



***SVE Construction and Initial Operations
Bella Cleaners
Claremont Village Shopping Center
Everett, Washington***

**Prepared for:
Phillips Edison & Company**

**November 16, 2020
PECO_2020-20**



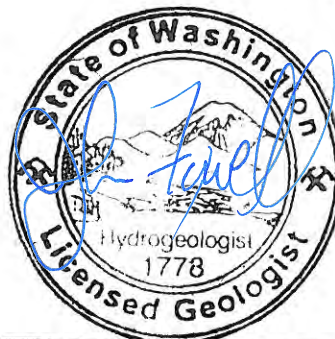
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A handwritten signature in black ink, appearing to read 'Jie Xu'.

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1.0 Introduction

This report documents the construction and initial operations of a Soil Vapor Extraction (SVE) system at the Bella Cleaners dry cleaning operation (Tenant Space 4925) in the Claremont Village Shopping Center located at 4805 to 4933 Evergreen Way in Everett, Washington (the Site; Figure 1 and Figure 2). Previous evaluation of data collected from the Site identified the presence of tetrachloroethene (PCE) and associated breakdown products in soil and soil vapor at the Site. The SVE system was constructed to reduce the potential risk to human health and the environment by reducing the concentrations of PCE and associated breakdown products in soil and soil vapor.

The SVE system was constructed as described in the Soil Vapor Extraction Work Plan (Work Plan) prepared for the Site (Apex, 2017). This report documents the SVE construction (well installations and system construction), initial operation of the SVE system, and remedial progress sampling using sub-slab soil vapor samples.

2.0 Site Background

In August 2014, a Phase I Environmental Site Assessment (ESA) (Apex, 2014a) for Claremont Village Shopping Center conducted by Apex identified an operating dry cleaner (Tenant Space 4925), which was considered a Recognized Environmental Condition (REC). Phase II site assessment completed by Apex in 2014 and 2015 identified the presence of concentrations of PCE and associated breakdown products in soil and soil vapor and the potential for vapor intrusion into the building spaces near the source area. According to the discussion with the current operator of Bella Cleaners in 2020, the cleaner stopped using PCE products in approximately 2017.

In 2018 and 2019, an SVE interim action was implemented for the Site. The SVE system was constructed between March and July 2018, and operated for an initial period of approximately six months from July 2018 to February 2019. After the initial operation period, the system was relocated to a second former cleaner (Tenant Space 4821) at Claremont Village Shopping Center for similar initial operations. The system will be returned to Tenant Space 4925 in 2021 for continued operation.

This section presents a description of the Site, the geology and hydrogeology, and previous environmental assessment completed at the Site.

2.1 Site Location and Description

Bella Cleaners is located in Tenant Space 4925 at Claremont Village Shopping Center, located at 4805 to 4933 Evergreen Way in Everett, Washington (Figure 2). The Site includes Bella Cleaners and adjacent

tenant spaces where sub-slab soil vapor concentrations of PCE and breakdown products have been detected above screening levels. The elevation of the Site is approximately 300 feet above mean sea level (MSL) along the storefronts on the west side. A sub-grade truck loading dock is present in the back of the retail spaces on the east side. The topography slopes steeply upward along the east side of the property.

2.2 Site Geology/Hydrogeology

2.2.1 Site Geology

The Site is situated in the Puget Lowland physiographic province of Washington State (Geologic Map of Washington, 2005). The Puget Lowland is a broad, low-lying trough located between the Cascade Range to the east and the Olympic Mountains to the northwest and the Willapa Hills to the southwest. The landscape largely results from repeated cycles of glacial scour and deposition. The Site is located within an area that has been geologically mapped as Vashon glacial till deposits, characterized as a non-sorted composite consisting of silts, sands, gravels, and boulders which were deposited below the advancing glacier. While till can contain lenses of stratified materials, the locally cemented lodgment drains poorly where weathering is limited by burial. Soils encountered in the explorations were unconsolidated silt, sand, and gravel-based soils that are typical of weathered glacial till deposits.

2.2.2 Site Hydrogeology

During the most recent groundwater monitoring event on January 11, 2019, groundwater was encountered at a depth of approximately 57 feet below ground surface (bgs) at MW-1. Based on topography, the shallow groundwater flow direction is expected to be to the north or the northwest.

2.3 Previous Investigations

Previous investigations at the Site have assessed soil, groundwater, and soil vapor for the presence of PCE and breakdown products associated with dry cleaning solvents. Sampling locations and investigation results for pre-remediation sampling are shown on Figures 2 through 4.

2014 Phase II ESA. A Phase II ESA was completed at the Site in September 2014 (Apex, 2014b) and consisted of:

- One exploration (B-2) near the Site area to a depth of 65 feet bgs for purposes of soil and groundwater sampling. Three soil samples were collected from boring B-2 at depths of 15 feet, 40 feet, and 60 feet bgs. Additionally, one grab groundwater sample was collected from boring B-2 at the depth of first encountered groundwater (approximately 60 feet bgs);
- Two grab soil samples beneath the slab of the Site to characterize conditions near a suspected deviation in the sewer lateral. Samples were collected beneath the building slab at the soil surface (Bella Surface) and at a depth of 36 inches bgs (Bella 36"); and

-
- Two sub-slab vapor samples (Bella Front and Bella Back) in the Site area. Samples were collected in areas where the majority of dry cleaning operations occur.

2015 Tier II Indoor Air Assessment. A Tier II Indoor Air Assessment was completed in September 2015 (Apex, 2015) within Bella Cleaners and adjacent tenant spaces. The Tier II assessment consisted of:

- Three sub-slab vapor samples (SS-LS-1, SS-BC-1, and SS-PM-1) in the Site and adjacent tenant spaces (Papa Murphy's and Teriyaki Zone).

2016 SVE Pilot Test. SVE well installation and an SVE pilot test were completed in April and May 2016 (Apex, 2016) and consisted of:

- Soil samples SVE-1-2 and OB-1-48.5 were collected during well installations for the pilot test. Additionally, one grab groundwater sample (GW-1) was collected from OBS-1 at the depth of first encountered groundwater (approximately 57 feet bgs) at the time of drilling.
- The pilot test and analytical model (Air2D) developed by the U.S. Geological Survey (USGS) estimated the intrinsic air permeability of the geologic formation in the vicinity of well SVE-1 and that an effective radius of influence (ROI) of at least 42 feet is feasible.

The prior investigation results for the Site are discussed below.

Soil. Concentrations of PCE and breakdown products were detected in soil samples, including five detections of PCE ranging from 1 microgram per kilogram ($\mu\text{g}/\text{kg}$) to 63.2 $\mu\text{g}/\text{kg}$. None of the detected concentrations of volatile organic compounds (VOCs) exceeded the applicable Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Use, except for the PCE concentration in one soil sample (SVE-1-2). Soil results are presented on Table 1 and are shown in Figure 3.

Groundwater. Concentrations of VOCs were not detected above reporting limits in the grab groundwater samples collected from boring B-2 and OBS-1. Groundwater results are presented on Table 2 and are shown in Figure 4.

Soil Vapor. Several VOCs, including PCE and trichloroethylene (TCE) were detected in the sub-slab vapor samples collected beneath the Site and adjacent tenant spaces. The detected concentrations of PCE ranged from 1,270 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 22,000 $\mu\text{g}/\text{m}^3$. The detected concentrations of TCE ranged from 4.5 $\mu\text{g}/\text{m}^3$ to 46 $\mu\text{g}/\text{m}^3$. Each of the PCE detections and two TCE detections exceeded the applicable MTCA screening levels. Chloroform was detected in several soil vapor samples at concentrations above the screening levels. Chloroform is a common trihalomethane breakdown product. Chloroform detections are commonly associated with breakdown of disinfection byproducts from water and sewer systems. The only other VOC detected above a screening level was naphthalene in one sample.

The sub-slab soil vapor concentrations indicated some PCE had been released to soil and that there was a potential for vapor intrusion. Historical soil vapor concentrations are presented on Table 3 and are shown in Figure 5.

A portion of the 2014 and 2015 Apex investigations also included a former dry cleaner at tenant space 4821, currently occupied by Wild Birds Unlimited (Figure 2). This investigation and remediation work is being reported separately.

2.4 Short Term TCE Risks

Washington State Department of Ecology (Ecology) published the Toxics Cleanup Program Implementation Memorandum #22 – Vapor Intrusion Investigations and Short-term Trichlorethene Toxicity on October 1, 2019. This document includes default short-term screening levels for TCE in all media that are targeted for preventing TCE exposure for women of childbearing age. The default short term soil vapor TCE screening level is 250 $\mu\text{g}/\text{m}^3$. The highest detected concentration of TCE in soil vapor at the Site was 92.3 $\mu\text{g}/\text{m}^3$. Short term TCE risks are not expected at the Site.

3.0 Remedial Construction and Sampling

The SVE system was constructed in general accordance with the SVE Work Plan (Apex, 2017). In general, the design is based on the recommendations provided in the U.S. Army Corps of Engineers (USACE) Soil Vapor Extraction Engineering Manual (USACE, 2002). Any deviations from the work plan are described below. Construction of the SVE system included installation of the groundwater monitoring well MW-1 (completed on March 15, 2018) and installation of the SVE system equipment (which was substantially completed in July 2018). Well drilling was completed by Cascade Drilling, Inc. of Woodinville, WA, and system construction activities were performed by Clearcreek Contractors Inc (Clearcreek) of Everett, Washington.

Apex documented the well drilling and installation of the mechanical system components (system piping, vaults, and above-ground equipment). The layout of the system is shown on Figure 6, and a schematic of the SVE system components is shown on Figure 7.

3.1 Preparatory Activities

The following activities were conducted prior to starting work in order to prepare the site and workers for construction activities.

3.1.1 Utility Locating

The Washington Utility Notification Center was notified of the proposed installation activities at least 48 hours prior to beginning construction. In addition, a private utility locator was retained to locate underground utilities and piping at the vapor extraction wells and trenching locations that might not be located through the One-Call system.

3.1.2 Health and Safety

A health and safety plan (HASP) was prepared prior to commencing construction activities. Daily tailgate health and safety meetings were conducted every morning prior to the start of each day's activities.

3.1.3 Interior Sub-Slab Vapor Points Installation

On May 15, 2018, three interior sub-slab soil vapor points (SS-BC-2, SS-BC-3, and SS-BC-4) were installed in the vicinity of the dry cleaning and spot cleaning equipment as well as the waste storage areas to collect baseline pre-remediation data. On August 7, 2020, five additional sub-slab soil vapor points were installed to assess remediation performance. The additional sub-slab sampling points were installed within the tenant space (SS-BC-5 and SS-BC-6), adjacent tenant space in Papa Murphy's (SS-PM-2), and adjacent tenant space in Teryaki Zone (SS-TZ-2 and SS-TZ-3). The sub-slab soil vapor points consisted of the Vapor Pin system (<http://vaporpin.coxcolvin.com/>) and were installed by Apex with roto-hammer equipment. The sub-slab soil vapor point locations are shown on Figure 8.

3.2 SVE System Construction

The SVE system was constructed between March 13 and July 10, 2018. Construction details are summarized below.

3.2.1 System Piping and Trenching

Trenching and SVE piping construction were performed by Clearcreek. The piping layout for the SVE system is shown on Figure 6. Clearcreek first cut the concrete for the SVE well and trenches, then constructed the trenches according to the details and specifications in the SVE Work Plan (Apex, 2017).

To the extent practicable, pipe slopes were maintained during installation such that the low point of the piping was at the wellhead. Trenches were excavated to a depth of approximately 2.5 to 3 feet bgs. The excavated soil was used to backfill the trenches, and the backfill was compacted to a firm, non-yielding state using hand-operated compactors. Paved areas that were disturbed during the installation activities were restored with concrete to match the surrounding surface.

Soil vapor extraction well (SVE-1) and observation well (OBS-1), which were installed during a previous SVE pilot test in 2016, were utilized as a part of the SVE system. Within the well vault, the SVE-1 well is

equipped with a flow control valve and monitoring port. The control valve allows for adjusting flow from the well over a continuous range from zero to the maximum flow capable from the well. The monitoring port was installed on the well side of the control valve and may be used for either monitoring vacuum or collecting a vapor sample.

3.2.2 System Blower and Vacuum Assembly

The SVE system is a self-contained system unit that houses the vacuum blower (Rotron EN404), moisture separator, transfer pump, and storage drum. The self-contained system is housed in an insulated skid-mounted shed (approximately four feet by six feet). The two carbon drums and the control panel are located outside of the shed. The system unit was connected to the SVE piping and electrical service in close proximity to the system. The treated discharge from the system exhausts from the top of the a carbon filters outside of the shed through an elevated stack (approximately 20 feet above ground level). The control panel is equipped with alarms and controls.

3.3 Construction Waste Management

Construction waste consisted of asphalt concrete, soil cuttings from the well installations, decontamination water, and personal protective equipment (PPE). The wastes were handled as follows.

- Asphalt concrete removed from the vault and trench areas was segregated and disposed of as solid waste.
- The soil cuttings generated during the SVE system installation was placed in 55-gallon drums, approved by Ecology as contained-in waste and disposed of by Cascade Drilling (under subcontract to Apex). These soils were transported to the Waste Management Wenatchee Landfill, a Subtitle D landfill in Wenatchee, Washington. Approval emails from Ecology and Soil disposal documentations are included in Appendix B.
- The purged water and decontamination water generated during the SVE well installation was placed in 55-gallon drums, approved by City of Everett under the Discharge Permit authorized on March 7, 2018, and disposed into sanitary sewer system by Clearcreek (under subcontract to Apex). Discharge permit and approval emails from City of Everett are included in Appendix B.
- PPE and miscellaneous debris were disposed of as a solid waste.

3.4 Sampling during Construction

Soil and groundwater samples were collected at the Site during SVE construction and shipped to ESC laboratory (now Pace National) for analysis. Laboratory analytical reports are provided in Appendix C. Sampling results are discussed below.

