil	JB	X	X	X	X	X	X	X	X		
02	T-2 (20.0-24.0)	5-5-17	15:30	Soil	JB	X	X	X	X	X	X	X	X		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	A	A	A	V	V	P
Preservative	A	A	A	A	A			A

Relinquished By:	Date/Time	Received By:	Date/Time
	5-5-17/20:22		5/5/17 2203
	5/5/17 22:03		5/6/17 [illegible]

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Form 1
VOA

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1714714**
Project Name	**: ELMIRA CSD**	**Project Number**	**: 28014**
Lab ID	**: L1714714-01**	**Date Collected**	**: 05/05/17 14:45**
Client ID	**: T-2 (6.0-10.0)**	**Date Received**	**: 05/05/17**
Sample Location	**: ELMIRA HIGH SCHOOL**	**Date Analyzed**	**: 05/11/17 14:01**
Sample Matrix	**: SOIL**	**Dilution Factor**	**: 1**
Analytical Method	**: 1,8260C**	**Analyst**	**: MV**
Lab File ID	**: V04170511B14**	**Instrument ID**	**: VOA104**
Sample Amount	**: 5.3 g**	**GC Column**	**: RTX-VMS**
Level	**: LOW**	**%Solids**	**: 87**
Extract Volume (MeOH)	**: N/A**	**Injection Volume**	**: N/A**

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	11	1.8	U
75-34-3	1,1-Dichloroethane	ND	1.6	0.29	U
67-66-3	Chloroform	ND	1.6	0.40	U
56-23-5	Carbon tetrachloride	ND	1.1	0.38	U
127-18-4	Tetrachloroethene	ND	1.1	0.33	U
108-90-7	Chlorobenzene	ND	1.1	0.38	U
107-06-2	1,2-Dichloroethane	ND	1.1	0.27	U
71-55-6	1,1,1-Trichloroethane	ND	1.1	0.38	U
71-43-2	Benzene	0.23	1.1	0.21	J
108-88-3	Toluene	0.60	1.6	0.21	J
100-41-4	Ethylbenzene	ND	1.1	0.18	U
75-01-4	Vinyl chloride	ND	2.2	0.34	U
75-35-4	1,1-Dichloroethene	ND	1.1	0.40	U
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.26	U
79-01-6	Trichloroethene	ND	1.1	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.4	0.20	U
541-73-1	1,3-Dichlorobenzene	ND	5.4	0.24	U
106-46-7	1,4-Dichlorobenzene	ND	5.4	0.20	U
1634-04-4	Methyl tert butyl ether	ND	2.2	0.17	U
179601-23-1	p/m-Xylene	0.46	2.2	0.38	J
95-47-6	o-Xylene	ND	2.2	0.37	U
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.37	U
67-64-1	Acetone	2.6	11	2.5	J
78-93-3	2-Butanone	ND	11	0.75	U
104-51-8	n-Butylbenzene	ND	1.1	0.25	U
135-98-8	sec-Butylbenzene	ND	1.1	0.24	U
98-06-6	tert-Butylbenzene	ND	5.4	0.27	U

Form 1
VOA

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/11/17 14:01
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: MV
Lab File ID	: V04170511B14	**Instrument ID**	: VOA104
Sample Amount	: 5.3 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 87
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
103-65-1	n-Propylbenzene	ND	1.1	0.23	U
108-67-8	1,3,5-Trimethylbenzene	ND	5.4	0.18	U
95-63-6	1,2,4-Trimethylbenzene	ND	5.4	0.20	U
123-91-1	1,4-Dioxane	ND	44	16.	U

Form 1
VOA

Client : Sterling Environmental Eng
Project Name : ELMIRA CSD
Lab ID : L1714714-02
Client ID : T-2 (20.0-24.0)
Sample Location : ELMIRA HIGH SCHOOL
Sample Matrix : SOIL
Analytical Method : 1,8260C
Lab File ID : V04170511B15
Sample Amount : 7.4 g
Level : LOW
Extract Volume (MeOH) : N/A

Lab Number : L1714714
Project Number : 28014
Date Collected : 05/05/17 15:30
Date Received : 05/05/17
Date Analyzed : 05/11/17 14:27
Dilution Factor : 1
Analyst : MV
Instrument ID : VOA104
GC Column : RTX-VMS
%Solids : 89
Injection Volume : N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	7.6	1.2	U
75-34-3	1,1-Dichloroethane	ND	1.1	0.20	U
67-66-3	Chloroform	ND	1.1	0.28	U
56-23-5	Carbon tetrachloride	ND	0.76	0.26	U
127-18-4	Tetrachloroethene	0.29	0.76	0.23	J
108-90-7	Chlorobenzene	ND	0.76	0.26	U
107-06-2	1,2-Dichloroethane	ND	0.76	0.18	U
71-55-6	1,1,1-Trichloroethane	ND	0.76	0.26	U
71-43-2	Benzene	1.3	0.76	0.14	
108-88-3	Toluene	2.9	1.1	0.15	
100-41-4	Ethylbenzene	0.25	0.76	0.13	J
75-01-4	Vinyl chloride	ND	1.5	0.24	U
75-35-4	1,1-Dichloroethene	ND	0.76	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.18	U
79-01-6	Trichloroethene	ND	0.76	0.23	U
95-50-1	1,2-Dichlorobenzene	ND	3.8	0.14	U
541-73-1	1,3-Dichlorobenzene	ND	3.8	0.16	U
106-46-7	1,4-Dichlorobenzene	ND	3.8	0.14	U
1634-04-4	Methyl tert butyl ether	ND	1.5	0.12	U
179601-23-1	p/m-Xylene	2.3	1.5	0.26	
95-47-6	o-Xylene	0.66	1.5	0.26	J
156-59-2	cis-1,2-Dichloroethene	ND	0.76	0.26	U
67-64-1	Acetone	2.3	7.6	1.7	J
78-93-3	2-Butanone	ND	7.6	0.52	U
104-51-8	n-Butylbenzene	ND	0.76	0.17	U
135-98-8	sec-Butylbenzene	ND	0.76	0.16	U
98-06-6	tert-Butylbenzene	ND	3.8	0.19	U

Form 1
VOA

Client	:	**Sterling Environmental Eng**	**Lab Number**	:	**L1714714**
Project Name	:	**ELMIRA CSD**	**Project Number**	:	**28014**
Lab ID	:	**L1714714-02**	**Date Collected**	:	**05/05/17 15:30**
Client ID	:	**T-2 (20.0-24.0)**	**Date Received**	:	**05/05/17**
Sample Location	:	**ELMIRA HIGH SCHOOL**	**Date Analyzed**	:	**05/11/17 14:27**
Sample Matrix	:	**SOIL**	**Dilution Factor**	:	**1**
Analytical Method	:	**1,8260C**	**Analyst**	:	**MV**
Lab File ID	:	**V04170511B15**	**Instrument ID**	:	**VOA104**
Sample Amount	:	**7.4 g**	**GC Column**	:	**RTX-VMS**
Level	:	**LOW**	**%Solids**	:	**89**
Extract Volume (MeOH)	:	**N/A**	**Injection Volume**	:	**N/A**

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
103-65-1	n-Propylbenzene	ND	0.76	0.16	U
108-67-8	1,3,5-Trimethylbenzene	0.44	3.8	0.12	J
95-63-6	1,2,4-Trimethylbenzene	0.76	3.8	0.14	J
123-91-1	1,4-Dioxane	ND	30	11.	U

Form 1
VOA

Client	: Sterling Environmental Eng	Lab Number	: L1714714
Project Name	: ELMIRA CSD	Project Number	: 28014
Lab ID	: WG1002825-5	Date Collected	: NA
Client ID	: WG1002825-5BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 05/11/17 10:05
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: MV
Lab File ID	: V04170511B05	Instrument ID	: VOA104
Sample Amount	: 5.0 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: NA
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	10	1.6	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.27	U
67-66-3	Chloroform	ND	1.5	0.37	U
56-23-5	Carbon tetrachloride	ND	1.0	0.34	U
127-18-4	Tetrachloroethene	ND	1.0	0.30	U
108-90-7	Chlorobenzene	ND	1.0	0.35	U
107-06-2	1,2-Dichloroethane	ND	1.0	0.25	U
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.19	U
108-88-3	Toluene	ND	1.5	0.20	U
100-41-4	Ethylbenzene	ND	1.0	0.17	U
75-01-4	Vinyl chloride	ND	2.0	0.32	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.37	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.24	U
79-01-6	Trichloroethene	ND	1.0	0.30	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.18	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.22	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.18	U
1634-04-4	Methyl tert butyl ether	ND	2.0	0.15	U
179601-23-1	p/m-Xylene	ND	2.0	0.35	U
95-47-6	o-Xylene	ND	2.0	0.34	U
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.34	U
67-64-1	Acetone	ND	10	2.3	U
78-93-3	2-Butanone	ND	10	0.69	U
104-51-8	n-Butylbenzene	ND	1.0	0.23	U
135-98-8	sec-Butylbenzene	ND	1.0	0.22	U
98-06-6	tert-Butylbenzene	ND	5.0	0.25	U

Form 1
VOA

Client	**: Sterling Environmental Eng**	**Lab Number**	**: L1714714**
Project Name	**: ELMIRA CSD**	**Project Number**	**: 28014**
Lab ID	**: WG1002825-5**	**Date Collected**	**: NA**
Client ID	**: WG1002825-5BLANK**	**Date Received**	**: NA**
Sample Location	**:**	**Date Analyzed**	**: 05/11/17 10:05**
Sample Matrix	**: SOIL**	**Dilution Factor**	**: 1**
Analytical Method	**: 1,8260C**	**Analyst**	**: MV**
Lab File ID	**: V04170511B05**	**Instrument ID**	**: VOA104**
Sample Amount	**: 5.0 g**	**GC Column**	**: RTX-VMS**
Level	**: LOW**	**%Solids**	**: NA**
Extract Volume (MeOH)	**: N/A**	**Injection Volume**	**: N/A**

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
103-65-1	n-Propylbenzene	ND	1.0	0.22	U
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.16	U
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.19	U
123-91-1	1,4-Dioxane	ND	40	14.	U

Semivolatiles Data- Method 8270D

Semivolatile Sample Data

Form 1
SemiVolatile Organics

Client	: Sterling Environmental Eng	Lab Number	: L1714714
Project Name	: ELMIRA CSD	Project Number	: 28014
Lab ID	: L1714714-01	Date Collected	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	Date Received	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	Date Analyzed	: 05/10/17 02:24
Sample Matrix	: SOIL	Date Extracted	: 05/07/17
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 14714-01	Analyst	: CB
Sample Amount	: 30.57 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 87
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	150	20.	U
118-74-1	Hexachlorobenzene	ND	110	21.	U
206-44-0	Fluoranthene	320	110	22.	
91-20-3	Naphthalene	90	190	23.	J
56-55-3	Benzo(a)anthracene	140	110	21.	
50-32-8	Benzo(a)pyrene	160	150	46.	
205-99-2	Benzo(b)fluoranthene	200	110	32.	
207-08-9	Benzo(k)fluoranthene	73	110	30.	J
218-01-9	Chrysene	130	110	20.	
208-96-8	Acenaphthylene	38	150	29.	J
120-12-7	Anthracene	66	110	37.	J
191-24-2	Benzo(ghi)perylene	120	150	22.	J
86-73-7	Fluorene	ND	190	18.	U
85-01-8	Phenanthrene	200	110	23.	
53-70-3	Dibenzo(a,h)anthracene	28	110	22.	J
193-39-5	Indeno(1,2,3-cd)pyrene	150	150	26.	
129-00-0	Pyrene	270	110	19.	
132-64-9	Dibenzofuran	24	190	18.	J
87-86-5	Pentachlorophenol	ND	150	42.	U
108-95-2	Phenol	ND	190	28.	U
95-48-7	2-Methylphenol	ND	190	29.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	270	30.	U

ALPHA ANALYTICAL

Form 1
SemiVolatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 00:43
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 14714-02	**Analyst**	: CB
Sample Amount	: 30.75 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	140	19.	U
118-74-1	Hexachlorobenzene	ND	110	20.	U
206-44-0	Fluoranthene	ND	110	21.	U
91-20-3	Naphthalene	ND	180	22.	U
56-55-3	Benzo(a)anthracene	ND	110	20.	U
50-32-8	Benzo(a)pyrene	ND	140	44.	U
205-99-2	Benzo(b)fluoranthene	ND	110	31.	U
207-08-9	Benzo(k)fluoranthene	ND	110	29.	U
218-01-9	Chrysene	ND	110	19.	U
208-96-8	Acenaphthylene	ND	140	28.	U
120-12-7	Anthracene	ND	110	35.	U
191-24-2	Benzo(ghi)perylene	ND	140	21.	U
86-73-7	Fluorene	ND	180	18.	U
85-01-8	Phenanthrene	ND	110	22.	U
53-70-3	Dibenzo(a,h)anthracene	ND	110	21.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	25.	U
129-00-0	Pyrene	ND	110	18.	U
132-64-9	Dibenzofuran	ND	180	17.	U
87-86-5	Pentachlorophenol	ND	140	40.	U
108-95-2	Phenol	ND	180	27.	U
95-48-7	2-Methylphenol	ND	180	28.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	260	28.	U

Form 1
SemiVolatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001106-1	**Date Collected**	: NA
Client ID	: WG1001106-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/08/17 23:06
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 1001106-1	**Analyst**	: CB
Sample Amount	: 30.52 g	**Instrument ID**	: JULIET
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	130	17.	U
118-74-1	Hexachlorobenzene	ND	98	18.	U
206-44-0	Fluoranthene	ND	98	19.	U
91-20-3	Naphthalene	ND	160	20.	U
56-55-3	Benzo(a)anthracene	ND	98	18.	U
50-32-8	Benzo(a)pyrene	ND	130	40.	U
205-99-2	Benzo(b)fluoranthene	ND	98	28.	U
207-08-9	Benzo(k)fluoranthene	ND	98	26.	U
218-01-9	Chrysene	ND	98	17.	U
208-96-8	Acenaphthylene	ND	130	25.	U
120-12-7	Anthracene	ND	98	32.	U
191-24-2	Benzo(ghi)perylene	ND	130	19.	U
86-73-7	Fluorene	ND	160	16.	U
85-01-8	Phenanthrene	ND	98	20.	U
53-70-3	Dibenzo(a,h)anthracene	ND	98	19.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	130	23.	U
129-00-0	Pyrene	ND	98	16.	U
132-64-9	Dibenzofuran	ND	160	15.	U
87-86-5	Pentachlorophenol	ND	130	36.	U
108-95-2	Phenol	ND	160	25.	U
95-48-7	2-Methylphenol	ND	160	25.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	240	26.	U

Tentatively Identified Compounds
SemiVolatile Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001106-1	**Date Collected**	: NA
Client ID	: WG1001106-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/08/17 23:06
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 1001106-1	**Analyst**	: CB
Sample Amount	: 30.52 g	**Instrument ID**	: JULIET
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL

Number TICS found: 0

Concentration Units: ug/Kg

CAS Number	Compound Name	RT	EST. CONC.	Qualifier
	NO TENTATIVELY IDENTIFIED COMPOUNDS			

GC Extractable Analysis Polychlorinated Biphenyls (PCB)

Aroclor Sample Data

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/11/17 07:56
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19170511a-43	**Analyst**	: JA
Sample Amount	: 15.07 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 5000 uL	**%Solids**	: 87
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	38.3	3.03	U
11104-28-2	Aroclor 1221	ND	38.3	3.53	U
11141-16-5	Aroclor 1232	ND	38.3	4.49	U
53469-21-9	Aroclor 1242	ND	38.3	4.69	U
12672-29-6	Aroclor 1248	ND	38.3	3.23	U
11097-69-1	Aroclor 1254	ND	38.3	3.15	U
11096-82-5	Aroclor 1260	ND	38.3	2.92	U
37324-23-5	Aroclor 1262	ND	38.3	1.90	U
11100-14-4	Aroclor 1268	ND	38.3	5.56	U
1336-36-3	PCBs, Total	ND	38.3	1.90	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/11/17 08:09
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19170511a-44	**Analyst**	: JA
Sample Amount	: 15.22 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 5000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
12674-11-2	Aroclor 1016	ND	36.7	2.90	U
11104-28-2	Aroclor 1221	ND	36.7	3.39	U
11141-16-5	Aroclor 1232	ND	36.7	4.31	U
53469-21-9	Aroclor 1242	ND	36.7	4.50	U
12672-29-6	Aroclor 1248	ND	36.7	3.10	U
11097-69-1	Aroclor 1254	ND	36.7	3.02	U
11096-82-5	Aroclor 1260	ND	36.7	2.80	U
37324-23-5	Aroclor 1262	ND	36.7	1.82	U
11100-14-4	Aroclor 1268	ND	36.7	5.33	U
1336-36-3	PCBs, Total	ND	36.7	1.82	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001097-1	**Date Collected**	: NA
Client ID	: WG1001097-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/11/17 03:24
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19170511a-21	**Analyst**	: HT
Sample Amount	: 15.48 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 5000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
12674-11-2	Aroclor 1016	ND	32.3	2.55	U
11104-28-2	Aroclor 1221	ND	32.3	2.98	U
11141-16-5	Aroclor 1232	ND	32.3	3.78	U
53469-21-9	Aroclor 1242	ND	32.3	3.95	U
12672-29-6	Aroclor 1248	ND	32.3	2.73	U
11097-69-1	Aroclor 1254	ND	32.3	2.66	U
11096-82-5	Aroclor 1260	ND	32.3	2.46	U
37324-23-5	Aroclor 1262	ND	32.3	1.60	U
11100-14-4	Aroclor 1268	ND	32.3	4.68	U
1336-36-3	PCBs, Total	ND	32.3	1.60	U

GC Extractable Analysis
Pesticides

Pesticide Sample Data

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 11:12
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 11170510a-13	**Analyst**	: DM
Sample Amount	: 15.93 g	**Instrument ID**	: PEST11
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 10000 uL	**%Solids**	: 87
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.74	0.341	U
58-89-9	Lindane	ND	0.725	0.324	U
319-84-6	Alpha-BHC	ND	0.725	0.206	U
319-85-7	Beta-BHC	ND	1.74	0.660	U
76-44-8	Heptachlor	ND	0.870	0.390	U
309-00-2	Aldrin	ND	1.74	0.612	U
72-20-8	Endrin	ND	0.725	0.297	U
60-57-1	Dieldrin	ND	1.09	0.544	U
72-55-9	4,4'-DDE	ND	1.74	0.402	U
72-54-8	4,4'-DDD	ND	1.74	0.620	U
50-29-3	4,4'-DDT	ND	3.26	1.40	U
959-98-8	Endosulfan I	ND	1.74	0.411	U
33213-65-9	Endosulfan II	ND	1.74	0.581	U
1031-07-8	Endosulfan sulfate	ND	0.725	0.345	U
5103-71-9	cis-Chlordane	ND	2.17	0.606	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 11:44
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 11170510a-15	**Analyst**	: DM
Sample Amount	: 15.55 g	**Instrument ID**	: PEST11
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 10000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.73	0.338	U
58-89-9	Lindane	ND	0.719	0.322	U
319-84-6	Alpha-BHC	ND	0.719	0.204	U
319-85-7	Beta-BHC	ND	1.73	0.654	U
76-44-8	Heptachlor	ND	0.863	0.387	U
309-00-2	Aldrin	ND	1.73	0.608	U
72-20-8	Endrin	ND	0.719	0.295	U
60-57-1	Dieldrin	ND	1.08	0.540	U
72-55-9	4,4'-DDE	ND	1.73	0.399	U
72-54-8	4,4'-DDD	ND	1.73	0.616	U
50-29-3	4,4'-DDT	ND	3.24	1.39	U
959-98-8	Endosulfan I	ND	1.73	0.408	U
33213-65-9	Endosulfan II	ND	1.73	0.577	U
1031-07-8	Endosulfan sulfate	ND	0.719	0.342	U
5103-71-9	cis-Chlordane	ND	2.16	0.601	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001092-1	**Date Collected**	: NA
Client ID	: WG1001092-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/08/17 17:21
Sample Matrix	: SOIL	**Date Extracted**	: 05/07/17
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10170508a-05	**Analyst**	: KEG
Sample Amount	: 15.7 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 10000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.53	0.299	U
58-89-9	Lindane	ND	0.637	0.285	U
319-84-6	Alpha-BHC	ND	0.637	0.181	U
319-85-7	Beta-BHC	ND	1.53	0.580	U
76-44-8	Heptachlor	ND	0.764	0.343	U
309-00-2	Aldrin	ND	1.53	0.538	U
72-20-8	Endrin	ND	0.637	0.261	U
60-57-1	Dieldrin	ND	0.955	0.478	U
72-55-9	4,4'-DDE	ND	1.53	0.354	U
72-54-8	4,4'-DDD	ND	1.53	0.545	U
50-29-3	4,4'-DDT	ND	2.87	1.23	U
959-98-8	Endosulfan I	ND	1.53	0.361	U
33213-65-9	Endosulfan II	ND	1.53	0.511	U
1031-07-8	Endosulfan sulfate	ND	0.637	0.303	U
5103-71-9	cis-Chlordane	ND	1.91	0.532	U

GC Extractable Analysis
Herbicides

Herbicide Sample Data

Form 1
GC Organics

Client	:	Sterling Environmental Eng	**Lab Number**	:	L1714714
Project Name	:	ELMIRA CSD	**Project Number**	:	28014
Lab ID	:	L1714714-01	**Date Collected**	:	05/05/17 14:45
Client ID	:	T-2 (6.0-10.0)	**Date Received**	:	05/05/17
Sample Location	:	ELMIRA HIGH SCHOOL	**Date Analyzed**	:	05/10/17 17:15
Sample Matrix	:	SOIL	**Date Extracted**	:	05/08/17
Analytical Method	:	1,8151A	**Dilution Factor**	:	1
Lab File ID	:	17170510a-10	**Analyst**	:	SL
Sample Amount	:	30.11 g	**Instrument ID**	:	PEST17
Extraction Method	:	EPA 8151A	**GC Column**	:	STX-CLP1
Extract Volume	:	10000 uL	**%Solids**	:	87
GPC Cleanup	:	N	**Injection Volume**	:	1 uL
Sulfur Cleanup	:	N			