3.4.1 Groundwater Monitoring Well Installation

One groundwater monitoring well (MW-1) was installed east of the Site on March 15, 2018, as shown on Figure 6. The well was installed by Cascade Drilling, Inc. using sonic drilling equipment. As an additional safety precaution, this location was cleared for underground utilities using a vacuum truck with air knife. Soil lithology was logged, and the soil cores were screened for VOCs using a photoionization detector (PID) and for separate-phase oils using a sheen test. Soil lithology and field screening results are shown on the well log included in Appendix A.

The groundwater monitoring well (MW-1) was installed to a total depth of 75 feet bgs and screened approximately 65 to 75 feet bgs. The monitoring well was constructed with two-inch-diameter, Schedule 40 polyvinyl chloride (PVC) casing. The well screen is two-inch Schedule 40 PVC with 0.020-inch slot size. Filter material (10/20 Silica Sand) was installed in the borehole from the bottom of the well extending to one foot above the top of the well screen, and the well was sealed with 3/8-inch hydrated bentonite chips to within one foot of the bottom of the well vault depth. The well was finished with a circular steel vault (18-inch-diameter, 12 inches deep) set in concrete.

3.4.2 Soil Results

During the installation of well MW-1, the encountered soils were field screened continuously throughout the boring. Because there were no field screening indications of contamination during the drilling, soil samples were collected and analyzed from a depth of 10 feet bgs and from the terminus of the boring (75 feet bgs). During the excavation of the SVE trench, soil samples were collected at a depth of three feet bgs within the trench excavation areas.

Four soil samples were collected to assess soil conditions at the east of the Site:

- MW-1 (10') and MW-1 (75') from well MW-1;
- S1 (3') and S2 (3') from the SVE trenching area.

Soil samples were analyzed for chemical analysis of VOCs by Environmental Protection Agency (EPA) Method 8260B. Analytical results show that concentrations of PCE were detected at MW-1 (10'), S1 (3'), and S2 (3'), but were below the MTCA Method A screening level for unrestricted use (50 µg/kg). No other VOCs were detected above method reporting limits (MRLs). The results, in addition to historical soil results, are shown on Table 1. The sample locations are shown on Figure 6.

3.4.3 Groundwater Sampling and Results

Following the installation of the well, Apex developed MW-1 on May 16, 2018 and collected groundwater samples from MW-1 on May 29 and September 10, 2018 and January 22, 2019. The samples were analyzed for VOCs by EPA Method 8260B. No VOCs were detected above MRLs. The results, in addition to historical groundwater results, are shown on Table 2.

4.0 System Monitoring and Initial Operation

The completed SVE system was initially started up on July 11, 2018 and began normal operation. SVE system startup and initial operations are discussed below. Initial operations were completed to evaluate system effectiveness and performance. After the initial operations period between July 11, 2018 and approximately January 7, 2019, the system was relocated to the former cleaner at the location of Tenant Space 4821 for similar initial operations. The system will be returned to the Site in 2021 for continued operation.

4.1 System Startup

At the startup of the SVE system, each of the valves to the SVE well were fully opened and the SVE system was operated for approximately two hours. Following this period, the pressure to the SVE well was monitored using Dwyer® Magnehelic 0- to 100-inch H₂O pressure gauges to determine the vacuum distribution in the piping network of the system. The system continued to run for 24 hours and samples of the pre-treatment vapor and effluent vapor were taken.

4.2 Initial Operations

The system startup pressure measurements were consistent with the design criteria and were balanced at the system well (consistently running about six to seven inches of water vacuum on the SVE system). Routine maintenance of the SVE system equipment includes inspection of the system and operating parameters (vacuum pressures and flow rates), maintenance of the blower motor in accordance with the manufacturer's recommendations, and removal of any water that collected in the moisture separator.

4.3 Monitoring and Performance

The system monitoring program used to assess the effectiveness of the system is outlined in the table below.

Remedial Action Component(s)	Location	Monitoring	Frequency
SVE System	SVE-1, OBS-1, and MW-1; Before and after carbon treatment	PID, vacuum, and flow monitoring	Daily for three days after system startup; Weekly for three weeks, then monthly for five months.
	Before and after carbon treatment	Vapor analytical sampling (Method TO-15)	One day after constant operation, then monthly for approximately six months.

Additionally, in February 2019, vacuum communication testing between the SVE system and sub-slab vapor points BC-1 to BC-4 was conducted. The monitoring results indicated there was not communication between the SVE system and sub-slab vapor points.

4.3.1 Vapor Sample Results

Vapor samples were collected from influent air before carbon treatment (samples labeled as “Influent”) and discharge air after carbon treatment (samples labeled as “Effluent”). Samples were submitted to the analytical laboratory (ESC Lab Sciences, now Pace National) and analyzed for VOCs using EPA Method TO-15. Vapor analytical results are presented in Table 4, and the laboratory analytical reports are provided in Appendix C. The analytical results show an average PCE concentration of 50 µg/m³ before carbon treatment and non-detect after carbon treatment for the SVE system. The system flow rate is about 148 cubic feet per minute (cfm). The startup concentration equates to an annual removal rate of approximately 0.25 pounds per year.

4.3.2 SVE System Assessment

The flow and pressure data collected from SVE-1 and OBS-1 near the Site area were used in an analytical model (Air2D) developed by the USGS to assess the ROI around well SVE-1. In accordance with the USACE design guidance (USACE, 2002), the ROI is defined as the distance at which the soil vapor velocity in the pore space is at least 0.001 centimeters per second (cm/sec). Results of SVE system monitoring are presented in Table 5. The results of the Air2D model are included in Appendix D. Based on the results of the Air2D model, the calculated ROI around well SVE-1 at the full-scale SVE system is 66.7 feet, which is larger than the designed ROI (42 feet). The results indicate that the full-scale SVE system would provide enough coverage of the target treatment area (including beneath the Site building). The calculated ROI around SVE-1 is shown on Figure 6.

5.0 Operations Monitoring

The SVE system operated at the Site from July 11, 2018 to approximately January 7, 2019. SVE operation and effectiveness monitoring data were collected during this period. Note that the system was turned off for approximately one week prior to sub-slab sampling in January to allow the Site to return to static conditions before soil vapor monitoring. Note that on January 25, 2019, after the sampling event, the system was restarted for the final SVE monitoring event.

Concentrations of PCE in the vapor stream decreased significantly during the initial operation of the SVE system. Based on comparison of the influent concentration at startup (July 11, 2018) and the final influent concentration sample results (January 22, 2019), concentrations of PCE in the vapor stream from the SVE system were reduced by approximately 70 percent over the six-month operation period. At the time of shutdown, the system continued to remove detectable concentrations of PCE and breakdown products.

After the SVE system was turned off, confirmation sub-slab soil vapor samples were collected from three sub-slab vapor locations (SS-BC-2, SS-BC-3, and SS-BC-4) at the Site on January 22, 2019 and April 25, 2019 to evaluate contaminant rebound. Sampling results are shown on Figure 8. PCE and TCE were detected at all sample locations. PCE was detected above MTCA Method B soil vapor screening levels in sample SS-BC-2. TCE was detected above MTCA Method B soil vapor screening levels in samples SS-BC-2 and SS-BC-3.

Two rounds of sub-slab soil vapor samples were collected from eight sub-slab vapor locations at the Site and adjacent tenant spaces on August 14 and 21, 2020 as below:

- One sub-slab vapor location (SS-PM-2) at Papa Murphy's;
- Five sub-slab vapor locations (SS-BC-2, SS-BC-3, SS-BC-4, SS-BC-5 and SS-BC-6) at Site; and
- Two sub-slab vapor locations (SS-TZ-2 and SS-TZ-3) at Teriyaki Zone.

Sampling results are shown on Figure 8. PCE and TCE were detected at all sample locations. PCE was detected above the MTCA Method B soil vapor screening level in all above samples except for SS-TZ-2 and SS-BC-4, which are located on the far east end of the Site and Teriyaki Zone tenant space. TCE was detected above the MTCA Method B soil vapor screening level in all above samples except for SS-TZ-2, SS-TZ-3, SS-PM-2 and SS-BC-4.

6.0 Summary and Conclusions

A summary of the remedial activities and data conclusions are provided below.

- The results of soil samples indicated that concentrations of PCE and associated breakdown products in soil to the east of the tenant space were mostly below the MTCA Method A screening levels for unrestricted use. One sample (SVE-1-2) exhibited a PCE concentration that marginally exceeded the MTCA Method A soil cleanup level of unrestricted land use.
- Some amount of PCE has historically been released to the environment, however PCE and associated breakdown products have not been detected in groundwater.
- The SVE system was constructed according to the SVE Work Plan (Apex, 2017) between March 13 and July 10, 2018. The calculated ROI for the constructed SVE system indicates that the full-scale SVE system is covering the target treatment area (including beneath the Site).
- The SVE system operated for an initial period of approximately six months from July 2018 to January 2019. The SVE system was temporarily shut down after six months of operation. Monitoring for the SVE system indicates an annual removal rate of approximately 0.25 pounds per year of PCE.

-
- Sub-slab vapor testing was completed in 2019 and 2020 to evaluate treatment effectiveness after system shutdown. Concentrations of PCE and associated breakdown products in the sub-slab soil vapor samples were reduced compared to the 2018 vapor results before operation of the SVE system. However, the detected concentrations of PCE and/or TCE in the sub-slab soil vapor samples at the Site were detected above MTCA Method B soil vapor screening levels in all samples collected before and after initial operation of the SVE system, except for SS-BC-4 and SS-TZ-2.
 - The initial concentration reductions indicate the SVE system was effective in reducing the PCE concentrations near the source area. Based on the concentration rebound that was observed, additional SVE operation is required for remediation.

6.1 System Modification

Operations data indicated there was not communication between sub-slab intervals and the SVE system. Additionally, significantly decreased concentrations in the SVE vapor stream, paired with the residual concentrations detected after initial operation, suggest that mass could be present above the uppermost portion of the SVE well screen, or that the perimeter foundation is preventing access to the shallow intervals. A modification of the SVE system is proposed in order to increase vapor extraction from shallower intervals near the source area.

The proposed shallow SVE well location and piping layout are conceptually shown on Figure 9. Related construction details are shown on Figure 10. This location was selected to be in relatively close proximity to the higher vapor concentrations while minimizing the potential impact to the operating business. Actual locations of the piping and proposed new shallow SVE well may be modified to avoid utility conflicts and other obstructions.

Shallow SVE Well. The well will consist of a six-inch-diameter SVE point screened from four to nine feet bgs with 0.020-inch slot size. Filter material (10/20 Silica Sand) will be installed in the borehole from the bottom of the well extending to one foot above the top of the well screen, and the well will be sealed with 3/8-inch hydrated bentonite chips to within one foot of the bottom of the well vault depth. The well will be finished with a circular steel vault (18-inch-diameter, 12 inches deep) set in concrete. Piping connecting to the SVE system will be routed in a trench to the nearest wall, then routed vertically to above the drop-down ceiling, across the building exterior, and connected to the mobile SVE system. The pipe penetrations will be sealed with caulk at the floor and the exterior building wall.

The piping in the trench will be sloped toward the well to prevent the accumulation of moisture (such as from condensation) in the piping. Piping will be bedded such that no voids or protrusions might potentially damage the piping. The trench will be backfilled with compacted crushed rock (3/4-inch-minus) to a visibly non-yielding state. The vertical piping from the system to the building wall penetration will be equipped with

a drain “Y” to allow cleanout of any water that may accumulate in the riser. The concrete floor slab will be patched to match the existing surface.

Sub-Slab Vapor Pit Construction. The SSDS will consist of a vertical three-inch diameter schedule 40 PVC pipe installed through a 12-inch diameter opening cored in the concrete floor into the sub-slab layer of aggregate material. The three-inch diameter PVC pipe will be routed vertically from beneath the floor to the building exterior via the same path as the SVE well. Piping will be mounted on the exterior of the existing drywall. Pipe penetrations will be sealed with caulk at the floor and the exterior building wall and include new flashings as needed. The vapor pit will be connected to the SSDS system.

The vapor pit piping will be valved and equipped with a metering method to ensure it is operating properly. This will consist of a visible U-tube manometer placed on the PVC pipe sections inside the tenant space for verification of system operation. Initial vacuum pressures will be recorded at startup at the PVC pipe penetrations from the in-line U-tube manometer.

7.0 Future Plans

The data indicate that the system has likely removed most of the VOC mass from subsurface soils, and that the original mass of source material was relatively small. While the SVE system is capturing the area of subsurface soil vapor (defined as five feet bgs and deeper), sub-slab soil vapor concentrations remain above applicable screening levels across several tenant spaces north and south of the cleaner. Concentrations of PCE in soil have been detected above applicable cleanup levels in shallow soils, above the SVE treatment interval (above five feet bgs) at the exterior area of the former cleaner. Additional SVE from sub-slab and shallow soil intervals (above five feet bgs) will likely be required in the future in order to achieve site closure. Some characterization will be required \ to determine the extent of the required removal in the shallow and sub-slab intervals.

Apex recommends that the next phase of the interim action consist of:

- Installing and monitoring additional soil vapor monitoring points to determine the full extent of the area where Method B screening levels are exceeded;
- Characterizing shallow soils in the area east of the former cleaner that are located above the current treatment interval;
- Modifying the SVE system to include the capability to extract vapors from shallow (less than five feet bgs) and sub-slab intervals. Operate for nine months.
- Prepare an annual report with a final cleanup decision recommendation.

The objective of the next phase of the interim action is to establish that the SVE can remove vapors from shallow and sub-slab intervals of the Site. These results will provide the needed data to establish a final cleanup action plan for review and approval by Ecology.

8.0 References

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- Schuster, J. Eric, 2005. *Geologic Map of Washington State - Washington Division of Geology and Earth Resources Geologic Map*, scale 1:250,000.