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
93-72-1	2,4,5-TP (Silvex)	ND	192	5.10	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 17:41
Sample Matrix	: SOIL	**Date Extracted**	: 05/08/17
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 17170510a-11	**Analyst**	: SL
Sample Amount	: 30.08 g	**Instrument ID**	: PEST17
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
93-72-1	2,4,5-TP (Silvex)	ND	186	4.94	U

Form 1
GC Organics

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001181-1	**Date Collected**	: NA
Client ID	: WG1001181-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/10/17 14:58
Sample Matrix	: SOIL	**Date Extracted**	: 05/08/17
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 17170510a-03	**Analyst**	: SL
Sample Amount	: 30.67 g	**Instrument ID**	: PEST17
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
93-72-1	2,4,5-TP (Silvex)	ND	163	4.34	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/09/17 19:50
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,6010C	**Analyst**	: PS
Lab File ID	: WG1001561.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 1.282g	**%Solids**	: 87
Digestion Method	: EPA 3050B	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7440-38-2	Arsenic, Total	3.3	0.45	0.09	
7440-39-3	Barium, Total	25	0.45	0.08	
7440-41-7	Beryllium, Total	0.11	0.22	0.02	J
7440-43-9	Cadmium, Total	0.05	0.45	0.04	J
7440-47-3	Chromium, Total	5.9	0.45	0.04	
7440-50-8	Copper, Total	23	0.45	0.12	
7439-92-1	Lead, Total	5.4	2.2	0.12	
7439-96-5	Manganese, Total	260	0.45	0.07	
7440-02-0	Nickel, Total	9.6	1.1	0.11	
7782-49-2	Selenium, Total	ND	0.90	0.12	U
7440-22-4	Silver, Total	ND	0.45	0.13	U
7440-66-6	Zinc, Total	78	2.2	0.13	

Form 1
METALS

Client	:	**Sterling Environmental Eng**	**Lab Number**	:	**L1714714**
Project Name	:	**ELMIRA CSD**	**Project Number**	:	**28014**
Lab ID	:	**L1714714-02**	**Date Collected**	:	**05/05/17 15:30**
Client ID	:	**T-2 (20.0-24.0)**	**Date Received**	:	**05/05/17**
Sample Location	:	**ELMIRA HIGH SCHOOL**	**Date Analyzed**	:	**05/09/17 19:54**
Sample Matrix	:	**SOIL**	**Dilution Factor**	:	**1**
Analytical Method	:	**1,6010C**	**Analyst**	:	**PS**
Lab File ID	:	**WG1001561.pdf**	**Instrument ID**	:	**TRACE7**
Sample Amount	:	**1.316g**	**%Solids**	:	**89**
Digestion Method	:	**EPA 3050B**	**Date Digested**	:	**05/09/17**

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7440-38-2	Arsenic, Total	3.8	0.42	0.09	
7440-39-3	Barium, Total	26	0.42	0.07	
7440-41-7	Beryllium, Total	0.07	0.21	0.01	J
7440-43-9	Cadmium, Total	ND	0.42	0.04	U
7440-47-3	Chromium, Total	5.2	0.42	0.04	
7440-50-8	Copper, Total	13	0.42	0.11	
7439-92-1	Lead, Total	4.4	2.1	0.11	
7439-96-5	Manganese, Total	220	0.42	0.07	
7440-02-0	Nickel, Total	6.9	1.1	0.10	
7782-49-2	Selenium, Total	ND	0.85	0.11	U
7440-22-4	Silver, Total	ND	0.42	0.12	U
7440-66-6	Zinc, Total	29	2.1	0.12	

Form 1
METALS

Client	:	**Sterling Environmental Eng**	**Lab Number**	:	**L1714714**
Project Name	:	**ELMIRA CSD**	**Project Number**	:	**28014**
Lab ID	:	**WG1001644-1**	**Date Collected**	:	**NA**
Client ID	:	**WG1001644-1BLANK**	**Date Received**	:	**NA**
Sample Location	:		**Date Analyzed**	:	**05/09/17 18:56**
Sample Matrix	:	**SOIL**	**Dilution Factor**	:	**1**
Analytical Method	:	**1,6010C**	**Analyst**	:	**PS**
Lab File ID	:	**WG1001561.pdf**	**Instrument ID**	:	**TRACE7**
Sample Amount	:	**1.25g**	**%Solids**	:	**NA**
Digestion Method	:	**EPA 3050B**	**Date Digested**	:	**05/09/17**

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7440-38-2	Arsenic, Total	0.10	0.40	0.08	J
7440-39-3	Barium, Total	ND	0.40	0.07	U
7440-41-7	Beryllium, Total	ND	0.20	0.01	U
7440-43-9	Cadmium, Total	ND	0.40	0.04	U
7440-47-3	Chromium, Total	ND	0.40	0.04	U
7440-50-8	Copper, Total	ND	0.40	0.10	U
7439-92-1	Lead, Total	ND	2.0	0.11	U
7439-96-5	Manganese, Total	ND	0.40	0.06	U
7440-02-0	Nickel, Total	ND	1.0	0.10	U
7782-49-2	Selenium, Total	ND	0.80	0.10	U
7440-22-4	Silver, Total	ND	0.40	0.11	U
7440-66-6	Zinc, Total	ND	2.0	0.12	U

Form 1
METALS

Client	:	**Sterling Environmental Eng**	**Lab Number**	:	**L1714714**
Project Name	:	**ELMIRA CSD**	**Project Number**	:	**28014**
Lab ID	:	**WG1001644-4**	**Date Collected**	:	**05/03/17 11:00**
Client ID	:	**WG1001644-4 DUP**	**Date Received**	:	**05/04/17**
Sample Location	:		**Date Analyzed**	:	**05/09/17 19:42**
Sample Matrix	:	**SOIL**	**Dilution Factor**	:	**1**
Analytical Method	:	**1,6010C**	**Analyst**	:	**PS**
Lab File ID	:	**WG1001561.pdf**	**Instrument ID**	:	**TRACE7**
Sample Amount	:	**1.275g**	**%Solids**	:	**79**
Digestion Method	:	**EPA 3050B**	**Date Digested**	:	**05/09/17**

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7440-38-2	Arsenic, Total	3.9	0.50	0.10	
7440-39-3	Barium, Total	91.	0.50	0.09	
7440-41-7	Beryllium, Total	0.31	0.25	0.02	
7440-43-9	Cadmium, Total	0.26	0.50	0.05	J
7440-47-3	Chromium, Total	90.	0.50	0.05	
7439-92-1	Lead, Total	330	2.5	0.13	
7440-02-0	Nickel, Total	8.3	1.2	0.12	
7782-49-2	Selenium, Total	0.41	1.0	0.13	J
7440-22-4	Silver, Total	ND	0.50	0.14	U

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 11:32
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: BV
Lab File ID	: Hg051017Acopy	**Instrument ID**	: FIMS4
Sample Amount	: 0.399g	**%Solids**	: 87
Digestion Method	: EPA 7471B	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, Total	ND	0.07	0.02	U

ALPHA ANALYTICAL

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 11:34
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: BV
Lab File ID	: Hg051017Acopy	**Instrument ID**	: FIMS4
Sample Amount	: 0.38g	**%Solids**	: 89
Digestion Method	: EPA 7471B	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.07	0.02	U

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001559-1	**Date Collected**	: NA
Client ID	: WG1001559-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/10/17 11:14
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: BV
Lab File ID	: Hg051017Acopy	**Instrument ID**	: FIMS4
Sample Amount	: 0.3g	**%Solids**	: NA
Digestion Method	: EPA 7471B	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.08	0.02	U

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001559-4	**Date Collected**	: 05/08/17 08:00
Client ID	: WG1001559-4 DUP	**Date Received**	: 05/08/17
Sample Location	:	**Date Analyzed**	: 05/10/17 11:25
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: BV
Lab File ID	: Hg051017Acopy	**Instrument ID**	: FIMS4
Sample Amount	: 0.397g	**%Solids**	: 81
Digestion Method	: EPA 7471B	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, Total	0.03	0.08	0.02	J

Wet Chemistry

Cyanide Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 14:51
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,9010C/9012B	**Analyst**	: LKRAS
Lab File ID	: 170510-C	**Instrument ID**	: LACHAT
Sample Amount	: 1.0628g	**%Solids**	: 87
Digestion Method	:	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
57-12-5	Cyanide, Total	ND	1.1	0.18	U

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 16:25
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,9010C/9012B	**Analyst**	: LKRAS
Lab File ID	: 170510-e1	**Instrument ID**	: LACHAT
Sample Amount	: 1.0916g	**%Solids**	: 89
Digestion Method	:	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
57-12-5	Cyanide, Total	ND	2.0	0.34	U

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1001778-1	**Date Collected**	: NA
Client ID	: WG1001778-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/10/17 14:37
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,9010C/9012B	**Analyst**	: LKRAS
Lab File ID	: 170510-C	**Instrument ID**	: LACHAT
Sample Amount	: 1.0258g	**%Solids**	: NA
Digestion Method	:	**Date Digested**	: 05/09/17

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
57-12-5	Cyanide, Total	ND	0.95	0.16	U

Hexavalent Chromium Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 20:08
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7196A	**Analyst**	: WR/NH
Lab File ID	: WG1002037.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	: 2.4659g	**%Solids**	: 87
Digestion Method	: EPA 3060A	**Date Digested**	: 05/10/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
18540-29-9	Chromium, Hexavalent	ND	0.92	0.18	U

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 20:08
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7196A	**Analyst**	: WR/NH
Lab File ID	: WG1002037.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	: 2.5095g	**%Solids**	: 89
Digestion Method	: EPA 3060A	**Date Digested**	: 05/10/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
18540-29-9	Chromium, Hexavalent	ND	0.89	0.18	U

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1002037-1	**Date Collected**	: NA
Client ID	: WG1002037-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 05/10/17 19:59
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7196A	**Analyst**	: WR/NH
Lab File ID	: WG1002037.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	: 2.4984g	**%Solids**	: NA
Digestion Method	: EPA 3060A	**Date Digested**	: 05/10/17

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
18540-29-9	Chromium, Hexavalent	ND	0.80	0.16	U

Form 1
WETCHEM

Client	:	Sterling Environmental Eng	**Lab Number**	:	L1714714
Project Name	:	ELMIRA CSD	**Project Number**	:	28014
Lab ID	:	WG1002037-6	**Date Collected**	:	05/05/17 14:45
Client ID	:	T-2 (6.0-10.0)DUP	**Date Received**	:	05/05/17
Sample Location	:		**Date Analyzed**	:	05/10/17 20:08
Sample Matrix	:	SOIL	**Dilution Factor**	:	1
Analytical Method	:	1,7196A	**Analyst**	:	WR/NH
Lab File ID	:	WG1002037.csv	**Instrument ID**	:	GENSYS10VI
Sample Amount	:	2.4843g	**%Solids**	:	87
Digestion Method	:	EPA 3060A	**Date Digested**	:	05/10/17