Table 1
Soil Analytical Results
Bella Cleaners at Claremont Village Shopping Center
Everett, WA

Sample Identification:	B-2-15	B-2-40	B-2-60	Bella Surface	Bella 36"	SVE-1-2	OBS-1-48.5	MW-1 (10')	MW-1 (75')	S1 (3')	S2 (3')	Method A Soil Cleanup Levels for Unrestricted Land Use
Sample Date:	9/18/2014	9/18/2014	9/18/2014	9/18/2014	9/18/2014	4/4/2016	4/5/2016	3/15/2018	3/16/2018	5/1/2018	5/1/2018	
Volatile Organic Compounds (µg/kg)												
Acetone	14	<10	<10	15	<10	<1,470	<1,450	<57.7 UJ	<61.2 UJ	--	--	--
n-Butylbenzene	<0.26	<0.27	<0.26	<0.3	<0.27	<73.5	<72.7	<1.15	<1.22	--	--	--
cis-1,2-Dichloroethene	<0.24	<0.24	<0.24	<0.28	<0.25	<36.7	<36.4	<1.15	<1.22	<2.8	<2.7	--
Naphthalene	<1.0	<1.0	<1.0	<1.2	<1.0	<147	<145	<5.77	<6.12	--	--	5,000
Tetrachloroethene (PCE)	1.0	<0.29	<0.28	17	27	63.2	40	1.48	<1.22	13.3	41.3	50
1,2,4-Trimethylbenzene	0.38	<0.22	<0.21	<0.25	<0.22	<73.5	<72.7	<1.15	<1.22	--	--	--
1,2,3-Trimethylbenzene	<0.29	<0.30	<0.29	<0.34	<0.30	--	--	<1.15	<1.22	--	--	--
1,1-Dichloroethene	--	--	--	--	--	--	--	<1.15	<1.22	<2.8	<2.7	--
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	<1.15	<1.22	<5.59	<5.4	--
Trichloroethene	--	--	--	--	--	--	--	<1.15	<1.22	0.451 J	<1.08	30
Vinyl chloride	--	--	--	--	--	--	--	<1.15	<1.22	<2.80	<2.70	--

Notes:

1. µg/kg = Micrograms per kilogram (ppb).
2. mg/kg = Milligrams per kilogram (ppm).
3. Bold values are detected above laboratory reporting limits.
4. < = Non detect, concentration less than the laboratory reporting limit
5. Screening levels from Department of Ecology's Cleanup Levels and Risk Calculation (CLARC) Master Table for Method A screening. Updated January 2020.
6. Shaded values exceed the Method A soil cleanup levels for unrestricted land use.
7. -- = Not measured or value not available.
8. J = Estimated values.
9. UJ = The not detected value is estimated at the reporting limit.

Table 2
Groundwater Analytical Results
Bella Cleaners at Claremont Village Shopping Center
Everett, WA

Sample Identification:	B-2	GW-1	MW-1			Method A Groundwater Cleanup Levels for Unrestricted Land Use
Sample Date:	9/18/2014	4/5/2016	5/29/2018	9/10/2018	1/22/2019	
Volatile Organic Compounds (µg/L)						
Acetone	<10	<20	<20	--	--	--
Chloroform	<0.32	<1.00	<1.00	--	--	--
Tetrachloroethene (PCE)	<0.37	<0.50	<0.50	<0.50	<0.50	5
1,1-Dichloroethene	--	--	<0.50	<0.50	<0.50	--
Cis-1,2-Dichloroethene	--	--	<0.50	<0.50	<0.50	--
Trans-1,2-Dichloroethene	--	--	<0.50	<0.50	<0.50	--
Trichloroethene	--	--	<0.50	<0.50	<0.50	5
Vinyl Chloride	--	--	<0.50	<0.50	<0.50	0.2

Notes:

1. µg/l = Micrograms per liter (ppb).
2. Bold values are detected above laboratory reporting limits.
3. < = Non detect, concentration less than the laboratory reporting limit.
4. Screening levels from Department of Ecology's Cleanup Levels and Risk Calculation (CLARC) Master Table for Method A screening. Updated January 2020.
5. -- = Not measured or value not available.

Table 4
Air Discharge Analytical Results
Bella Cleaners at Claremont Village Shopping Center
Everett, WA

Sample Identification:	SVE System									
	Influent					Effluent				
Sample Date:	7/12/2018	8/9/2018	9/13/2018	12/4/2018	1/22/2019	7/12/2018	8/9/2018	9/13/2018	12/4/2018	1/22/2019
Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)										
1,1-Dichloroethene	<1.59	<0.793	<0.793	<1.59	<0.793	<1.59	<0.793	<0.793	<1.59	<0.793
cis-1,2-Dichloroethene	<1.59	<0.793	<0.793	<1.59	<0.793	<1.59	<0.793	<0.793	<1.59	<0.793
trans-1,2-Dichloroethene	<1.59	<0.793	<0.793	<1.59	<0.793	<1.59	<0.793	<0.793	<1.59	<0.793
2-Propanol	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	4.89	84.0	59.2	34	24	<2.72	2.03	<1.36	<2.72	<1.36
Trichloroethylene	<2.14	<1.07	<1.07	<2.14	<1.07	<2.14	<1.07	<1.07	<2.14	<1.07
Vinyl chloride	<1.02	<0.511	<0.511	<1.02	<0.511	<1.02	<0.511	<0.511	<1.02	<0.511

Notes:

1. $\mu\text{g}/\text{m}^3$ = Micrograms per cubic meter.
2. Bold denotes a concentration above the method detection limit.
3. Samples analyzed with EPA Method TO-15.
4. < = Not detected above the indicated method reporting limit (MRL).

Table 5
SVE Monitoring Results
Bella Cleaners at Claremont Village Shopping Center
Everett, WA

Measurement Date	SVE System													
	SVE-1		OBS-1		MW-1		Pre-Moisture Separator		Pre C-1		Pre C-2		Effluent	
	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure
7/12/2018	0.03	-6.8	0	-0.027	0	0	NM	-6	NM	0.15	0.01	3	0.03	0
7/13/2018	0.5	-6.8	0	-0.12	0	0	NM	-6	NM	0.18	0	3	0.3	0
7/20/2018	0	-6.9	0	-1.54	0	-0.05	0	-6.3	0	0.18	0	3	0	0
7/27/2018	0	-6.8	0	-1.42	0	-0.03	0	-6.3	0	0.18	0	3	0	0
8/9/2018	0	-6.9	0	-1.55	0	-0.04	0	-6.4	0	0.19	0	3	0	0
10/9/2018	0	-7.3	0	-1.755	0	-0.15	0	-6.8	0	0.18	0	3	0	0
12/4/2018	0	-7.136	0	-3.23	0	-1.454	0	-7.031	0	0.18	0	3	0	0
1/22/2019	0	-7.13	0	-1.145	0	-1.56	0	-8.941	0	0.615	0	3	0	5.07

Notes:

1. Photoionization detector (PID) readings in parts per million (ppm).
2. Pressure readings in inches of water.
3. NM = Not measured.
4. The SVE system operated at Bella Cleaners from July 11, 2018 to January 22, 2019.

Figure 1
Site Location Map

Bella Cleaners - Claremont Village Shopping Center
4925 Evergreen Way
Everett, Washington



3015 SW First Avenue
Portland, Oregon 97201
Telephone: (503) 924-4704
Fax: (503) 943-6357
www.apexcos.com

Everett, Washington

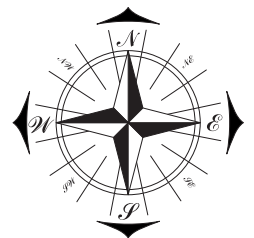
United States Department of the Interior
Geological Survey
7.5-Minute Series Topographic Map
Contour Interval: 20 feet
Scale: 1 inch = 24,000 feet
Date: 2020

Project: SVE Project

Client: Phillips Edison

Apex Job #:
PECO_2020-20.03

Date: November 2020



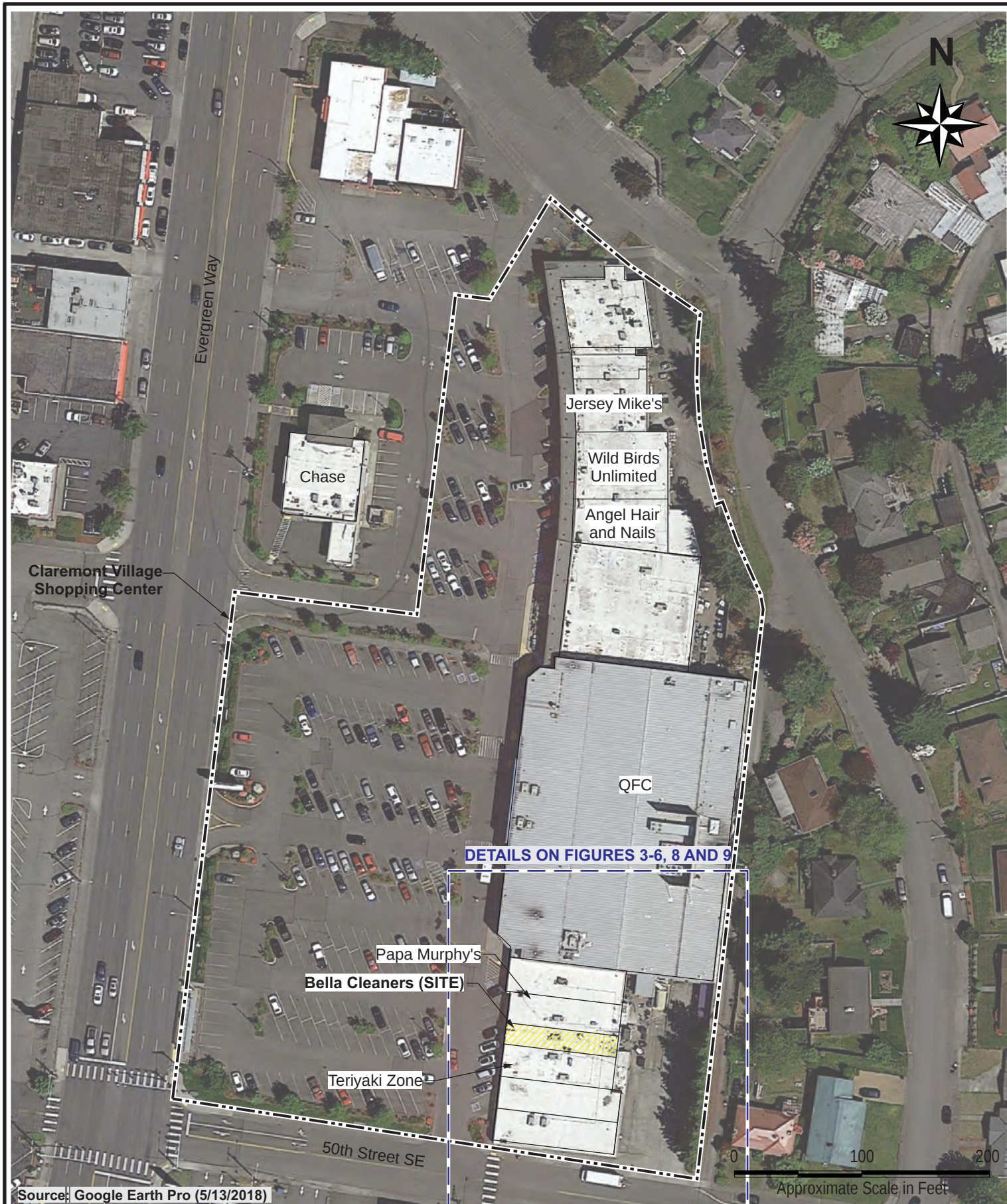


Figure 2:
Site Plan

**Bella Cleaners -
Claremont Village Shopping Center**
4925 Evergreen Way
Everett, Washington





0 30 60
Approximate Scale in Feet

Legend:

- Monitoring Well Location
- SVE Extraction Well Location
- SVE Observation Well Location
- Historical Exploration Location
- Historical Grab Soil Sample Location

SVE-1		4/4/16	2'	63.2
PCE				
TCE				

Location Identification

Date Sampled

Sample Depth

Concentration in micrograms per kilogram (µg/kg)

Highlighted values exceed the screening levels for Method A Soil Cleanup for Unrestricted Land Use

Analyte Sampled

Figure 3:
Soil Results

Bella Cleaners -
Claremont Village Shopping Center
4925 Evergreen Way
Everett, Washington





Legend:

- Monitoring Well Location
- SVE Observation Well Location
- Historical Exploration Location

GW-1 4/5/16		Location Identification
DCE	--	Date Sampled
c-DCE	--	Concentration in micrograms per Liter (µg/L)
t-DCE	--	Analyte Sampled
PCE	<0.5	-- = Not Analyzed
TCE	--	
VC	--	

Figure 4:

Groundwater Results

**Bella Cleaners -
Claremont Village Shopping Center**
4925 Evergreen Way
Everett, Washington





Legend:

-  Monitoring Well Location
-  SVE Extraction Well Location
-  SVE Observation Well Location
-  Sub-Slab Soil Vapor Sampling Point
-  Calculated Radius of Influence

0 40 80
Approximate Scale in Feet

Figure 6:
Remedial Action Area
and SVE Layout

Bella Cleaners -
Claremont Village Shopping Center
4925 Evergreen Way
Everett, Washington