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
18540-29-9	Chromium, Hexavalent	ND	0.92	0.18	U

Trivalent Chromium Analysis

Results

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 20:08
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	:
Lab File ID	: --	**Instrument ID**	:
Sample Amount	:	**%Solids**	: 87
Digestion Method	:	**Date Digested**	:

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
16065-83-1	Chromium, Trivalent	5.9	0.92	0.92	

Form 1
METALS

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/10/17 20:08
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	:
Lab File ID	: --	**Instrument ID**	:
Sample Amount	:	**%Solids**	: 89
Digestion Method	:	**Date Digested**	:

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16065-83-1	Chromium, Trivalent	5.2	0.89	0.89	

Total Solids / Percent Moisture Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-01	**Date Collected**	: 05/05/17 14:45
Client ID	: T-2 (6.0-10.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/06/17 12:32
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1000999.pdf	**Instrument ID**	: BALANCE#29
Sample Amount	:	**%Solids**	: 87
Digestion Method	:	**Date Digested**	:

		%			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total	86.6	0.100	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: L1714714-02	**Date Collected**	: 05/05/17 15:30
Client ID	: T-2 (20.0-24.0)	**Date Received**	: 05/05/17
Sample Location	: ELMIRA HIGH SCHOOL	**Date Analyzed**	: 05/06/17 12:32
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1000999.pdf	**Instrument ID**	: BALANCE#29
Sample Amount	:	**%Solids**	: 89
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	% RL	% MDL	Qualifier
NONE	Solids, Total	89.4	0.100	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Eng	**Lab Number**	: L1714714
Project Name	: ELMIRA CSD	**Project Number**	: 28014
Lab ID	: WG1000999-1	**Date Collected**	: 05/05/17 02:10
Client ID	: WG1000999-1 DUP	**Date Received**	: 05/05/17
Sample Location	:	**Date Analyzed**	: 05/06/17 12:32
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1000999.pdf	**Instrument ID**	: BALANCE#29
Sample Amount	:	**%Solids**	: 92
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	% RL	% MDL	Qualifier
NONE	Solids, Total	93.0	0.100	NA	

ANALYTICAL REPORT

Lab Number:	L1715046
Client:	Sterling Environmental Eng 24 Wade Road Latham, NY 12110
ATTN:	Amanda Castignetti
Phone:	(518) 456-4900
Project Name:	ELMIRA CSD
Project Number:	28014
Report Date:	05/16/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1715046-01	C-1 (4.0-8.0)	SOIL	ELMIRA HIGH SCHOOL	05/09/17 10:30	05/09/17
L1715046-02	C-2 (4.0-6.0)	SOIL	ELMIRA HIGH SCHOOL	05/09/17 13:15	05/09/17
L1715046-03	C-2 (20-22.0)	SOIL	ELMIRA HIGH SCHOOL	05/09/17 14:00	05/09/17
L1715046-04	STOCKPILE-1	SOIL	ELMIRA HIGH SCHOOL	05/09/17 16:30	05/09/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Cyanide, Total

The WG1002197-2/-3 LCS/LCSD recoveries (60%/77%), associated with L1715046-01 through -04, are below our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps Melissa Cripps

Title: Technical Director/Representative Date: 05/16/17

ORGANICS

VOLATILES

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Matrix:	Soil
Analytical Method:	1,8260C
Analytical Date:	05/15/17 16:38
Analyst:	JC
Percent Solids:	88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	10	1.6	1
1,1-Dichloroethane	ND		ug/kg	1.5	0.27	1
Chloroform	ND		ug/kg	1.5	0.37	1
Carbon tetrachloride	ND		ug/kg	1.0	0.34	1
Tetrachloroethene	ND		ug/kg	1.0	0.30	1
Chlorobenzene	ND		ug/kg	1.0	0.35	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	1.0	0.35	1
Benzene	ND		ug/kg	1.0	0.19	1
Toluene	ND		ug/kg	1.5	0.20	1
Ethylbenzene	ND		ug/kg	1.0	0.17	1
Vinyl chloride	ND		ug/kg	2.0	0.32	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.37	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.24	1
Trichloroethene	ND		ug/kg	1.0	0.30	1
1,2-Dichlorobenzene	ND		ug/kg	5.0	0.18	1
1,3-Dichlorobenzene	ND		ug/kg	5.0	0.22	1
1,4-Dichlorobenzene	ND		ug/kg	5.0	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.15	1
p/m-Xylene	ND		ug/kg	2.0	0.35	1
o-Xylene	ND		ug/kg	2.0	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.34	1
Acetone	ND		ug/kg	10	2.3	1
2-Butanone	ND		ug/kg	10	0.69	1
n-Butylbenzene	ND		ug/kg	1.0	0.23	1
sec-Butylbenzene	ND		ug/kg	1.0	0.22	1
tert-Butylbenzene	ND		ug/kg	5.0	0.25	1
n-Propylbenzene	ND		ug/kg	1.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	0.16	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	0.19	1

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by 8260/5035 - Westborough Lab						
1,4-Dioxane	ND		ug/kg	40	14.	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Matrix:	Soil
Analytical Method:	1,8260C
Analytical Date:	05/16/17 09:45
Analyst:	MV
Percent Solids:	87%

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	10	1.7	1
1,1-Dichloroethane	ND		ug/kg	1.6	0.28	1
Chloroform	ND		ug/kg	1.6	0.39	1
Carbon tetrachloride	ND		ug/kg	1.0	0.36	1
Tetrachloroethene	ND		ug/kg	1.0	0.32	1
Chlorobenzene	ND		ug/kg	1.0	0.36	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	1.0	0.37	1
Benzene	ND		ug/kg	1.0	0.20	1
Toluene	0.20	J	ug/kg	1.6	0.20	1
Ethylbenzene	ND		ug/kg	1.0	0.18	1
Vinyl chloride	ND		ug/kg	2.1	0.33	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.39	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.25	1
Trichloroethene	3.7		ug/kg	1.0	0.32	1
1,2-Dichlorobenzene	ND		ug/kg	5.2	0.19	1
1,3-Dichlorobenzene	ND		ug/kg	5.2	0.23	1
1,4-Dichlorobenzene	ND		ug/kg	5.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.16	1
p/m-Xylene	ND		ug/kg	2.1	0.37	1
o-Xylene	ND		ug/kg	2.1	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.36	1
Acetone	ND		ug/kg	10	2.4	1
2-Butanone	ND		ug/kg	10	0.72	1
n-Butylbenzene	ND		ug/kg	1.0	0.24	1
sec-Butylbenzene	ND		ug/kg	1.0	0.23	1
tert-Butylbenzene	ND		ug/kg	5.2	0.26	1
n-Propylbenzene	ND		ug/kg	1.0	0.22	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.2	0.17	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.2	0.20	1

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
1,4-Dioxane	ND		ug/kg	42	15.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	115		70-130

SAMPLE RESULTS

Lab ID: L1715046-03

Client ID: C-2 (20-22.0)

Sample Location: ELMIRA HIGH SCHOOL

Date Collected: 05/09/17 14:00

Date Received: 05/09/17

Field Prep: Not Specified

Matrix: Soil

Analytical Method: 1,8260C

Analytical Date: 05/16/17 10:12

Analyst: MV

Percent Solids: 87%

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	8.5	1.4	1
1,1-Dichloroethane	ND		ug/kg	1.3	0.23	1
Chloroform	ND		ug/kg	1.3	0.31	1
Carbon tetrachloride	ND		ug/kg	0.85	0.29	1
Tetrachloroethene	ND		ug/kg	0.85	0.26	1
Chlorobenzene	ND		ug/kg	0.85	0.30	1
1,2-Dichloroethane	ND		ug/kg	0.85	0.21	1
1,1,1-Trichloroethane	ND		ug/kg	0.85	0.30	1
Benzene	ND		ug/kg	0.85	0.16	1
Toluene	0.30	J	ug/kg	1.3	0.16	1
Ethylbenzene	ND		ug/kg	0.85	0.14	1
Vinyl chloride	ND		ug/kg	1.7	0.27	1
1,1-Dichloroethene	ND		ug/kg	0.85	0.32	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	0.20	1
Trichloroethene	0.35	J	ug/kg	0.85	0.26	1
1,2-Dichlorobenzene	ND		ug/kg	4.2	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	4.2	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	4.2	0.15	1
Methyl tert butyl ether	ND		ug/kg	1.7	0.13	1
p/m-Xylene	ND		ug/kg	1.7	0.30	1
o-Xylene	ND		ug/kg	1.7	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	0.85	0.29	1
Acetone	ND		ug/kg	8.5	1.9	1
2-Butanone	ND		ug/kg	8.5	0.58	1
n-Butylbenzene	ND		ug/kg	0.85	0.19	1
sec-Butylbenzene	ND		ug/kg	0.85	0.18	1
tert-Butylbenzene	ND		ug/kg	4.2	0.21	1
n-Propylbenzene	ND		ug/kg	0.85	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.2	0.14	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.2	0.16	1

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
1,4-Dioxane	ND		ug/kg	34	12.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	112		70-130

SAMPLE RESULTS

Lab ID:	L1715046-04	Date Collected:	05/09/17 16:30
Client ID:	STOCKPILE-1	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/15/17 17:31
Analyst: JC
Percent Solids: 88%

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	7.3	1.2	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.20	1
Chloroform	ND		ug/kg	1.1	0.27	1
Carbon tetrachloride	ND		ug/kg	0.73	0.25	1
Tetrachloroethene	ND		ug/kg	0.73	0.22	1
Chlorobenzene	ND		ug/kg	0.73	0.25	1
1,2-Dichloroethane	ND		ug/kg	0.73	0.18	1
1,1,1-Trichloroethane	ND		ug/kg	0.73	0.26	1
Benzene	ND		ug/kg	0.73	0.14	1
Toluene	0.31	J	ug/kg	1.1	0.14	1
Ethylbenzene	ND		ug/kg	0.73	0.12	1
Vinyl chloride	ND		ug/kg	1.5	0.23	1
1,1-Dichloroethene	ND		ug/kg	0.73	0.27	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	0.18	1
Trichloroethene	ND		ug/kg	0.73	0.22	1
1,2-Dichlorobenzene	ND		ug/kg	3.6	0.13	1
1,3-Dichlorobenzene	ND		ug/kg	3.6	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	3.6	0.13	1
Methyl tert butyl ether	ND		ug/kg	1.5	0.11	1
p/m-Xylene	ND		ug/kg	1.5	0.26	1
o-Xylene	ND		ug/kg	1.5	0.25	1
cis-1,2-Dichloroethene	ND		ug/kg	0.73	0.25	1
Acetone	24		ug/kg	7.3	1.7	1
2-Butanone	ND		ug/kg	7.3	0.50	1
n-Butylbenzene	ND		ug/kg	0.73	0.17	1
sec-Butylbenzene	ND		ug/kg	0.73	0.16	1
tert-Butylbenzene	ND		ug/kg	3.6	0.18	1
n-Propylbenzene	ND		ug/kg	0.73	0.16	1
1,3,5-Trimethylbenzene	0.19	J	ug/kg	3.6	0.12	1
1,2,4-Trimethylbenzene	0.27	J	ug/kg	3.6	0.14	1

SAMPLE RESULTS

Lab ID:	L1715046-04	Date Collected:	05/09/17 16:30
Client ID:	STOCKPILE-1	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by 8260/5035 - Westborough Lab						
1,4-Dioxane	ND		ug/kg	29	10.	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	111		70-130

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/15/17 09:12
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,04 Batch: WG1003810-5					
Methylene chloride	ND		ug/kg	10	1.6
1,1-Dichloroethane	ND		ug/kg	1.5	0.27
Chloroform	ND		ug/kg	1.5	0.37
Carbon tetrachloride	ND		ug/kg	1.0	0.34
Tetrachloroethene	ND		ug/kg	1.0	0.30
Chlorobenzene	ND		ug/kg	1.0	0.35
1,2-Dichloroethane	ND		ug/kg	1.0	0.25
1,1,1-Trichloroethane	ND		ug/kg	1.0	0.35
Benzene	ND		ug/kg	1.0	0.19
Toluene	ND		ug/kg	1.5	0.20
Ethylbenzene	ND		ug/kg	1.0	0.17
Vinyl chloride	ND		ug/kg	2.0	0.32
1,1-Dichloroethene	ND		ug/kg	1.0	0.37
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.24
Trichloroethene	ND		ug/kg	1.0	0.30
1,2-Dichlorobenzene	ND		ug/kg	5.0	0.18
1,3-Dichlorobenzene	ND		ug/kg	5.0	0.22
1,4-Dichlorobenzene	ND		ug/kg	5.0	0.18
Methyl tert butyl ether	ND		ug/kg	2.0	0.15
p/m-Xylene	ND		ug/kg	2.0	0.35
o-Xylene	ND		ug/kg	2.0	0.34
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.34
Acetone	2.8	J	ug/kg	10	2.3
2-Butanone	ND		ug/kg	10	0.69
n-Butylbenzene	ND		ug/kg	1.0	0.23
sec-Butylbenzene	ND		ug/kg	1.0	0.22
tert-Butylbenzene	ND		ug/kg	5.0	0.25
n-Propylbenzene	ND		ug/kg	1.0	0.22
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	0.16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/15/17 09:12
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,04 Batch: WG1003810-5					
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	0.19
1,4-Dioxane	ND		ug/kg	40	14.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/16/17 09:18
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02-03 Batch: WG1003888-5					
Methylene chloride	ND		ug/kg	10	1.6
1,1-Dichloroethane	ND		ug/kg	1.5	0.27
Chloroform	ND		ug/kg	1.5	0.37
Carbon tetrachloride	ND		ug/kg	1.0	0.34
Tetrachloroethene	ND		ug/kg	1.0	0.30
Chlorobenzene	ND		ug/kg	1.0	0.35
1,2-Dichloroethane	ND		ug/kg	1.0	0.25
1,1,1-Trichloroethane	ND		ug/kg	1.0	0.35
Benzene	ND		ug/kg	1.0	0.19
Toluene	ND		ug/kg	1.5	0.20
Ethylbenzene	ND		ug/kg	1.0	0.17
Vinyl chloride	ND		ug/kg	2.0	0.32
1,1-Dichloroethene	ND		ug/kg	1.0	0.37
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.24
Trichloroethene	ND		ug/kg	1.0	0.30
1,2-Dichlorobenzene	ND		ug/kg	5.0	0.18
1,3-Dichlorobenzene	ND		ug/kg	5.0	0.22
1,4-Dichlorobenzene	ND		ug/kg	5.0	0.18
Methyl tert butyl ether	ND		ug/kg	2.0	0.15
p/m-Xylene	ND		ug/kg	2.0	0.35
o-Xylene	ND		ug/kg	2.0	0.34
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.34
Acetone	ND		ug/kg	10	2.3
2-Butanone	ND		ug/kg	10	0.69
n-Butylbenzene	ND		ug/kg	1.0	0.23
sec-Butylbenzene	ND		ug/kg	1.0	0.22
tert-Butylbenzene	ND		ug/kg	5.0	0.25
n-Propylbenzene	ND		ug/kg	1.0	0.22
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	0.16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/16/17 09:18
Analyst: CBN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02-03 Batch: WG1003888-5					
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	0.19
1,4-Dioxane	ND		ug/kg	40	14.
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	113		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,04 Batch: WG1003810-3 WG1003810-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Methylene chloride	102		105		70-130	3		30
1,1-Dichloroethane	109		111		70-130	2		30
Chloroform	107		109		70-130	2		30
Carbon tetrachloride	108		109		70-130	1		30
Tetrachloroethene	89		89		70-130	0		30
Chlorobenzene	89		90		70-130	1		30
1,2-Dichloroethane	106		109		70-130	3		30
1,1,1-Trichloroethane	107		110		70-130	3		30
Benzene	110		111		70-130	1		30
Toluene	89		92		70-130	3		30
Ethylbenzene	92		93		70-130	1		30
Vinyl chloride	114		118		67-130	3		30
1,1-Dichloroethene	100		104		65-135	4		30
trans-1,2-Dichloroethene	108		109		70-130	1		30
Trichloroethene	106		111		70-130	5		30
1,2-Dichlorobenzene	80		79		70-130	1		30
1,3-Dichlorobenzene	81		78		70-130	4		30
1,4-Dichlorobenzene	86		85		70-130	1		30
Methyl tert butyl ether	101		103		66-130	2		30
p/m-Xylene	93		93		70-130	0		30
o-Xylene	92		92		70-130	0		30
cis-1,2-Dichloroethene	106		107		70-130	1		30
Acetone	123		138		54-140	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Lab Number: L1715046
Project Number: 28014
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,04 Batch: WG1003810-3 WG1003810-4								
2-Butanone	106		110		70-130	4		30
n-Butylbenzene	92		92		70-130	0		30
sec-Butylbenzene	88		87		70-130	1		30
tert-Butylbenzene	87		85		70-130	2		30
n-Propylbenzene	90		89		70-130	1		30
1,3,5-Trimethylbenzene	87		86		70-130	1		30
1,2,4-Trimethylbenzene	86		84		70-130	2		30
1,4-Dioxane	111		108		65-136	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	94		93		70-130
4-Bromofluorobenzene	104		102		70-130
Dibromofluoromethane	101		103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014
Lab Number: L1715046
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-03 Batch: WG1003888-3 WG1003888-4								
Methylene chloride	92		89		70-130	3		30
1,1-Dichloroethane	93		92		70-130	1		30
Chloroform	98		98		70-130	0		30
Carbon tetrachloride	107		104		70-130	3		30
Tetrachloroethene	94		91		70-130	3		30
Chlorobenzene	91		89		70-130	2		30
1,2-Dichloroethane	105		104		70-130	1		30
1,1,1-Trichloroethane	104		101		70-130	3		30
Benzene	92		90		70-130	2		30
Toluene	88		86		70-130	2		30
Ethylbenzene	92		90		70-130	2		30
Vinyl chloride	85		**55**	Q	67-130	**43**	Q	30
1,1-Dichloroethene	**155**	Q	**153**	Q	65-135	1		30
trans-1,2-Dichloroethene	93		91		70-130	2		30
Trichloroethene	98		95		70-130	3		30
1,2-Dichlorobenzene	89		87		70-130	2		30
1,3-Dichlorobenzene	88		86		70-130	2		30
1,4-Dichlorobenzene	88		84		70-130	5		30
Methyl tert butyl ether	98		98		66-130	0		30
p/m-Xylene	93		90		70-130	3		30
o-Xylene	94		92		70-130	2		30
cis-1,2-Dichloroethene	93		93		70-130	0		30
Acetone	84		86		54-140	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Lab Number: L1715046
Project Number: 28014
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-03 Batch: WG1003888-3 WG1003888-4								
2-Butanone	93		93		70-130	0		30
n-Butylbenzene	88		85		70-130	3		30
sec-Butylbenzene	88		86		70-130	2		30
tert-Butylbenzene	90		87		70-130	3		30
n-Propylbenzene	88		85		70-130	3		30
1,3,5-Trimethylbenzene	90		87		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30
1,4-Dioxane	88		88		65-136	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		109		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	106		107		70-130

SEMIVOLATILES

SAMPLE RESULTS

Lab ID: L1715046-01
Client ID: C-1 (4.0-8.0)
Sample Location: ELMIRA HIGH SCHOOL

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/11/17 21:48
Analyst: RC
Percent Solids: 88%

Date Collected: 05/09/17 10:30
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method:EPA 3546
Extraction Date: 05/10/17 23:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Fluoranthene	ND		ug/kg	110	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	19.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		25-120
Phenol-d6	53		10-120
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	55		30-120
2,4,6-Tribromophenol	60		10-136
4-Terphenyl-d14	50		18-120

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 23:44
Analytical Method:	1,8270D		
Analytical Date:	05/11/17 22:13		
Analyst:	RC		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	ND		ug/kg	120	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	150	47.	1
Benzo(b)fluoranthene	ND		ug/kg	120	32.	1
Benzo(k)fluoranthene	ND		ug/kg	120	31.	1
Chrysene	ND		ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	ND		ug/kg	120	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	23.	1
Fluorene	ND		ug/kg	190	19.	1
Phenanthrene	ND		ug/kg	120	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	27.	1
Pyrene	ND		ug/kg	120	19.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	30.	1

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		25-120
Phenol-d6	56		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	55		30-120
2,4,6-Tribromophenol	68		10-136
4-Terphenyl-d14	56		18-120

SAMPLE RESULTS

Lab ID: L1715046-03
Client ID: C-2 (20-22.0)
Sample Location: ELMIRA HIGH SCHOOL

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/11/17 22:39
Analyst: RC
Percent Solids: 87%

Date Collected: 05/09/17 14:00
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method:EPA 3546
Extraction Date: 05/10/17 23:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Fluoranthene	ND		ug/kg	110	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	19.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	64		25-120
Phenol-d6	67		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	64		30-120
2,4,6-Tribromophenol	66		10-136
4-Terphenyl-d14	49		18-120

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-04	Date Collected:	05/09/17 16:30
Client ID:	STOCKPILE-1	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 23:44
Analytical Method:	1,8270D		
Analytical Date:	05/12/17 04:12		
Analyst:	RC		
Percent Solids:	88%		

Semivolatile Organics by GC/MS - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Fluoranthene	37	J	ug/kg	110	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Benzo(a)anthracene	22	J	ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	28	J	ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	32	J	ug/kg	110	19.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1

SAMPLE RESULTS

Lab ID: L1715046-04
Client ID: STOCKPILE-1
Sample Location: ELMIRA HIGH SCHOOL
Date Collected: 05/09/17 16:30
Date Received: 05/09/17
Field Prep: Not Specified

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	81		25-120
Phenol-d6	83		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	87		10-136
4-Terphenyl-d14	70		18-120

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/11/17 17:31
Analyst: KV

Extraction Method: EPA 3546
Extraction Date: 05/10/17 23:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1002245-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	97	18.
Fluoranthene	ND		ug/kg	97	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	97	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	97	27.
Benzo(k)fluoranthene	ND		ug/kg	97	26.
Chrysene	ND		ug/kg	97	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	97	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	97	20.
Dibenzo(a,h)anthracene	ND		ug/kg	97	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	22.
Pyrene	ND		ug/kg	97	16.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	24.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	25.