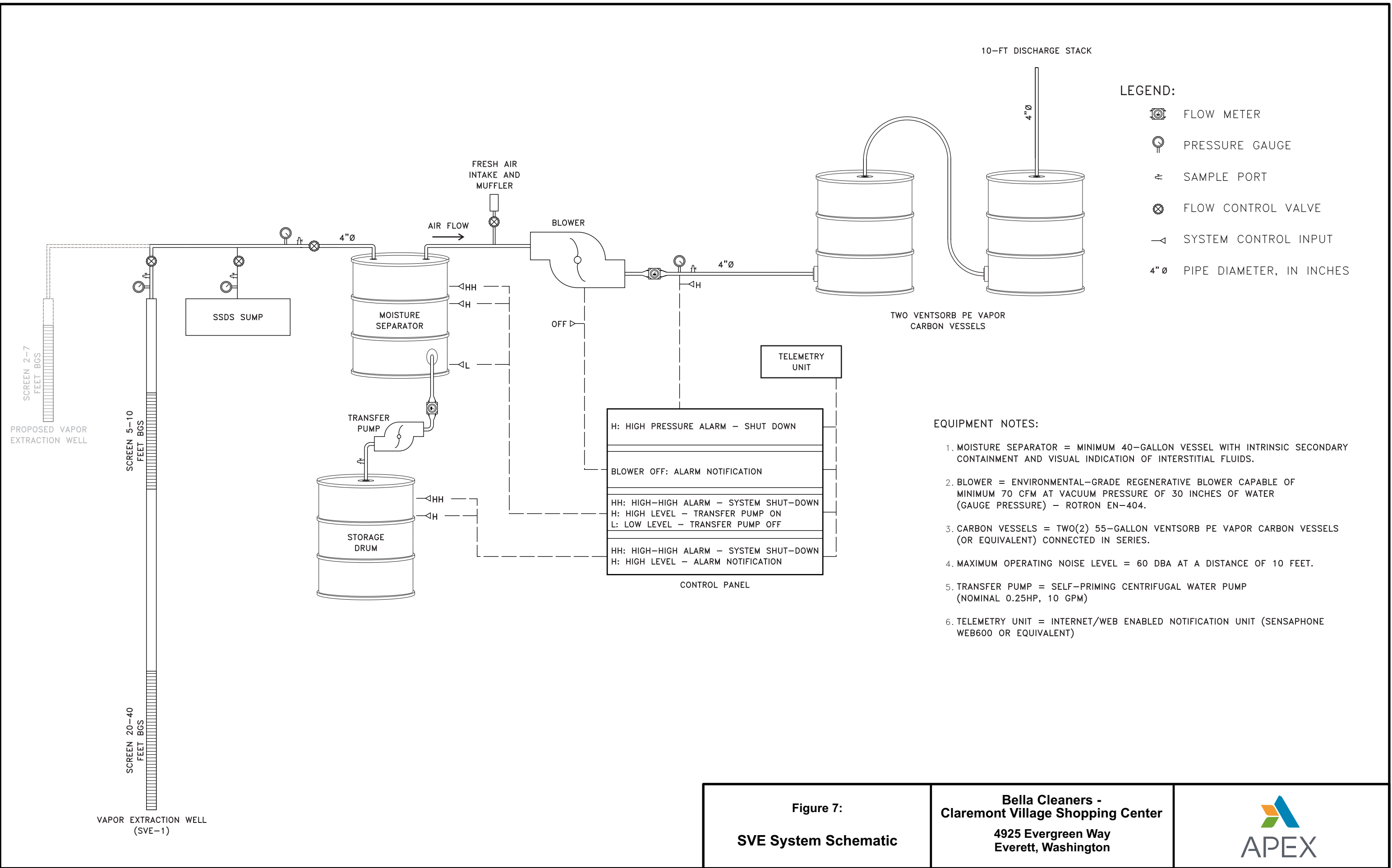
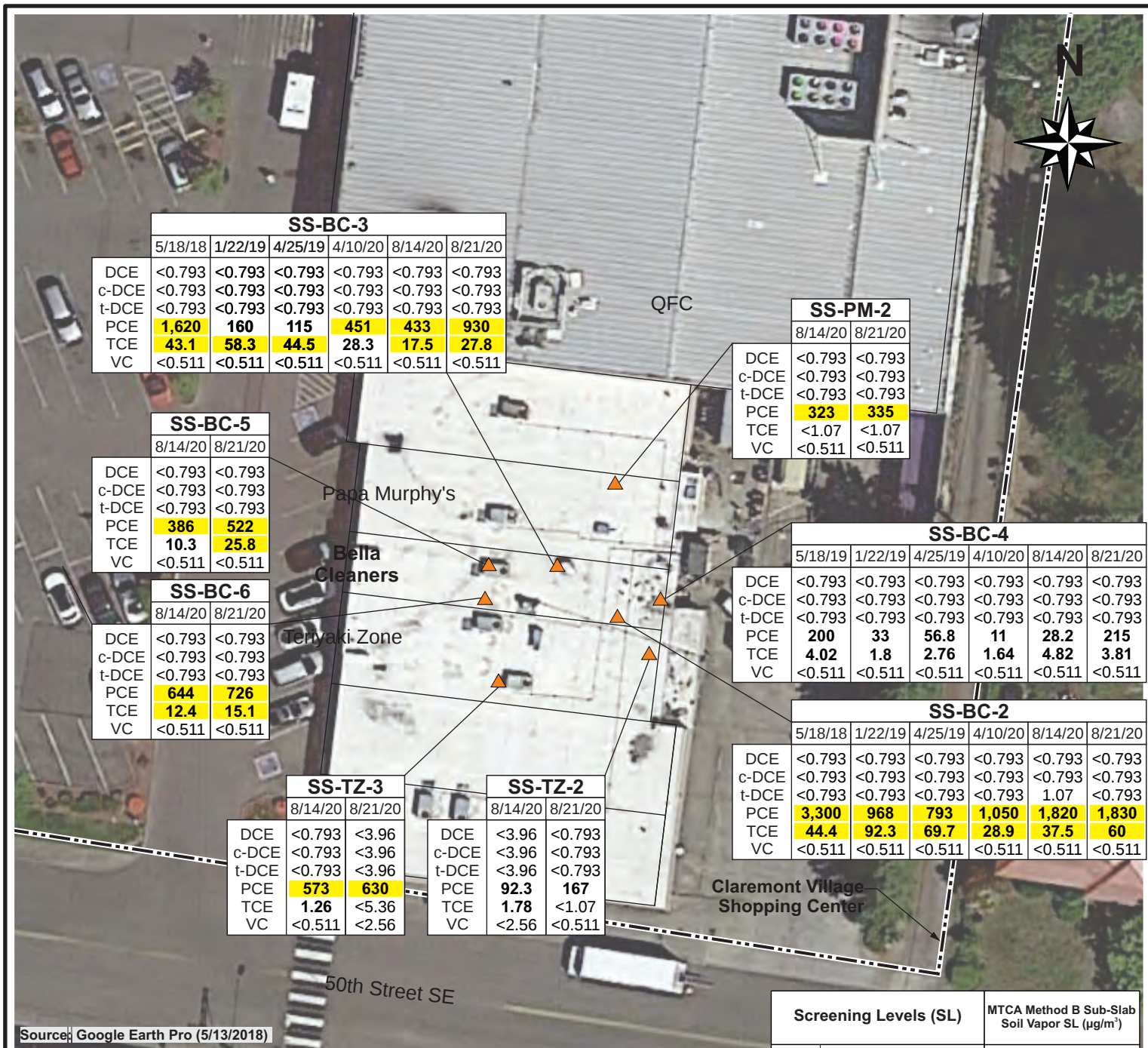


Figure 7:
SVE System Schematic

Bella Cleaners -
Claremont Village Shopping Center
4925 Evergreen Way
Everett, Washington





Source: Google Earth Pro (5/13/2018)

0 40 80
Approximate Scale in Feet

Legend:

- Monitoring Well Location
- SVE Extraction Well Location
- Sub-Slab Soil Vapor Sampling Point

SS-TZ-3			Location Identification
	8/14/20	8/21/20	
DCE	<0.793	<3.96	Date Sampled
c-DCE	<0.793	<3.96	
t-DCE	<0.793	<3.96	
PCE	573	630	Concentration in Micrograms per cubic meter (µg/m³) (Highlighted values exceed the lower value between Carcinogenic and Non-Carcinogenic of Method B soil vapor screening level.)
TCE	1.26	<5.36	
VC	<0.511	<2.56	
			Analyte Sampled

Figure 8:

Current Soil Vapor Results

**Bella Cleaners -
Claremont Village Shopping Center**
4925 Evergreen Way
Everett, Washington





Legend:

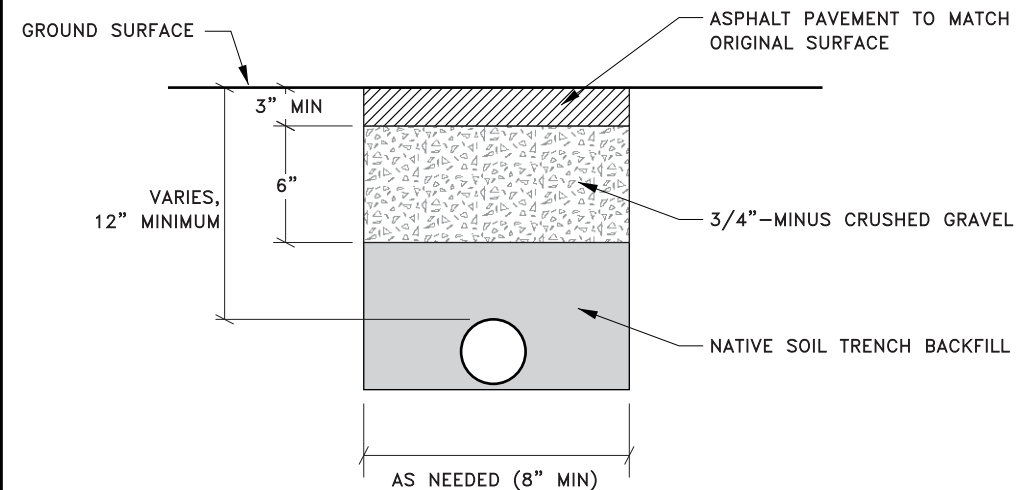
-  Proposed SVE Extraction Well
-  Proposed Sub-Slab Depressurization Pit
-  SVE Extraction Well
-  SVE Observation Well
-  Sub-Slab Soil Vapor Sampling Point
-  Calculated Radius of Influence

0 40 80
Approximate Scale in Feet

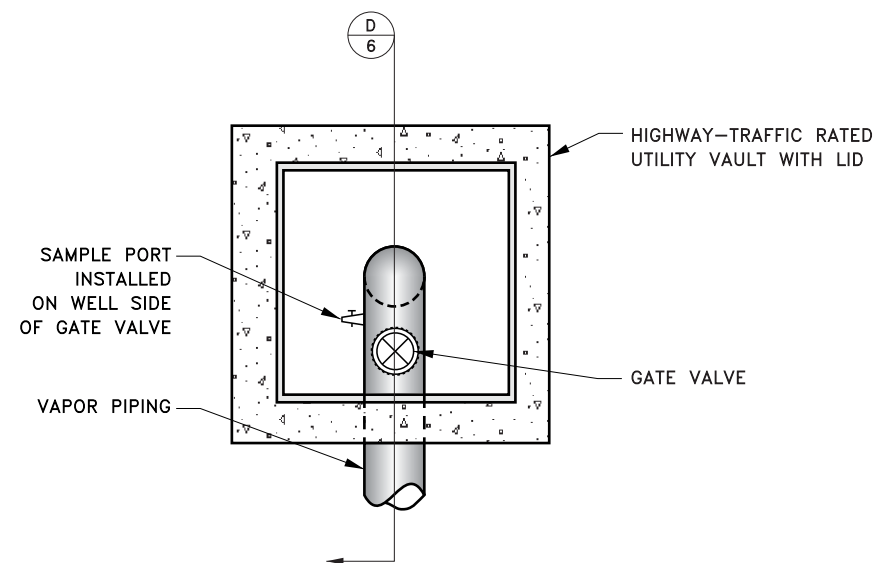
Figure 9:
**Remedial Action Area
and Modified SVE Layout**

**Bella Cleaners -
Claremont Village Shopping Center**
4925 Evergreen Way
Everett, Washington

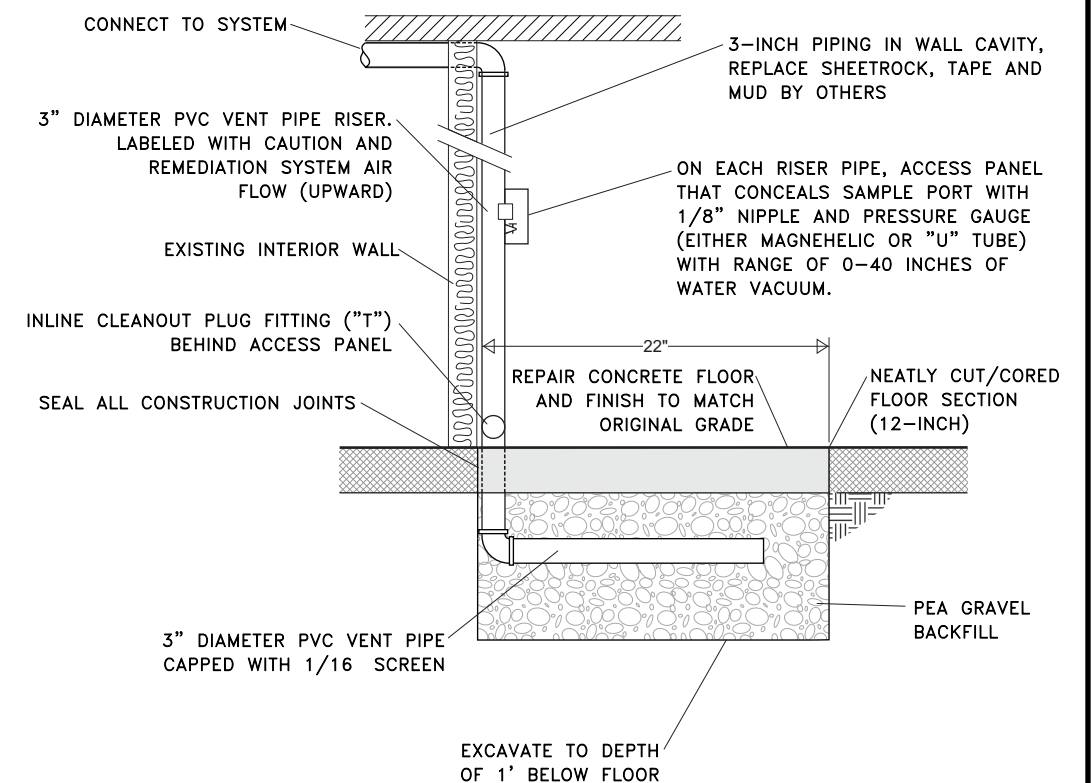




A VAPOR PIPING TRENCH DETAIL
10 NOT TO SCALE



B VAPOR WELL VAULT
10 NOT TO SCALE



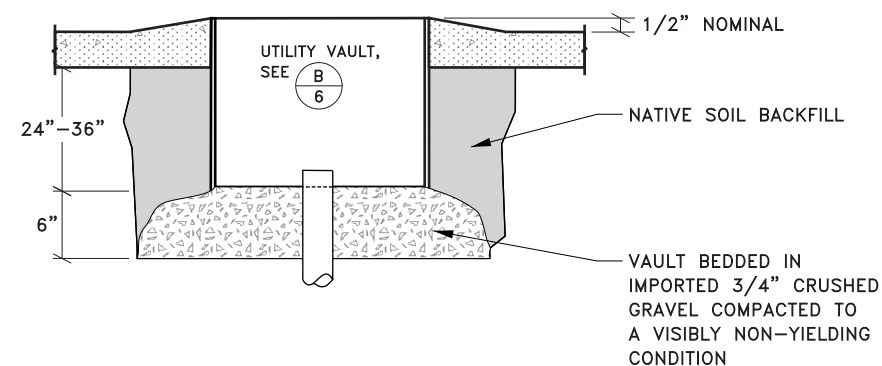
E SSDS VAPOR PIT DETAIL
10 NOT TO SCALE

NOTES:
1) PIPES, COUPLINGS, AND FITTINGS SHALL BE SCHEDULE 80 PVC AT THE DIAMETERS SHOWN ON THE FIGURES. MATERIALS USED FOR THE INSTALLATION (I.E., SOLVENT CEMENT) SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS. COUPLINGS TO INDIVIDUAL VAPOR EXTRACTION WELL CASINGS SHALL BE SIZED TO MATCH THE WELL CASING (NOMINALLY 4-INCH DIAMETER).

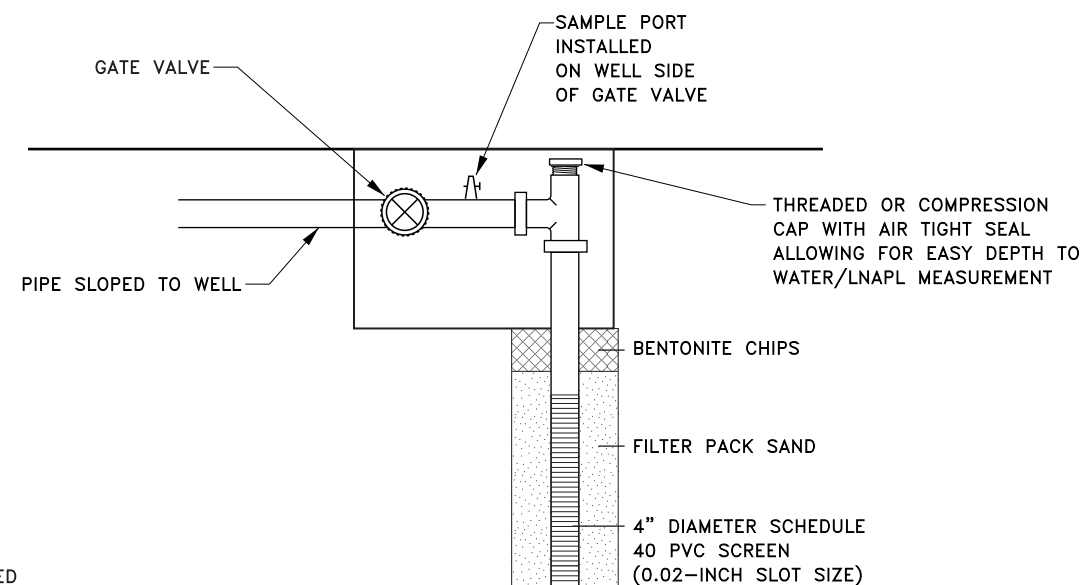
2) THE PLACEMENT OF PCC AND INSTALLATION OF ANY ASSOCIATED STEEL REINFORCEMENT SHALL CONFORM TO THE PLACEMENT SPECIFICATIONS IN CHAPTER 26 OF THE UBC.

3) PAVEMENT AND OTHER PROPERTY AND SURFACE STRUCTURES REMOVED OR DISTURBED DURING OR AS A RESULT OF CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL IN APPEARANCE AND QUALITY TO THAT BEFORE THE WORK BEGAN. IMPROVED SURFACES SHALL BE OF THE SAME MATERIAL AND MATCH THE APPEARANCE OF THE REMOVED SURFACE.

4) THE CONTRACTOR SHALL REMOVE ALL GARBAGE AND MISCELLANEOUS DEBRIS FROM THE SITE.



C VAPOR WELL VAULT INSTALLATION DETAIL
10 NOT TO SCALE



D VAPOR WELL VAULT INSTALLATION DETAIL
10 NOT TO SCALE

Figure 10:
Construction Details

Bella Cleaners -
Claremont Village Shopping Center
4925 Evergreen Way
Everett, Washington



Appendix A

Boring Logs and Well Construction Documentation

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
<u>Density</u>		<u>Density</u>		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very Stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

Minor Constituents	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

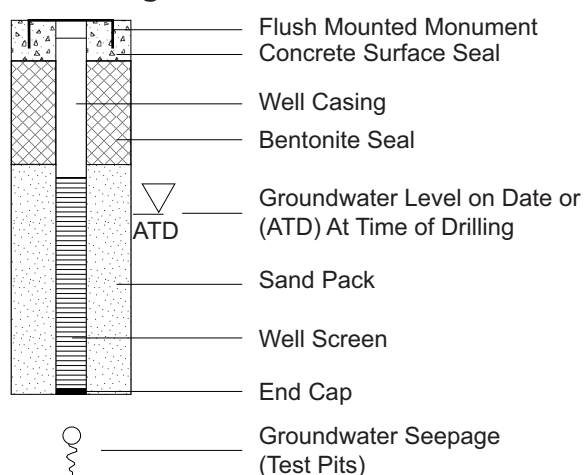
BORING AND PUSH-PROBE SYMBOLS

	Recovery
	No Recovery
	Temporarily Screened Interval
PID	Photoionization Detector Reading
W	Water Sample
	Sample Submitted for Chemical Analysis
NS	No Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
BF	Biogenic Film

TEST PIT SOIL SAMPLES

	Grab (Jar)
	Bag
	Shelby Tube

Groundwater Observations and Monitoring Well Construction



Key to Exploration Logs

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	PECO_2018-02
April 2018	

Figure
Key



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington

Boring Number: **SVE-1**

Project Number: **PECO_2016-22**

Logged By: **C. Sheridan**

Date: **April 6, 2016**

Site Conditions: **Clear**

Drilling Contractor: **Cascade Drilling**

Drilling Equipment: **HSA**

Sampler Type: **Split Spoon**

Depth to Water (ATD): **Not Encountered**

Surface Elevation: **--**

Boring Details and Notes:

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description

SAND with silt and trace angular gravel; brown, dry, medium-grained.

Air-knife to 7.5'.

Becomes dry to moist.

Bentonite Seal

Sand

PVC Screen
(0.020-Inch Slot Size)

Bentonite Seal

Sand

PVC Screen
(0.020-Inch Slot Size)

Bottom of Boring at 40.0' BGS.

Page 1/1



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington

Boring Number: **OBS-1**

Project Number: **PECO_2016-22**

Logged By: **C. Sheridan**

Date: **April 5, 2016**

Site Conditions: **Rain**

Drilling Contractor: **Cascade Drilling**

Drilling Equipment: **Geoprobe**

Sampler Type: **Split Spoon**

Depth to Water (ATD): **57.32'**

Surface Elevation: **--**

Boring Details and Notes:

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description

SAND with some medium-grained silt, trace angular gravel;
brown, moist, loose.

Air-knife to 6.0'

Increase silt to sand with silt.

Fine-grained.

Bentonite Seal

Sand

PVC Screen
(0.020-Inch Slot Size)



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington

Boring Number: **OBS-1**

Project Number: **PECO_2016-22**

Logged By: **C. Sheridan**

Date: **April 5, 2016**

Site Conditions: **Clear**

Drilling Contractor: **Cascade Drilling**

Drilling Equipment: **Geoprobe**

Sampler Type: **Split Spoon**

Depth to Water (ATD): **57.32'**

Surface Elevation: **--**

Boring Details and Notes:

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description

45		OB-1-48.5	<5	NS	Fine SAND; brown, dry, loose.	45		Bentonite Seal
50			75	NS				
55			<5	NS				
60		GW-1	<5	NS				
65					Bottom of Boring at 65.0' BGS.	65		
70						70		
75						75		



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington

Boring Number: **MW-1**

Project Number: **PECO_2018-02**

Logged By: **J. Xu**

Date: **March 15, 2018**

Site Conditions: **Sunny**

Drilling Contractor: **Cascade Drilling**

Drilling Equipment: **Sonic Rig**

Sampler Type: **Core Barrel**

Depth to Water (ATD): **60'**

Surface Elevation: **Not Measured**

Well Construction Details and Notes:

Depth, feet

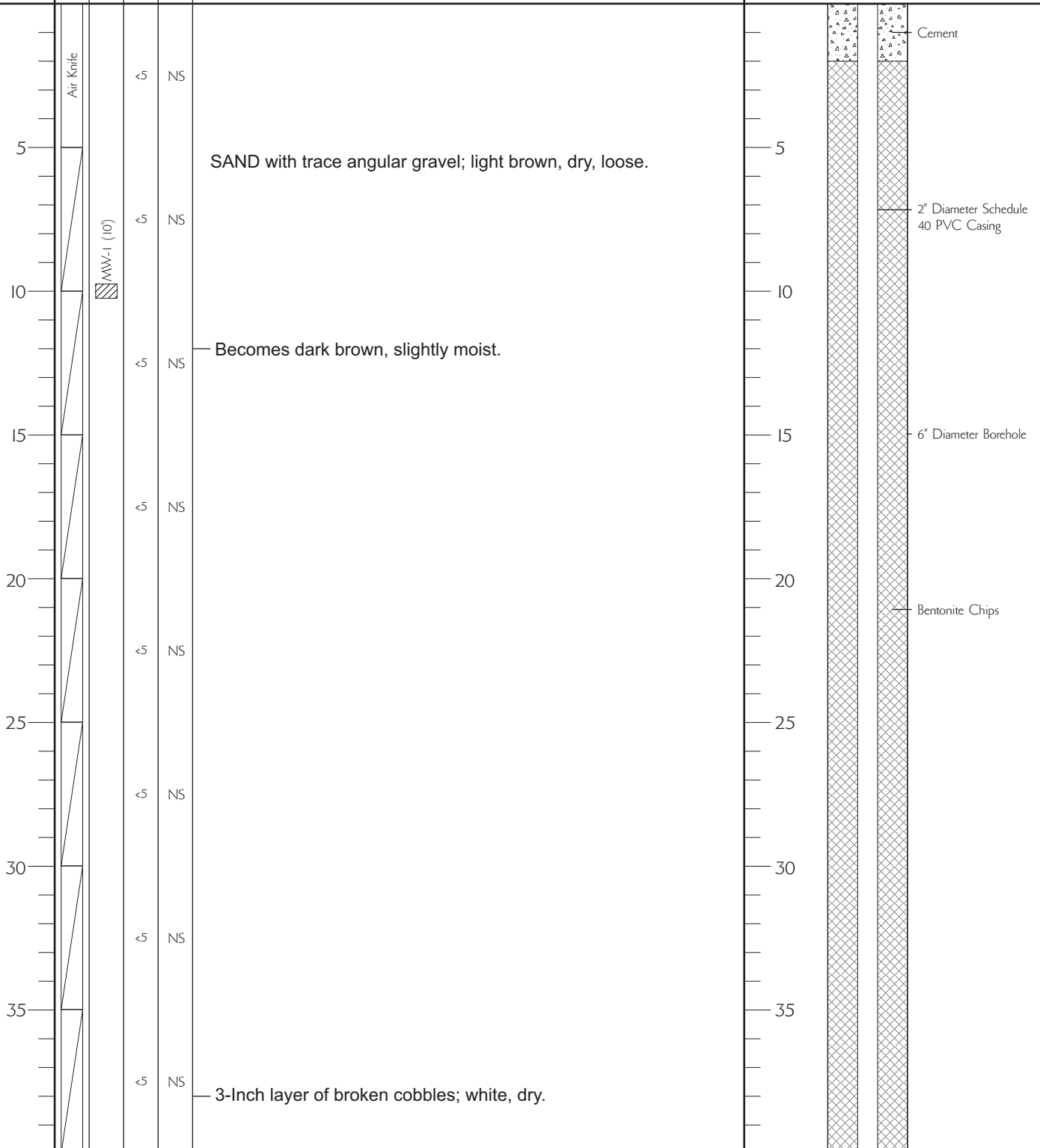
Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description





Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Claremont Village Shopping Center
4805-4933 Evergreen Way
Everett, Washington