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/kg

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/11/17 17:31
Analyst: KV

Extraction Method: EPA 3546
Extraction Date: 05/10/17 23:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1002245-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		25-120
Phenol-d6	64		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	79		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1002245-2 WG1002245-3								
Acenaphthene	73		65		31-137	12		50
Hexachlorobenzene	90		79		40-140	13		50
Fluoranthene	76		68		40-140	11		50
Naphthalene	72		64		40-140	12		50
Benzo(a)anthracene	69		63		40-140	9		50
Benzo(a)pyrene	73		69		40-140	6		50
Benzo(b)fluoranthene	73		68		40-140	7		50
Benzo(k)fluoranthene	73		67		40-140	9		50
Chrysene	68		63		40-140	8		50
Acenaphthylene	79		70		40-140	12		50
Anthracene	71		64		40-140	10		50
Benzo(ghi)perylene	76		69		40-140	10		50
Fluorene	74		66		40-140	11		50
Phenanthrene	71		65		40-140	9		50
Dibenzo(a,h)anthracene	74		67		40-140	10		50
Indeno(1,2,3-cd)pyrene	77		69		40-140	11		50
Pyrene	74		68		35-142	8		50
Dibenzofuran	74		66		40-140	11		50
Pentachlorophenol	84		74		17-109	13		50
Phenol	65		59		26-90	10		50
2-Methylphenol	75		67		30-130.	11		50
3-Methylphenol/4-Methylphenol	74		67		30-130	10		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Lab Number: L1715046
Project Number: 28014
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1002245-2 WG1002245-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	72		63		25-120
Phenol-d6	73		66		10-120
Nitrobenzene-d5	73		68		23-120
2-Fluorobiphenyl	80		71		30-120
2,4,6-Tribromophenol	105		93		10-136
4-Terphenyl-d14	79		71		18-120

PCBS

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 22:29
Analytical Method:	1,8082A	Cleanup Method:	EPA 3665A
Analytical Date:	05/12/17 19:21	Cleanup Date:	05/11/17
Analyst:	JW	Cleanup Method:	EPA 3660B
Percent Solids:	88%	Cleanup Date:	05/11/17

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.6	2.97	1	A
Aroclor 1221	ND		ug/kg	37.6	3.47	1	A
Aroclor 1232	ND		ug/kg	37.6	4.41	1	A
Aroclor 1242	ND		ug/kg	37.6	4.60	1	A
Aroclor 1248	ND		ug/kg	37.6	3.18	1	A
Aroclor 1254	ND		ug/kg	37.6	3.09	1	A
Aroclor 1260	ND		ug/kg	37.6	2.87	1	A
Aroclor 1262	ND		ug/kg	37.6	1.86	1	A
Aroclor 1268	ND		ug/kg	37.6	5.45	1	A
PCBs, Total	ND		ug/kg	37.6	1.86	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	103		30-150	B

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 22:29
Analytical Method:	1,8082A	Cleanup Method:	EPA 3665A
Analytical Date:	05/12/17 19:33	Cleanup Date:	05/11/17
Analyst:	JW	Cleanup Method:	EPA 3660B
Percent Solids:	87%	Cleanup Date:	05/11/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.6	2.97	1	A
Aroclor 1221	ND		ug/kg	37.6	3.46	1	A
Aroclor 1232	ND		ug/kg	37.6	4.40	1	A
Aroclor 1242	ND		ug/kg	37.6	4.60	1	A
Aroclor 1248	ND		ug/kg	37.6	3.17	1	A
Aroclor 1254	ND		ug/kg	37.6	3.09	1	A
Aroclor 1260	ND		ug/kg	37.6	2.86	1	A
Aroclor 1262	ND		ug/kg	37.6	1.86	1	A
Aroclor 1268	ND		ug/kg	37.6	5.45	1	A
PCBs, Total	ND		ug/kg	37.6	1.86	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	80		30-150	B

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 22:29
Analytical Method:	1,8082A	Cleanup Method:	EPA 3665A
Analytical Date:	05/12/17 19:46	Cleanup Date:	05/11/17
Analyst:	JW	Cleanup Method:	EPA 3660B
Percent Solids:	87%	Cleanup Date:	05/11/17

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.6	2.89	1	A
Aroclor 1221	ND		ug/kg	36.6	3.38	1	A
Aroclor 1232	ND		ug/kg	36.6	4.29	1	A
Aroclor 1242	ND		ug/kg	36.6	4.48	1	A
Aroclor 1248	ND		ug/kg	36.6	3.09	1	A
Aroclor 1254	ND		ug/kg	36.6	3.01	1	A
Aroclor 1260	ND		ug/kg	36.6	2.79	1	A
Aroclor 1262	ND		ug/kg	36.6	1.82	1	A
Aroclor 1268	ND		ug/kg	36.6	5.31	1	A
PCBs, Total	ND		ug/kg	36.6	1.82	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	83		30-150	B

SAMPLE RESULTS

Lab ID: L1715046-04
Client ID: STOCKPILE-1
Sample Location: ELMIRA HIGH SCHOOL

Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/12/17 19:58
Analyst: JW
Percent Solids: 88%

Date Collected: 05/09/17 16:30
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method:EPA 3546
Extraction Date: 05/10/17 22:29
Cleanup Method: EPA 3665A
Cleanup Date: 05/11/17
Cleanup Method: EPA 3660B
Cleanup Date: 05/11/17

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.1	2.86	1	A
Aroclor 1221	ND		ug/kg	36.1	3.33	1	A
Aroclor 1232	ND		ug/kg	36.1	4.24	1	A
Aroclor 1242	ND		ug/kg	36.1	4.42	1	A
Aroclor 1248	6.20	J	ug/kg	36.1	3.05	1	B
Aroclor 1254	8.42	J	ug/kg	36.1	2.97	1	A
Aroclor 1260	ND		ug/kg	36.1	2.75	1	A
Aroclor 1262	ND		ug/kg	36.1	1.79	1	A
Aroclor 1268	ND		ug/kg	36.1	5.24	1	A
PCBs, Total	14.6	J	ug/kg	36.1	3.05	1	B

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	74		30-150	B

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 05/11/17 21:43
Analyst: AF

Extraction Method: EPA 3546
Extraction Date: 05/10/17 07:56
Cleanup Method: EPA 3665A
Cleanup Date: 05/10/17
Cleanup Method: EPA 3660B
Cleanup Date: 05/11/17

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Column**
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-04 Batch: WG1001950-1						
Aroclor 1016	ND		ug/kg	32.5	2.57	A
Aroclor 1221	ND		ug/kg	32.5	3.00	A
Aroclor 1232	ND		ug/kg	32.5	3.81	A
Aroclor 1242	ND		ug/kg	32.5	3.98	A
Aroclor 1248	ND		ug/kg	32.5	2.74	A
Aroclor 1254	ND		ug/kg	32.5	2.67	A
Aroclor 1260	ND		ug/kg	32.5	2.48	A
Aroclor 1262	ND		ug/kg	32.5	1.61	A
Aroclor 1268	ND		ug/kg	32.5	4.71	A
PCBs, Total	ND		ug/kg	32.5	1.61	A

Surrogate	**%Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	65		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1001950-2 WG1001950-3									
Aroclor 1016	68		74		40-140	8		50	A
Aroclor 1260	84		98		40-140	15		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		72		30-150	A
Decachlorobiphenyl	74		85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		77		30-150	B
Decachlorobiphenyl	62		70		30-150	B

PESTICIDES

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 23:11
Analytical Method:	1,8081B	Cleanup Method:	EPA 3620B
Analytical Date:	05/13/17 17:26	Cleanup Date:	05/11/17
Analyst:	DM		
Percent Solids:	88%		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.82	0.357	1	A
Lindane	ND		ug/kg	0.760	0.340	1	A
Alpha-BHC	ND		ug/kg	0.760	0.216	1	A
Beta-BHC	ND		ug/kg	1.82	0.692	1	A
Heptachlor	ND		ug/kg	0.912	0.409	1	A
Aldrin	ND		ug/kg	1.82	0.642	1	A
Endrin	ND		ug/kg	0.760	0.312	1	A
Dieldrin	ND		ug/kg	1.14	0.570	1	A
4,4'-DDE	ND		ug/kg	1.82	0.422	1	A
4,4'-DDD	ND		ug/kg	1.82	0.651	1	A
4,4'-DDT	ND		ug/kg	3.42	1.47	1	A
Endosulfan I	ND		ug/kg	1.82	0.431	1	A
Endosulfan II	ND		ug/kg	1.82	0.610	1	A
Endosulfan sulfate	ND		ug/kg	0.760	0.362	1	A
cis-Chlordane	ND		ug/kg	2.28	0.636	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	60		30-150	B
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	78		30-150	A

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 8151A
Matrix:	Soil	Extraction Date:	05/11/17 20:07
Analytical Method:	1,8151A		
Analytical Date:	05/15/17 19:55		
Analyst:	SL		
Percent Solids:	88%		
Methylation Date:	05/12/17 20:05		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	188	5.02	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
DCAA	90		30-150	A
DCAA	65		30-150	B

SAMPLE RESULTS

Lab ID: L1715046-02
Client ID: C-2 (4.0-6.0)
Sample Location: ELMIRA HIGH SCHOOL

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 05/13/17 17:41
Analyst: DM
Percent Solids: 87%

Date Collected: 05/09/17 13:15
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method:EPA 3546
Extraction Date: 05/10/17 23:11
Cleanup Method: EPA 3620B
Cleanup Date: 05/11/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.77	0.346	1	A
Lindane	ND		ug/kg	0.737	0.329	1	A
Alpha-BHC	ND		ug/kg	0.737	0.209	1	A
Beta-BHC	ND		ug/kg	1.77	0.670	1	A
Heptachlor	ND		ug/kg	0.884	0.396	1	A
Aldrin	ND		ug/kg	1.77	0.623	1	A
Endrin	ND		ug/kg	0.737	0.302	1	A
Dieldrin	ND		ug/kg	1.10	0.553	1	A
4,4'-DDE	ND		ug/kg	1.77	0.409	1	A
4,4'-DDD	ND		ug/kg	1.77	0.631	1	A
4,4'-DDT	ND		ug/kg	3.32	1.42	1	A
Endosulfan I	ND		ug/kg	1.77	0.418	1	A
Endosulfan II	ND		ug/kg	1.77	0.591	1	A
Endosulfan sulfate	ND		ug/kg	0.737	0.351	1	A
cis-Chlordane	ND		ug/kg	2.21	0.616	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	62		30-150	B
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	71		30-150	A