Boring Number: **MW-1**

Project Number: **PECO_2018-02**

Logged By: **J. Xu**

Date: **March 15, 2018**

Site Conditions: **Sunny**

Drilling Contractor: **Cascade Drilling**

Drilling Equipment: **Sonic Rig**

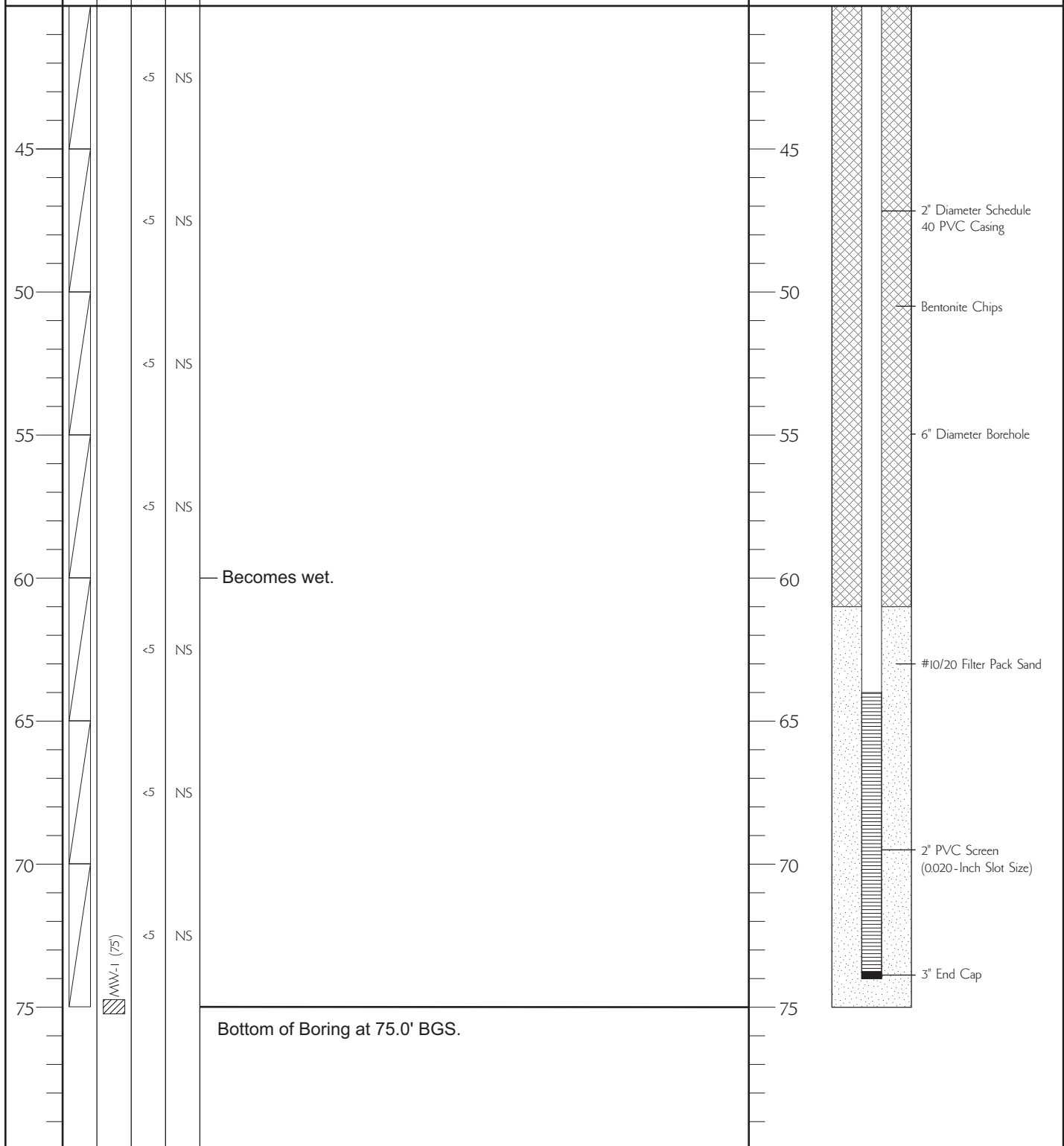
Sampler Type: **Core Barrel**

Depth to Water (ATD): **60'**

Surface Elevation: **Not Measured**

Well Construction Details and Notes:

Lithologic Description



Appendix B

Waste Disposal Documentation



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 25, 2018

Mr. K.C. Bills
Phillips Edison and Company
222 South Main Street, Suite 1730
Salt Lake City, Utah 84101

Re: Contained-in Determination for Contaminated Soils from Claremont Village Shopping Center in Everett, Washington (Ecology FS ID: 3183)

Reference: 1. Letter Report from J. Xu, Apex Companies to B. Maeng, Ecology, dated April 17, 2018
2. Email from J. Xu to B. Maeng, Ecology on April 23, 2018
3. Email from J. Xu to B. Maeng, Ecology on April 24, 2018

Dear Mr. Bills:

The Washington State Department of Ecology (Ecology) received a contained-in determination request from your environmental consultant, Apex Companies for seven (7) 55-gallon drums of contaminated soils generated during installation of SVE wells and monitoring well (SVE-2, OBS-2 and MW-1) at the Claremont Village Shopping Center located at 4925 Evergreen Way in Everett, Washington (Reference 1).

Analytical data and supplemental information for the contaminated soils were submitted to Ecology (References 1 and 2) to determine if these soils contaminated with listed dangerous waste constituents (F002) may be exempt from management as dangerous wastes per the "Contained-In Policy"¹. Ecology understands that these contaminated soils do not designate under federal characteristics (WAC 173-303-090) or State-only criteria (WAC 173-303-100).

Based on the information received and reviewed, Ecology has determined that these soils are contaminated with F002 listed dangerous waste constituents at concentrations that do not warrant management as dangerous wastes, and Ecology will not require disposal of these soils as listed dangerous wastes at a RCRA permitted dangerous waste treatment, storage and disposal (TSD) facility, provided that all of the following conditions are implemented. This contained-in determination applies only to the contaminated soils, and does not pertain to contaminated water or any mixture of contaminated soils and drilling fluids.

¹ Washington State Department of Ecology Contained-in Policy, dated February 19, 1993



You or your consultant, Apex Companies shall:

- Ensure that no standing water is present within the drums/containers holding the contaminated soils. All water must be removed to the maximum extent possible from the drums/containers and managed as F002 dangerous wastes or as otherwise allowed under Chapter 173-303 WAC. Adding bentonite or similar materials to absorb standing F002 listed waste contaminated water in the containers is not allowed. Mixtures of bentonite or similar materials and the listed waste contaminated water must be managed as F002 listed dangerous wastes;
- Directly deliver the soils to a solid waste landfill permitted under WAC 173-351 inside Washington State. If you plan to deliver the contaminated soils to a landfill outside Washington State, you must submit Ecology written approval for the contaminated soil disposal from the receiving State hazardous waste program and the out of state landfill, before the soils are delivered to the out of state landfill;
- Dispose of the contaminated soils at the solid waste landfill by May 31, 2018. The contaminated soils must be managed as dangerous wastes after May 31, 2018;
- Provide copies of all signed solid waste landfill receipts or a certificate of disposal issued by the receiving landfill for these contaminated soils to Ecology, attention of Byung Maeng, by June 30, 2018. This is an important verification step for you and your consultant to follow in order for this Ecology decision to be valid;
- Do not consolidate these contaminated soils with other soils that do not pertain to this contained in determination;
- Notify Ecology before disposal of the soils if the amount exceeds the approved amount in this letter. Ecology needs to make sure that the additional soil qualifies for this contained-in determination;
- Ensure that the transporter is properly trained to handle hazardous waste so that the transporter manages the contained-in determination soils during transport in a manner that is protective of human health and the environment;
- Take measures to prevent unauthorized contact with these soils at all times. During transport, take adequate measures to prevent spills or dispersion due to wind erosion. If you load the contaminated soils directly onto the truck bed, the truck must be lined with plastic;
- Provide instructions to the landfill operator that these soils are not to be used for daily, intermediate, or final cover;
- Provide copies of all soil analytical data to the landfill operator, upon request; and
- Do not send these contaminated soils to any incinerator, thermal desorption unit or recycling facility unless that facility is a RCRA Subtitle C permitted dangerous waste TSD facility.

Mr. K.C. Bills
April 25, 2018
Page 3 of 3

Ecology issued this determination based on the information provided and reviewed to date. This Ecology determination will be rescinded if Ecology finds that the information submitted by the property owner or its environmental consultant does not accurately represent the site conditions and is materially false or misleading, or if the Ecology requirements listed above are not followed.

This written decision only applies to the seven (7) 55-gallon drums of soils described above, and does not apply to any other area or other media. Any data used for this contained-in determination is intended for use in determining the proper disposal of the soils according to the Washington State Dangerous Waste Regulations (Chapter 173-303 WAC) and the Ecology Contained-in Policy. This letter is not an Ecology approval for dangerous waste designation or disposal of contaminated soils that may be generated or already excavated from other areas in this property.

This letter is not a No Further Action (NFA) letter and not written approval for any cleanup action plan you may have submitted. Instead, this letter only addresses the procedures for disposal of the contaminated soils according to the Washington State Dangerous Waste Regulations (Chapter 173-303 WAC). Regulatory decisions regarding the cleanup action, applicable soil and groundwater cleanup levels and any other cleanup issues must comply with the requirements under the Ecology Model Toxics Control Act (Chapter 173-340 WAC). Local agencies may have the authority to impose additional requirements on this waste stream.

If you fail to comply with the terms of this letter, Ecology may issue an administrative order and/or penalty as provided by the Revised Code of Washington, Sections 70.105.080 and/or .095 (Hazardous Waste Management Act).

If you have any questions concerning this letter, please contact me at (425) 649-7253 or bmae461@ecy.wa.gov.

Sincerely,



Byung Maeng, PE
Hazardous Waste and Toxics Reduction Program

By certified mail: 9171 9690 0935 0169 7335 63

ecc: Jie Xu, Apex Companies, jie.xu@apexcos.com
Greg Caron, Ecology-CRO
Mindy Collins, Ecology-BFO
Chuck Hoffman, Ecology-SWRO
Jing Song, Ecology-TCP
Karen Wood, Ecology-ERO
Dean Yasuda, Ecology-NWRO

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number N/A	2. Page 1 of	3. Emergency Response Phone 1-800-424-9300	4. Waste Tracking Number CWM160518CVSLLC	
5. Generator's Name and Mailing Address CLAREMONT VILLAGE STATION, LLC 4925 EVERGREEN WAY EVERETT WA 98203 Generator's Phone: 1-509-424-4707		Generator's Site Address (if different than mailing address)				
6. Transporter 1 Company Name CHEMICAL WASTE MANAGEMENT		U.S. EPA ID Number ORD089452353				
7. Transporter 2 Company Name WASTE MANAGEMENT WENATCHEE LANDFILL		U.S. EPA ID Number NON RCRA TSDF				
8. Designated Facility Name and Site Address WASTE MANAGEMENT WENATCHEE LANDFILL 181 WEBB RD WENATCHEE WA 98807 Facility's Phone: (888)908-4458		U.S. EPA ID Number NON RCRA TSDF				
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
		No	Type			
1. MATERIAL NOT REGULATED BY D O T 113422WA		8	DM	5400	P	
2.						
3.						
4.						
13. Special Handling Instructions and Additional Information 1 113422WA LFO1-NON HAZARDOUS WASTE SOLID (SOIL)						
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.						
Generator's/Offor's Printed/Typed Name Ryle Saterthwaite (On Behalf of Gen)		Signature [Signature]		Month Day Year 16 5 18		
15. International Shipments ☐ Import to U.S. ☐ Export from U.S.		Port of entry/exit: Date leaving U.S.:				
16. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name KEE LAURAN		Signature [Signature]		Month Day Year 16 5 18		
Transporter 2 Printed/Typed Name		Signature		Month Day Year		
17. Discrepancy						
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection						
17b. Alternate Facility (or Generator)		Manifest Reference Number:		U.S. EPA ID Number		
Facility's Phone:						
17c. Signature of Alternate Facility (or Generator)				Month Day Year		
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a						
Printed/Typed Name Dodge		Signature [Signature]		Month Day Year 16 5 18		

Greater Wenatchee Regional Landfill
191 Webb Road
Wenatchee, WA, 98802

Original
Ticket# 809794
Ph: (509) 884-2802

Customer Name CASCADE DRILLING CASCADE Carrier Chemical Waste Manag
Ticket Date 06/06/2018 Vehicle# 674710
Payment Type Credit Account Container
Manual Ticket# Driver
Route Check#
Hauling Ticket# Billing# 0508621
Destination Grid
Manifest 113422WA
Profile 113422WA (LF01 - Non-Hazardous Waste Solid (Soil))
Generator WA-CLAREMONT STATION VILLAGE CLAREMONT VILLAGE STATION LLC_4925 EVERGREEN
PO#

	Time	Scale	Operator	Inbound	Gross	
In	06/06/2018 12:11:50	Inbound	janelle		Tare	16340 lb
Out	06/06/2018 12:32:12	Outbound	janelle		Net	10920 lb
					Tons	5420 lb
						2.71

Comments

Product	LD%	Qty	UOM	Origin
1 Spwaste Solid Oth-Each-S	100	8	Each	
SNOHOMISH				
2 FEA FEE-VARIABLE FUEL EN	100	2.71	Tons	
SNOHOMISH				
3 TRANS MISC-TRANSPORTATIO	100	1	Each	
SNOHOMISH				
4 CDHD FEE-Chelan Douglas	100	2.71	Tons	
SNOHOMISH				

Driver's Signature



The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

*Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000
711 for Washington Relay Service • Persons with a speech disability can call (877) 833-6341*

November 19, 2019

Kevin Deis
Phillips Edison and Company
222 South Main Street
Suite 1730
Salt Lake City, UT 84101

Re: Contained-in Determination for Contaminated Soils from the Claremont Village Shopping Center in Everett, Washington

Reference: 1. Letter Report from J. Xu, Apex Companies to B. Maeng, Ecology, dated October 30, 2019
2. Email from J. Xu, Apex Companies to B. Maeng, Ecology on November 18, 2019

Dear Kevin Deis:

The Washington State Department of Ecology (Ecology) received a contained-in determination request from your environmental consultant, Apex Companies for four (4) 55-gallon drums of contaminated soils excavated from a former dry cleaners site (Tenant Space #4821) in the Claremont Village Shopping Center located at 4925 Evergreen Way, in Everett, Washington (Reference 1).

Analytical data and supplemental information for the contaminated soils were submitted to Ecology (References 1 and 2) to determine if these soils contaminated with listed dangerous waste constituents (F002) may be exempt from management as dangerous wastes per the "Contained-In Policy"¹. Ecology understands that these contaminated soils do not designate under federal characteristics (WAC 173-303-090) or State-only criteria (WAC 173-303-100).

Based on the information received and reviewed, Ecology has determined that these soils are contaminated with F002 listed dangerous waste constituents at concentrations that do not warrant management as dangerous wastes, and Ecology will not require disposal of these soils as listed dangerous wastes at a RCRA permitted dangerous waste treatment, storage and disposal (TSD) facility, provided that all of the following conditions are implemented. This contained-in determination applies only to the contaminated soils, and does not pertain to contaminated water or any mixture of contaminated soils and drilling fluids.

You or your consultant shall:

¹ Washington State Department of Ecology Contained-in Policy, dated February 19, 1993

- Ensure that no standing water is present within the drums/containers holding the contaminated soils. All water must be removed to the maximum extent possible from the drums/containers, and managed as F002 dangerous wastes or as otherwise allowed under Chapter 173-303 WAC. Adding bentonite or similar materials to absorb standing F002 listed waste contaminated water in the containers is not allowed. Mixtures of bentonite or similar materials and the listed waste contaminated water must be managed as F002 listed dangerous wastes;
- Directly deliver the soils to a solid waste landfill permitted under WAC 173-351 inside Washington State. If you plan to deliver the contaminated soils to a landfill outside Washington State, you must submit Ecology written approval for the contaminated soil disposal from the receiving State hazardous waste program and the out of state landfill, before the soils are delivered to the out of state landfill;
- Dispose of the contaminated soils at the solid waste landfill by December 31, 2019. This contained-in determination letter is no longer valid after December 31, 2019, and the contaminated soils must be managed as dangerous wastes;
- If you load the contaminated soils directly onto the truck bed or the contaminated soils are transported in roll-off bins, the truck or the roll-off bins must be lined with plastic and properly covered to prevent leaks, spills or dispersion due to wind erosion;
- Provide copies of all signed solid waste landfill receipts or a certificate of disposal issued by the receiving landfill for these contaminated soils to Ecology, attention of Byung Maeng, by January 31, 2020. This is an important verification step for you and your consultant to follow in order for this Ecology decision to be valid;
- Do not consolidate these contaminated soils with other soils that do not pertain to this contained in determination;
- Notify Ecology before disposal of the soils if the amount exceeds the approved amount in this letter. Ecology needs to make sure that the additional soil qualifies for this contained-in determination;
- Ensure that the transporter is properly trained to handle hazardous waste so that the transporter manages the contained-in determination soils during transport in a manner that is protective of human health and the environment;
- Take measures to prevent unauthorized contact with these soils at all times;
- Provide instructions to the landfill operator that these soils are not to be used for daily, intermediate, or final cover;
- Provide copies of all soil analytical data to the landfill operator, upon request; and

- Do not send these contaminated soils to any incinerator, thermal desorption unit or recycling facility unless that facility is a RCRA Subtitle C permitted dangerous waste TSD facility.

Ecology issued this determination based on the information provided and reviewed to date. Ecology will rescind this approval if the information submitted by the property owner or its environmental consultant does not accurately represent the site conditions or is materially false or misleading, or if the Ecology requirements listed above are not followed.

This written decision only applies to four (4) 55-gallon drums of soils described above, and does not apply to any other area or other media. Any data used for this contained-in determination is intended for use in determining the proper disposal of the soils according to the Washington State Dangerous Waste Regulations (Chapter 173-303 WAC) and the Ecology Contained-in Policy. This letter is not an Ecology approval for dangerous waste designation or disposal of contaminated soils that may be generated or already excavated from other areas in this property. Local agencies may have the authority to impose additional requirements on this waste stream.

This letter is not a No Further Action (NFA) letter and not written approval for any cleanup action plan you may have submitted. Regulatory decisions regarding the cleanup action, applicable soil and groundwater cleanup levels and any other cleanup issues must comply with the requirements under the Ecology Model Toxics Control Act (Chapter 173-340 WAC).

If you fail to comply with the terms of this letter, Ecology may issue an administrative order and/or penalty as provided by the Revised Code of Washington, Sections 70.105.080 and/or .095 (Hazardous Waste Management Act).

If you have any questions concerning this letter, please contact me at (425) 649-7253 or bmae461@ecy.wa.gov.

Sincerely,



Byung Maeng, PE
Hazardous Waste and Toxics Reduction Program

Sent by Certified Mail: 9171 9690 0935 0214 2535 27

ecc: Eyasu Ayalew, Seattle-King County Public Health, eyalew@kingcounty.gov
Darshan Dhillon, Seattle-King County Public Health, darshan.dhillon@kingcounty.gov
Jie Xu, Apex Companies, jie.xu@apexc.com
Greg Caron, Ecology
Mindy Collins, Ecology
Christa Colouzis, Ecology
Chuck Hoffman, Ecology
Jing Song, Ecology
Karen Wood, Ecology
Dean Yasuda, Ecology

GENERATOR ↓ INT'L ↓ TRANSPORTER ↓ DESIGNATED FACILITY ↓	NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number <i>N/A</i>		2. Page 1 of <i>1</i>		3. Emergency Response Phone <i>(800) 741-9300</i>		4. Waste Tracking Number <i>CVS12919-CD1</i>			
	5. Generator's Name and Mailing Address CLAREMONT VILLAGE STATION LLC 4821 EVERGREEN WAY EVERETT WA 98203 Generator's Phone: <i>(801) 845-4372</i>						Generator's Site Address (if different than mailing address)					
	6. Transporter 1 Company Name CASCADE DRILLING						U.S. EPA ID Number					
	7. Transporter 2 Company Name						U.S. EPA ID Number					
	8. Designated Facility Name and Site Address WM/GREATER WENATCHEE REGIONAL LANDFILL 191 WEBB PLACE SOUTH EAST WENATCHEE WA 98807 Facility's Phone: <i>(509) 884-2802</i>						U.S. EPA ID Number NON RCRA TSDF					
9. Waste Shipping Name and Description						10. Containers		11. Total Quantity	12. Unit Wt./Vol.			
						No.	Type					
1. MATERIAL NOT REGULATED BY D.O.T. <i>114898WA</i>						<i>4</i>	<i>DM</i>	<i>2,800</i>	<i>P</i>			
2.												
3.												
4.												
13. Special Handling Instructions and Additional Information <i>1. 114898WA-LF01-SOIL CUTTINGS</i>												
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.												
Generator's/Offoror's Printed/Typed Name <i>Nikk Tachim on behalf of generator</i>						Signature <i>[Signature]</i>		Month <i>12</i>	Day <i>10</i>	Year <i>19</i>		
15. International Shipments ☐ Import to U.S. ☐ Export from U.S.						Port of entry/exit: _____ Date leaving U.S.: _____						
16. Transporter Acknowledgment of Receipt of Materials												
Transporter 1 Printed/Typed Name <i>Nikk Tachim</i>						Signature <i>[Signature]</i>		Month <i>12</i>	Day <i>10</i>	Year <i>19</i>		
Transporter 2 Printed/Typed Name						Signature		Month	Day	Year		
17. Discrepancy												
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection												
Manifest Reference Number:												
17b. Alternate Facility (or Generator) U.S. EPA ID Number												
Facility's Phone:												
17c. Signature of Alternate Facility (or Generator) Month Day Year												
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a												
Printed/Typed Name <i>J. Solge</i>						Signature <i>[Signature]</i>		Month <i>12</i>	Day <i>10</i>	Year <i>19</i>		

Greater Wenatchee Regional Landfill
191 Webb Road
Wenatchee, WA, 98802

Original
Ticket# 855815
Ph: (509) 884-2802

Customer Name CASCADE DRILLING BOTHELL Carrier Cascade Drilling
Ticket Date 12/10/2019 Vehicle# 0
Payment Type Credit Account Container
Manual Ticket# Driver
Route Check#
Hauling Ticket# Billing# 0508653
Destination Grid
Manifest CVS12919-CD1
Profile 114898WA (LF01 Non-Hazardous Waste Solid (Soil Cuttings))
Generator WA-CLAREMONT VILLAGE STATION L CLAREMONT VILLAGE STATION LLC 4821 EVERGREEN
PO#

Time	Scale	Operator	Inbound	Gross	
In 12/10/2019 13:51:14	Inbound	Janelle		Tare	14220 lb
Out 12/10/2019 14:07:57	Outbound	tgarcia9		Net	11340 lb
				Tons	2880 lb
					1.44

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	1.44	Tons				SNOHOMISH
2 EVF-P-Standard Environm	100		%				
3 CDHD FEE-Chelan Douglas	100	1.44	Tons				

Total Tax/Fees
Total Ticket

Driver's Signature



The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.



PUBLIC WORKS

March 7, 2018

Jie Xu
Project Manager
Apex Companies
Two Union Square, Suite 4200
Seattle, WA 98101

Subject: Discharge Authorization Extension to No. MD -8-2017
Claremont Village Shopping Center
Expires: December 31, 2018

Dear Ms. Xu

Apex Companies is hereby authorized to discharge site related water from your work for Claremont Village Shopping Center. Discharge related to the collection of groundwater samples will be allowed for the project duration. The discharge will be allowed upon the City's receipt of the signed acceptance of this letter and with the proper notification to the City that the work will proceed. There shall be no water sources included in the discharges other than what is authorized.

This authorization is based on the information you provided; we understand that this is sampling of the ground water and will generate minimal amounts of discharge. Discharge will be allowed based on compliance with the conditions of this authorization.

The point of discharge will be within the city's sewer collection system as directed by your city representative.

You will be billed separately for the amount discharged to the city sewers based on the monthly or total flow. As this project will have small amounts of discharge and not on a frequent schedule sewer billings will be either a once a year or quarterly depending on the amounts discharged and will include our current sewer rate (currently \$7.739 per 100 cubic feet) AND the industrial surcharge of \$0.19 per thousand gallons of flow.

This Discharge Authorization is issued with the following conditions:

- 1) You must comply with the general use and discharge requirements of the Industrial Pretreatment Ordinance #3070-08 as amended (attached), as well as any applicable Federal and State regulations.
- 2) The City solely reserves the right to modify, suspend, or terminate this authorization at any time once issued.
- 3) Your City representative and point of contact for discharge is Brian Doolan at 425-257-8828 or bdoolan@everettwa.gov. You need to notify Brian prior to discharge and when your project is completed. You must also report monthly flows to Brian.

- 4) The point of discharge shall be as directed by the City's project representative, and limited to a typical flow of 50 gallons per minute or less.
- 5) Peak flow up to 100 gpm will be allowed, but only by prior notification to the City representative and if the duration is specified and accepted.
- 6) Discharge will enter the city's combined sewer system; the discharge may be limited and not allowed during intense rainfall.
- 7) All flow shall be routed through a system to remove any free floatables and settleable solids, or be free of floatable and settleable solids. Apex Companies will monitor and prevent that there are no floatable and settleable solids in discharge and shall use an onsite storage tank to first pump any dewatering or construction water into, for pre-settlement needs related to high sediment or turbidity prior to discharge to the City's sewers. The City will inspect the tank and volume prior to discharge. Contact Brian Doolan for inspection of the tank. Notify Brian at least two working days prior to your discharge request.
- 8) At any time the City can direct the point of discharge to an alternative location that best suits the City.
- 9) Discharge operations shall comply with the City's Noise Ordinance.
- 10) Apex Companies is solely responsible for spills of any kind related to the discharge operations, including reporting to Department of Ecology, clean-up, and any repairs or restoration, and costs for City to oversee and respond. The City must be notified immediately of any spill.
- 11) City of Everett personnel may take samples of the effluent for analysis and may inspect your site to verify compliance at any time.
- 12) Maximum rate of flow shall not cause capacity problems in the receiving sewer or at any point downstream of the discharge; the City may modify the flow rate at any time.
- 13) The water shall be sampled at least once for the following constituents during the period of discharge. The discharge is subject to these limits:

As	0.5	mg/L
Cd	0.24	"
Cr	5.0	"
Cu	3.0	"
Pb	1.9	"
Hg	0.1	"
Ni	2.83	"
Ag	0.49	"
Zn	4.0	"
CN-	0.65	"
Nonpolar FOG	200	"

Sample results can be submitted either prior or post discharge, but must be submitted to verify discharge limits.

Should lab samples indicate higher than allowed discharge limits, by signing and returning this discharge authorization Apex Companies agrees to pay the over-limits premiums.

All discharge data from the site shall be reported. The total amount of flow to the sanitary sewer shall be reported at the completion of the discharge along with the data required. Please send reports to the following:

Gene Bennett
Industrial Waste Inspector
City of Everett
3200 Cedar Street
Everett, WA 98201
425-257-8240

Brian Doolan
M & O Supervisor
City of Everett
3200 Cedar Street
Everett WA 98201

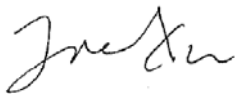
- 14) The City reserves the right to bill Apex Companies fees for city work beyond our normal site monitoring for sewer related regulatory compliance or for overseeing this discharge authorization.
- 15) Apex Companies shall provide a 24-hour contact number prior to any discharge; Apex Companies agrees to shutdown of the discharge immediately (within 30 minutes) if the City deems it necessary for any reason. Please provide the phone number to the City representative.
- 16) Apex Companies must install a meter to monitor the flow rate of discharge and report the monthly volumes to Brian Doolan. Brian also must inspect and approve the meter installation prior to discharge. Apex Companies will not exceed 50 gallons per minute, unless per Condition No. 5, and must keep a log for the discharge volumes noted. The log and amount of flow must be submitted to Brian Doolan at the end of the project.

Please contact me at 257-8967 (or msadler@everettwa.gov) if you have any questions.

Sincerely,

Mark Sadler, PE
Maintenance Superintendent

Accepted By:



Apex Companies

Date: 4/6/2018

Attachment: General Permit Provisions
Pretreatment Ordinance

c: Gene Bennett, City of Everett
Brian Doolan, City of Everett
Rick Osborne, City of Everett
Chron File
IPT File

From: [Brian Doolan](#)
To: [Jie Xu](#)
Cc: [John Foxwell](#)
Subject: RE: Discharge Permit
Date: Wednesday, July 18, 2018 3:24:03 PM
Attachments: [image001.jpg](#)
[image003.png](#)
[image006.png](#)
[image007.png](#)
[image005.jpg](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)

Good afternoon,

Looks good to me. Feel free to discharge. Thanks for the results.

Brian Doolan

Maintenance & Operations Supervisor | Public Works, Sewer & Drainage Department

P: 425.257.8828 | **C:** 425.501.5124 | 3200 Cedar Street, Everett, WA 98201

everettwa.gov/publicworks | [Facebook](#) | [Twitter](#)

Note: Emails and attachments sent to and from the City of Everett are public records and may be subject to disclosure pursuant to the Public Records Act.