SAMPLE RESULTS

Lab ID: L1715046-02
Client ID: C-2 (4.0-6.0)
Sample Location: ELMIRA HIGH SCHOOL

Date Collected: 05/09/17 13:15
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 05/11/17 20:07

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 05/15/17 20:15
Analyst: SL
Percent Solids: 87%
Methylation Date: 05/12/17 20:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	187	4.98	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	80		30-150	A
DCAA	58		30-150	B

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
		Extraction Method:	EPA 3546
Matrix:	Soil	Extraction Date:	05/10/17 23:11
Analytical Method:	1,8081B	Cleanup Method:	EPA 3620B
Analytical Date:	05/13/17 17:56	Cleanup Date:	05/11/17
Analyst:	DM		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.73	0.340	1	A
Lindane	ND		ug/kg	0.723	0.323	1	A
Alpha-BHC	ND		ug/kg	0.723	0.205	1	A
Beta-BHC	ND		ug/kg	1.73	0.658	1	A
Heptachlor	ND		ug/kg	0.867	0.389	1	A
Aldrin	ND		ug/kg	1.73	0.611	1	A
Endrin	ND		ug/kg	0.723	0.296	1	A
Dieldrin	ND		ug/kg	1.08	0.542	1	A
4,4'-DDE	ND		ug/kg	1.73	0.401	1	A
4,4'-DDD	ND		ug/kg	1.73	0.618	1	A
4,4'-DDT	ND		ug/kg	3.25	1.39	1	A
Endosulfan I	ND		ug/kg	1.73	0.410	1	A
Endosulfan II	ND		ug/kg	1.73	0.580	1	A
Endosulfan sulfate	ND		ug/kg	0.723	0.344	1	A
cis-Chlordane	ND		ug/kg	2.17	0.604	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	67		30-150	B
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	71		30-150	A

SAMPLE RESULTS

Lab ID: L1715046-03
Client ID: C-2 (20-22.0)
Sample Location: ELMIRA HIGH SCHOOL

Date Collected: 05/09/17 14:00
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method: EPA 8151A
Extraction Date: 05/11/17 20:07

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 05/13/17 06:49
Analyst: SL
Percent Solids: 87%
Methylation Date: 05/12/17 20:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	189	5.03	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	87		30-150	A
DCAA	61		30-150	B

SAMPLE RESULTS

Lab ID: L1715046-04
Client ID: STOCKPILE-1
Sample Location: ELMIRA HIGH SCHOOL

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 05/13/17 18:27
Analyst: DM
Percent Solids: 88%

Date Collected: 05/09/17 16:30
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 05/10/17 23:11
Cleanup Method: EPA 3620B
Cleanup Date: 05/11/17

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.78	0.349	1	A
Lindane	ND		ug/kg	0.743	0.332	1	A
Alpha-BHC	ND		ug/kg	0.743	0.211	1	A
Beta-BHC	ND		ug/kg	1.78	0.676	1	A
Heptachlor	ND		ug/kg	0.891	0.400	1	A
Aldrin	ND		ug/kg	1.78	0.628	1	A
Endrin	ND		ug/kg	0.743	0.304	1	A
Dieldrin	ND		ug/kg	1.11	0.557	1	A
4,4'-DDE	ND		ug/kg	1.78	0.412	1	A
4,4'-DDD	ND		ug/kg	1.78	0.636	1	A
4,4'-DDT	ND		ug/kg	3.34	1.43	1	A
Endosulfan I	ND		ug/kg	1.78	0.421	1	A
Endosulfan II	ND		ug/kg	1.78	0.596	1	A
Endosulfan sulfate	ND		ug/kg	0.743	0.354	1	A
cis-Chlordane	ND		ug/kg	2.23	0.621	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	69		30-150	B
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	73		30-150	A

SAMPLE RESULTS

Lab ID: L1715046-04
Client ID: STOCKPILE-1
Sample Location: ELMIRA HIGH SCHOOL

Date Collected: 05/09/17 16:30
Date Received: 05/09/17
Field Prep: Not Specified
Extraction Method:EPA 8151A
Extraction Date: 05/11/17 20:07

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 05/13/17 07:09
Analyst: SL
Percent Solids: 88%
Methylation Date: 05/12/17 20:05

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**	**Column**
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	187	4.97	1	A

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**	**Column**
DCAA	59		30-150	A
DCAA	45		30-150	B

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 05/11/17 10:26
Analyst: EC

Extraction Method: EPA 3546
Extraction Date: 05/10/17 07:33
Cleanup Method: EPA 3620B
Cleanup Date: 05/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1001939-1						
Delta-BHC	ND		ug/kg	1.57	0.307	A
Lindane	ND		ug/kg	0.653	0.292	A
Alpha-BHC	ND		ug/kg	0.653	0.185	A
Beta-BHC	ND		ug/kg	1.57	0.594	A
Heptachlor	ND		ug/kg	0.784	0.351	A
Aldrin	ND		ug/kg	1.57	0.552	A
Endrin	ND		ug/kg	0.653	0.268	A
Dieldrin	ND		ug/kg	0.980	0.490	A
4,4'-DDE	ND		ug/kg	1.57	0.362	A
4,4'-DDD	ND		ug/kg	1.57	0.559	A
4,4'-DDT	ND		ug/kg	2.94	1.26	A
Endosulfan I	ND		ug/kg	1.57	0.370	A
Endosulfan II	ND		ug/kg	1.57	0.524	A
Endosulfan sulfate	ND		ug/kg	0.653	0.311	A
cis-Chlordane	ND		ug/kg	1.96	0.546	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	56		30-150	B
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	62		30-150	A

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

Method Blank Analysis
Batch Quality Control

Analytical Method:	1,8151A	Extraction Method:	EPA 8151A
Analytical Date:	05/15/17 10:08	Extraction Date:	05/11/17 20:07
Analyst:	SL		

Methylation Date: 05/12/17 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01-04 Batch: WG1002672-1						
2,4,5-TP (Silvex)	ND		ug/kg	162	4.32	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	77		30-150	A
DCAA	52		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Lab Number: L1715046
Project Number: 28014
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1001939-2 WG1001939-3									
Delta-BHC	75		75		30-150	0		30	A
Lindane	75		74		30-150	1		30	A
Alpha-BHC	79		78		30-150	1		30	A
Beta-BHC	75		76		30-150	1		30	A
Heptachlor	74		72		30-150	3		30	A
Aldrin	76		74		30-150	3		30	A
Endrin	77		77		30-150	0		30	A
Dieldrin	84		82		30-150	2		30	A
4,4'-DDE	78		77		30-150	1		30	A
4,4'-DDD	70		72		30-150	3		30	A
4,4'-DDT	80		79		30-150	1		30	A
Endosulfan I	76		76		30-150	0		30	A
Endosulfan II	76		75		30-150	1		30	A
Endosulfan sulfate	59		64		30-150	8		30	A
cis-Chlordane	74		72		30-150	3		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		72		30-150	B
Decachlorobiphenyl	72		64		30-150	B
2,4,5,6-Tetrachloro-m-xylene	73		74		30-150	A
Decachlorobiphenyl	74		72		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG1002672-2 WG1002672-3									
2,4,5-TP (Silvex)	66		66		30-150	0		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	75		82		30-150	A
DCAA	57		59		30-150	B

METALS

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-01	Date Collected:	05/09/17 10:30
Client ID:	C-1 (4.0-8.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	88%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	4.6		mg/kg	0.44	0.09	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Barium, Total	27		mg/kg	0.44	0.08	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Beryllium, Total	0.09	J	mg/kg	0.22	0.01	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.44	0.04	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Chromium, Total	5.3		mg/kg	0.44	0.04	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Copper, Total	12		mg/kg	0.44	0.11	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Lead, Total	4.7		mg/kg	2.2	0.12	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Manganese, Total	180		mg/kg	0.44	0.07	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Mercury, Total	0.04	J	mg/kg	0.07	0.02	1	05/11/17 07:50	05/11/17 13:51	EPA 7471B	1,7471B	BV
Nickel, Total	7.7		mg/kg	1.1	0.11	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Selenium, Total	ND		mg/kg	0.88	0.11	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.44	0.12	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
Zinc, Total	28		mg/kg	2.2	0.13	1	05/10/17 19:20	05/11/17 01:36	EPA 3050B	1,6010C	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	5.1	J	mg/kg	0.91	0.91	1		05/12/17 20:39	NA	107,-	

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-02	Date Collected:	05/09/17 13:15
Client ID:	C-2 (4.0-6.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	3.1		mg/kg	0.45	0.09	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Barium, Total	21		mg/kg	0.45	0.08	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Beryllium, Total	0.17	J	mg/kg	0.22	0.02	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.45	0.04	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Chromium, Total	7.3		mg/kg	0.45	0.04	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Copper, Total	14		mg/kg	0.45	0.12	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Lead, Total	11		mg/kg	2.2	0.12	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Manganese, Total	230		mg/kg	0.45	0.07	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Mercury, Total	0.05	J	mg/kg	0.07	0.02	1	05/11/17 07:50	05/11/17 13:53	EPA 7471B	1,7471B	BV
Nickel, Total	10		mg/kg	1.1	0.11	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Selenium, Total	ND		mg/kg	0.90	0.12	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.45	0.13	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
Zinc, Total	39		mg/kg	2.2	0.13	1	05/10/17 19:20	05/11/17 01:41	EPA 3050B	1,6010C	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.3		mg/kg	0.92	0.92	1		05/12/17 20:39	NA	107,-	

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.4		mg/kg	0.46	0.10	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Barium, Total	20		mg/kg	0.46	0.08	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Beryllium, Total	0.06	J	mg/kg	0.23	0.02	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.46	0.05	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Chromium, Total	4.5		mg/kg	0.46	0.04	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Copper, Total	13		mg/kg	0.46	0.12	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Lead, Total	5.2		mg/kg	2.3	0.12	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Manganese, Total	220		mg/kg	0.46	0.07	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Mercury, Total	0.02	J	mg/kg	0.07	0.02	1	05/11/17 07:50	05/11/17 13:55	EPA 7471B	1,7471B	BV
Nickel, Total	6.7		mg/kg	1.2	0.11	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Selenium, Total	ND		mg/kg	0.92	0.12	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.46	0.13	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
Zinc, Total	36		mg/kg	2.3	0.14	1	05/10/17 19:20	05/11/17 02:01	EPA 3050B	1,6010C	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	4.3	J	mg/kg	0.92	0.92	1		05/12/17 20:39	NA	107,-	

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-04	Date Collected:	05/09/17 16:30
Client ID:	STOCKPILE-1	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	88%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	4.4		mg/kg	0.44	0.09	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Barium, Total	38		mg/kg	0.44	0.08	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Beryllium, Total	0.16	J	mg/kg	0.22	0.02	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.44	0.04	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Chromium, Total	7.8		mg/kg	0.44	0.04	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Copper, Total	20		mg/kg	0.44	0.11	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Lead, Total	11		mg/kg	2.2	0.12	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Manganese, Total	310		mg/kg	0.44	0.07	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Mercury, Total	0.08		mg/kg	0.08	0.02	1	05/11/17 07:50	05/11/17 13:57	EPA 7471B	1,7471B	BV
Nickel, Total	10		mg/kg	1.1	0.11	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Selenium, Total	ND		mg/kg	0.89	0.11	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.44	0.12	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
Zinc, Total	37		mg/kg	2.2	0.13	1	05/10/17 19:20	05/11/17 02:05	EPA 3050B	1,6010C	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.8		mg/kg	0.91	0.91	1		05/12/17 20:39	NA	107,-	

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1002199-1										
Arsenic, Total	0.09	J	mg/kg	0.40	0.08	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Barium, Total	ND		mg/kg	0.40	0.07	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Beryllium, Total	ND		mg/kg	0.20	0.01	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.40	0.04	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Chromium, Total	ND		mg/kg	0.40	0.04	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Copper, Total	ND		mg/kg	0.40	0.10	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Lead, Total	ND		mg/kg	2.0	0.11	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Manganese, Total	ND		mg/kg	0.40	0.06	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Nickel, Total	ND		mg/kg	1.0	0.10	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Selenium, Total	ND		mg/kg	0.80	0.10	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Silver, Total	ND		mg/kg	0.40	0.11	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS
Zinc, Total	ND		mg/kg	2.0	0.12	1	05/10/17 19:20	05/10/17 23:17	1,6010C	PS

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1002301-1										
Mercury, Total	ND		mg/kg	0.08	0.02	1	05/11/17 07:50	05/11/17 13:21	1,7471B	BV

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: ELMIRA CSD

Project Number: 28014

Lab Number: L1715046

Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1002199-2 SRM Lot Number: D091-540								
Arsenic, Total	96		-		80-121	-		
Barium, Total	86		-		84-117	-		
Beryllium, Total	94		-		83-117	-		
Cadmium, Total	92		-		83-117	-		
Chromium, Total	98		-		80-119	-		
Copper, Total	98		-		82-117	-		
Lead, Total	96		-		82-118	-		
Manganese, Total	87		-		82-118	-		
Nickel, Total	101		-		83-117	-		
Selenium, Total	96		-		79-121	-		
Silver, Total	96		-		75-124	-		
Zinc, Total	93		-		82-118	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1002301-2 SRM Lot Number: D091-540								
Mercury, Total	98		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1002199-3 QC Sample: L1714982-03 Client ID: MS Sample												
Arsenic, Total	0.79	11	9.1	75		-	-		75-125	-		20
Barium, Total	60.	184	180	**65**	Q	-	-		75-125	-		20
Beryllium, Total	0.13J	4.61	3.4	**74**	Q	-	-		75-125	-		20
Cadmium, Total	ND	4.7	3.2	**68**	Q	-	-		75-125	-		20
Chromium, Total	12.	18.4	24	**65**	Q	-	-		75-125	-		20
Copper, Total	15.	23	33	78		-	-		75-125	-		20
Lead, Total	6.3	47	37	**65**	Q	-	-		75-125	-		20
Manganese, Total	190	46.1	190	**0**	Q	-	-		75-125	-		20
Nickel, Total	10.	46.1	40	**65**	Q	-	-		75-125	-		20
Selenium, Total	ND	11	7.9	**71**	Q	-	-		75-125	-		20
Silver, Total	ND	27.6	21	76		-	-		75-125	-		20
Zinc, Total	40.	46.1	61	**46**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1002301-3 QC Sample: L1714982-03 Client ID: MS Sample												
Mercury, Total	0.03J	0.145	0.18	**124**	Q	-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1002199-4 QC Sample: L1714982-03 Client ID: DUP Sample						
Arsenic, Total	0.79	0.80	mg/kg	1		20
Barium, Total	60.	60	mg/kg	0		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Chromium, Total	12.	12	mg/kg	0		20
Lead, Total	6.3	3.6	mg/kg	**55**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1002301-4 QC Sample: L1714982-03 Client ID: DUP Sample						
Mercury, Total	0.03J	0.02J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

SAMPLE RESULTS

Lab ID: L1715046-01
Client ID: C-1 (4.0-8.0)
Sample Location: ELMIRA HIGH SCHOOL
Matrix: Soil

Date Collected: 05/09/17 10:30
Date Received: 05/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.5		%	0.100	NA	1	-	05/10/17 15:07	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.18	1	05/10/17 19:50	05/11/17 15:06	1,9010C/9012B	JO
Chromium, Hexavalent	0.20	J	mg/kg	0.91	0.18	1	05/12/17 07:55	05/12/17 20:39	1,7196A	WR

SAMPLE RESULTS

Lab ID: L1715046-02
Client ID: C-2 (4.0-6.0)
Sample Location: ELMIRA HIGH SCHOOL
Matrix: Soil

Date Collected: 05/09/17 13:15
Date Received: 05/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.6		%	0.100	NA	1	-	05/10/17 15:07	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.18	1	05/10/17 19:50	05/11/17 15:10	1,9010C/9012B	JO
Chromium, Hexavalent	ND		mg/kg	0.92	0.18	1	05/12/17 07:55	05/12/17 20:39	1,7196A	WR

Project Name:	ELMIRA CSD	**Lab Number:**	L1715046
Project Number:	28014	**Report Date:**	05/16/17

SAMPLE RESULTS

Lab ID:	L1715046-03	Date Collected:	05/09/17 14:00
Client ID:	C-2 (20-22.0)	Date Received:	05/09/17
Sample Location:	ELMIRA HIGH SCHOOL	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.6		%	0.100	NA	1	-	05/10/17 15:07	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.18	1	05/10/17 19:50	05/11/17 15:07	1,9010C/9012B	JO
Chromium, Hexavalent	0.21	J	mg/kg	0.92	0.18	1	05/12/17 07:55	05/12/17 20:39	1,7196A	WR

SAMPLE RESULTS

Lab ID: L1715046-04
Client ID: STOCKPILE-1
Sample Location: ELMIRA HIGH SCHOOL
Matrix: Soil

Date Collected: 05/09/17 16:30
Date Received: 05/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.6		%	0.100	NA	1	-	05/10/17 15:07	121,2540G	RI
Cyanide, Total	0.53	J	mg/kg	1.1	0.18	1	05/10/17 19:50	05/11/17 15:08	1,9010C/9012B	JO
Chromium, Hexavalent	ND		mg/kg	0.91	0.18	1	05/12/17 07:55	05/12/17 20:39	1,7196A	WR

Project Name: ELMIRA CSD
Lab Number: L1715046
Project Number: 28014
Report Date: 05/16/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1002197-1										
Cyanide, Total	ND		mg/kg	0.97	0.16	1	05/10/17 19:50	05/11/17 14:55	1,9010C/9012B	JO
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1002821-1										
Chromium, Hexavalent	ND		mg/kg	0.80	0.16	1	05/12/17 07:55	05/12/17 20:39	1,7196A	WR

Lab Control Sample Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1002197-2 WG1002197-3								
Cyanide, Total	**60**	Q	**77**	Q	80-120	26		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1002821-2								
Chromium, Hexavalent	88		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1002197-4 WG1002197-5 QC Sample: L1714935-29 Client ID: MS Sample												
Cyanide, Total	ND	10	10	95		10	95		75-125	0		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1002821-5 QC Sample: L1715046-04 Client ID: STOCKPILE-1												
Chromium, Hexavalent	ND	1320	1200	91		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ELMIRA CSD
Project Number: 28014

Lab Number: L1715046
Report Date: 05/16/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1002129-1 QC Sample: L1715051-01 Client ID: DUP Sample						
Solids, Total	77.0	80.2	%	4		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1002821-4 QC Sample: L1715046-04 Client ID: STOCKPILE-1						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 05/10/2017 09:31

Cooler Information

Cooler	**Custody Seal**
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1715046-01A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-01B	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-01C	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-01D	Plastic 2oz unpreserved for TS	A	N/A	2.0	Y	Absent	TS(7)
L1715046-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.0	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L1715046-01F	Glass 120ml/4oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-01G	Glass 500ml/16oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-02A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-02B	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-02C	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-02D	Plastic 2oz unpreserved for TS	A	N/A	2.0	Y	Absent	TS(7)
L1715046-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.0	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L1715046-02F	Glass 120ml/4oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1715046-02G	Glass 500ml/16oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-03A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-03B	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-03C	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-03D	Plastic 2oz unpreserved for TS	A	N/A	2.0	Y	Absent	TS(7)
L1715046-03E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.0	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L1715046-03F	Glass 120ml/4oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-03G	Glass 500ml/16oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-04A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-04B	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-04C	Vial water preserved	A	N/A	2.0	Y	Absent	NYTCL-8260HLW(14)
L1715046-04D	Plastic 2oz unpreserved for TS	A	N/A	2.0	Y	Absent	TS(7)
L1715046-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.0	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L1715046-04F	Glass 120ml/4oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)
L1715046-04G	Glass 500ml/16oz unpreserved	A	N/A	2.0	Y	Absent	NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(14),HEXCR-7196(30)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
S	- Analytical results are from modified screening analysis.
J	- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
ND	- Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Alpha Analytical, Inc. ID No.:**17873**
Facility: **Company-wide** Revision 10
Department: **Quality Assurance** Published Date: 1/16/2017 11:00:05 AM
Title: **Certificate/Approval Program Summary** Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,
3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 5/10/17

ALPHA Job # L1715046

Project Information

Project Name: Elmira CSD
Project Location: Elmira High School
Project # 28014
(Use Project name as Project #) ☐
Project Manager: Amanda Castignetti
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information

Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email: amanda.castignetti@sterlingenvir

Deliverables

☑ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☑ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☑ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

amanda.castignetti@sterlingenvironmental.com Part 375 Parameters

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	HEXCR	HERB-APA, TCN	NYTCL-8081,8082,8270	TRICR-CALC	Total Hg Total Metals	NYTCL-8260	NYTCL-8260	Total Solids	Sample Specific Comments	Total Bottles
15046-01	C-1 (4.0-8.0)	5/9/17	10:30	Soil	JS	X	X	X	X	X	X	X	X	Part 375	
02	C-2 (4.0-6.0)	5/9/17	1:15	↓	JS	↓	↓	↓	↓	↓	↓	↓	↓	Parameters.	
03	C-2 (20.0-22.0)	5/9/17	2:00	↓	JS	↓	↓	↓	↓	↓	↓	↓	↓		
04	Stockpile-1	5/9/17	4:30	↓	JS	↓	↓	↓	↓	↓	↓	↓	↓		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

	HEXCR	HERB-APA, TCN	NYTCL-8081,8082,8270	TRICR-CALC	Total Hg Total Metals	NYTCL-8260	NYTCL-8260	Total Solids
Container Type	A	A	A	A	A	V	V	P
Preservative	A	A	A	A	A			A

Relinquished By:	Date/Time	Received By:	Date/Time
Joseph Spaulding	5-9-17 20:30	Bob James AAL	5/10/17 0:15
Bob Ja	5/10/17		5/10/17 02:55

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)