From: Jie Xu <Jie.Xu@apexcos.com>
Sent: Wednesday, July 18, 2018 3:14 PM
To: Brian Doolan <BDoolan@everettwa.gov>
Cc: John Foxwell <JFoxwell@apexcos.com>
Subject: RE: Discharge Permit

Hi Brian,

We have tested one water drum onsite. I attached the lab analytical results to this email for your approval. The results are below the discharge limits listed in the discharge permit. Please let us know if you have any questions. Thanks!

Best,
Jie

	Jie Xu Environmental Project Manager 600 Stewart Street, Suite 400 Seattle, WA 98101 O) 503-924-4704 x 1914 M) 206-491-8612 ☐ Add me to your contact list!
---	--

ENR Top 30 All-Environmental Firm



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From: Jie Xu
Sent: Wednesday, May 30, 2018 3:57 PM
To: Brian Doolan <BDoolan@everettwa.gov>
Subject: RE: Discharge Permit

Thanks!!



Follow Apex on ☐ and Like us on ☐

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From: Brian Doolan <BDoolan@everettwa.gov>
Sent: Wednesday, May 30, 2018 3:57 PM
To: Jie Xu <Jie.Xu@apexc.com>
Subject: RE: Discharge Permit

Good afternoon,

Looks good. Thanks for forwarding this on. You are good to discharge as directed in the permit.

Brian Doolan

Maintenance & Operations Supervisor | Public Works, Sewer & Drainage Department
P: 425.257.8828 | **C:** 425.501.5124 | 3200 Cedar Street, Everett, WA 98201
everettwa.gov/publicworks | [Facebook](#) | [Twitter](#)

Note: Emails and attachments sent to and from the City of Everett are public records and may be subject to disclosure pursuant to the Public Records Act.

From: Jie Xu <Jie.Xu@apexc.com>
Sent: Wednesday, May 30, 2018 2:55 PM
To: Brian Doolan <BDoolan@everettwa.gov>
Cc: John Foxwell <JFoxwell@apexc.com>

Subject: RE: Discharge Permit

Hey Brian,

We have generated one deco water drum during our site investigate. I attached the lab analytical results to this email for your approval. The results are below the discharge limits listed in the discharge permit. Please let us know if you have any questions. Thanks!

Best,
Jie



Follow Apex on ☐ and Like us on ☐

Privacy Notice: This message and any attachment(s) hereto are intended solely for the individual(s) listed in the masthead. This message may contain information that is privileged or otherwise protected from disclosure. Any review, dissemination or use of this message or its contents by persons other than the addressee(s) is strictly prohibited and may be unlawful. If you have received this message in error, please notify the sender by return e-mail and delete the message from your system. Thank you.

From: Brian Doolan <BDoolan@everettwa.gov>

Sent: Friday, April 6, 2018 2:54 PM

To: Jie Xu <Jie.Xu@apexcoss.com>

Subject: RE: Discharge Permit

Good afternoon,

Thank you for getting this to me. Here is the fully signed copy with the pretreatment ordinance also. Let me know if there is anything else I can do. Thanks

Brian Doolan, P.E.

Maintenance & Operations Supervisor

Public Works Sewer & Drainage Department

P: 425.257.8828 / C:425.501.5124

E: bdoolan@everettwa.gov

3200 Cedar Street, Everett, WA 98201

www.everettwa.gov

NOTICE: Emails and attachments sent to and from the City of Everett are public records and may be subject to disclosure pursuant to the Public Records Act.

From: Jie Xu <Jie.Xu@apexc.com>
Sent: Friday, April 6, 2018 1:48 PM
To: Brian Doolan <BDoolan@everettwa.gov>
Subject: RE: Discharge Permit

Good afternoon Brain,

I apologize for the delay. I was waiting for approval for others. Please see attached signed document. Let me know if you have questions. Thanks very much for your help and patient!

Have a good weekend!

Best,



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From: Brian Doolan <BDoolan@everettwa.gov>
Sent: Thursday, March 29, 2018 7:33 AM
To: Jie Xu <Jie.Xu@apexc.com>
Subject: Discharge Permit

Good morning,

I just wanted to check in and make sure that the extension for the discharge permit I sent you looks ok and see if you have had time to get it signed and back to me so I can get it signed on our end? Let me know if you have questions. Thanks

Brian Doolan, P.E.

Maintenance & Operations Supervisor
Public Works Sewer & Drainage Department

P: 425.257.8828 / C:425.501.5124

E: bdoolan@everettwa.gov

3200 Cedar Street, Everett, WA 98201

www.everettwa.gov

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Appendix C

Laboratory Reports

March 26, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L978402
Samples Received: 03/17/2018
Project Number: PECO_2018_001
Description: Claremont Village Shopping Cent
Site: CLAREMONT VILLA
Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SVE-2 (10') L978402-01 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/13/18 13:20	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/13/18 13:20	03/21/18 04:19	ACG

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SVE-2 (40') L978402-02 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/13/18 16:00	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/13/18 16:00	03/21/18 04:39	ACG

OBS-2 (10') L978402-03 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/14/18 13:45	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/14/18 13:45	03/21/18 04:59	ACG

OBS-2 (38') L978402-04 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/14/18 16:58	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/14/18 16:58	03/21/18 05:19	ACG

MW-1 (10') L978402-05 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/15/18 13:10	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/15/18 13:10	03/21/18 05:38	ACG

DECON WATER L978402-06 GW

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/16/18 09:20	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086626	1	03/19/18 23:37	03/19/18 23:37	LRL

MW-1 (75') L978402-07 Solid

			Collected by	Collected date/time	Received date/time
			Jie Xu	03/16/18 10:35	03/17/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1088059	1	03/23/18 10:52	03/23/18 11:04	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1087146	1	03/16/18 10:35	03/21/18 05:58	ACG



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.3		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0110	0.0548	1	03/21/2018 04:19	WG1087146
Acrylonitrile	U		0.00196	0.0110	1	03/21/2018 04:19	WG1087146
Benzene	U		0.000296	0.00110	1	03/21/2018 04:19	WG1087146
Bromobenzene	U		0.000311	0.00110	1	03/21/2018 04:19	WG1087146
Bromodichloromethane	U		0.000278	0.00110	1	03/21/2018 04:19	WG1087146
Bromoform	U		0.000464	0.00110	1	03/21/2018 04:19	WG1087146
Bromomethane	U		0.00147	0.00548	1	03/21/2018 04:19	WG1087146
n-Butylbenzene	U		0.000283	0.00110	1	03/21/2018 04:19	WG1087146
sec-Butylbenzene	U		0.000220	0.00110	1	03/21/2018 04:19	WG1087146
tert-Butylbenzene	U		0.000226	0.00110	1	03/21/2018 04:19	WG1087146
Carbon tetrachloride	U		0.000359	0.00110	1	03/21/2018 04:19	WG1087146
Chlorobenzene	U		0.000232	0.00110	1	03/21/2018 04:19	WG1087146
Chlorodibromomethane	U		0.000408	0.00110	1	03/21/2018 04:19	WG1087146
Chloroethane	U		0.00104	0.00548	1	03/21/2018 04:19	WG1087146
Chloroform	U		0.000251	0.00548	1	03/21/2018 04:19	WG1087146
Chloromethane	U	JO	0.000411	0.00274	1	03/21/2018 04:19	WG1087146
2-Chlorotoluene	U		0.000330	0.00110	1	03/21/2018 04:19	WG1087146
4-Chlorotoluene	U		0.000263	0.00110	1	03/21/2018 04:19	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00115	0.00548	1	03/21/2018 04:19	WG1087146
1,2-Dibromoethane	U		0.000376	0.00110	1	03/21/2018 04:19	WG1087146
Dibromomethane	U		0.000418	0.00110	1	03/21/2018 04:19	WG1087146
1,2-Dichlorobenzene	U		0.000334	0.00110	1	03/21/2018 04:19	WG1087146
1,3-Dichlorobenzene	U		0.000262	0.00110	1	03/21/2018 04:19	WG1087146
1,4-Dichlorobenzene	U		0.000247	0.00110	1	03/21/2018 04:19	WG1087146
Dichlorodifluoromethane	U	JO	0.000781	0.00548	1	03/21/2018 04:19	WG1087146
1,1-Dichloroethane	U		0.000218	0.00110	1	03/21/2018 04:19	WG1087146
1,2-Dichloroethane	U		0.000290	0.00110	1	03/21/2018 04:19	WG1087146
1,1-Dichloroethene	U		0.000332	0.00110	1	03/21/2018 04:19	WG1087146
cis-1,2-Dichloroethene	U		0.000257	0.00110	1	03/21/2018 04:19	WG1087146
trans-1,2-Dichloroethene	U		0.000289	0.00110	1	03/21/2018 04:19	WG1087146
1,2-Dichloropropane	U		0.000392	0.00110	1	03/21/2018 04:19	WG1087146
1,1-Dichloropropene	U		0.000347	0.00110	1	03/21/2018 04:19	WG1087146
1,3-Dichloropropane	U		0.000227	0.00110	1	03/21/2018 04:19	WG1087146
cis-1,3-Dichloropropene	U		0.000287	0.00110	1	03/21/2018 04:19	WG1087146
trans-1,3-Dichloropropene	U		0.000292	0.00110	1	03/21/2018 04:19	WG1087146
2,2-Dichloropropane	U		0.000306	0.00110	1	03/21/2018 04:19	WG1087146
Di-isopropyl ether	U		0.000272	0.00110	1	03/21/2018 04:19	WG1087146
Ethylbenzene	U		0.000325	0.00110	1	03/21/2018 04:19	WG1087146
Hexachloro-1,3-butadiene	U		0.000375	0.00110	1	03/21/2018 04:19	WG1087146
Isopropylbenzene	U		0.000266	0.00110	1	03/21/2018 04:19	WG1087146
p-Isopropyltoluene	U		0.000223	0.00110	1	03/21/2018 04:19	WG1087146
2-Butanone (MEK)	U	JO	0.00513	0.0110	1	03/21/2018 04:19	WG1087146
Methylene Chloride	U		0.00110	0.00548	1	03/21/2018 04:19	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00206	0.0110	1	03/21/2018 04:19	WG1087146
Methyl tert-butyl ether	U		0.000232	0.00110	1	03/21/2018 04:19	WG1087146
Naphthalene	U		0.00110	0.00548	1	03/21/2018 04:19	WG1087146
n-Propylbenzene	U		0.000226	0.00110	1	03/21/2018 04:19	WG1087146
Styrene	U		0.000256	0.00110	1	03/21/2018 04:19	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000289	0.00110	1	03/21/2018 04:19	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000400	0.00110	1	03/21/2018 04:19	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000400	0.00110	1	03/21/2018 04:19	WG1087146
Tetrachloroethene	0.00921		0.000302	0.00110	1	03/21/2018 04:19	WG1087146
Toluene	U		0.000475	0.00548	1	03/21/2018 04:19	WG1087146
1,2,3-Trichlorobenzene	U		0.000335	0.00110	1	03/21/2018 04:19	WG1087146
1,2,4-Trichlorobenzene	U		0.000425	0.00110	1	03/21/2018 04:19	WG1087146
1,1,1-Trichloroethane	U		0.000313	0.00110	1	03/21/2018 04:19	WG1087146
1,1,2-Trichloroethane	U		0.000303	0.00110	1	03/21/2018 04:19	WG1087146
Trichloroethene	U		0.000306	0.00110	1	03/21/2018 04:19	WG1087146
Trichlorofluoromethane	U		0.000418	0.00548	1	03/21/2018 04:19	WG1087146
1,2,3-Trichloropropane	U		0.000811	0.00274	1	03/21/2018 04:19	WG1087146
1,2,4-Trimethylbenzene	U		0.000231	0.00110	1	03/21/2018 04:19	WG1087146
1,2,3-Trimethylbenzene	U		0.000314	0.00110	1	03/21/2018 04:19	WG1087146
Vinyl chloride	U		0.000319	0.00110	1	03/21/2018 04:19	WG1087146
1,3,5-Trimethylbenzene	U		0.000291	0.00110	1	03/21/2018 04:19	WG1087146
Xylenes, Total	U		0.000764	0.00329	1	03/21/2018 04:19	WG1087146
(S) Toluene-d8	106			80.0-120		03/21/2018 04:19	WG1087146
(S) Dibromofluoromethane	100			74.0-131		03/21/2018 04:19	WG1087146
(S) 4-Bromofluorobenzene	91.4			64.0-132		03/21/2018 04:19	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.0		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0106	0.0532	1	03/21/2018 04:39	WG1087146
Acrylonitrile	U		0.00190	0.0106	1	03/21/2018 04:39	WG1087146
Benzene	U		0.000287	0.00106	1	03/21/2018 04:39	WG1087146
Bromobenzene	U		0.000302	0.00106	1	03/21/2018 04:39	WG1087146
Bromodichloromethane	U		0.000270	0.00106	1	03/21/2018 04:39	WG1087146
Bromoform	U		0.000451	0.00106	1	03/21/2018 04:39	WG1087146
Bromomethane	U		0.00143	0.00532	1	03/21/2018 04:39	WG1087146
n-Butylbenzene	U		0.000275	0.00106	1	03/21/2018 04:39	WG1087146
sec-Butylbenzene	U		0.000214	0.00106	1	03/21/2018 04:39	WG1087146
tert-Butylbenzene	U		0.000219	0.00106	1	03/21/2018 04:39	WG1087146
Carbon tetrachloride	U		0.000349	0.00106	1	03/21/2018 04:39	WG1087146
Chlorobenzene	U		0.000226	0.00106	1	03/21/2018 04:39	WG1087146
Chlorodibromomethane	U		0.000397	0.00106	1	03/21/2018 04:39	WG1087146
Chloroethane	U		0.00101	0.00532	1	03/21/2018 04:39	WG1087146
Chloroform	U		0.000244	0.00532	1	03/21/2018 04:39	WG1087146
Chloromethane	U	JO	0.000399	0.00266	1	03/21/2018 04:39	WG1087146
2-Chlorotoluene	U		0.000320	0.00106	1	03/21/2018 04:39	WG1087146
4-Chlorotoluene	U		0.000255	0.00106	1	03/21/2018 04:39	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00112	0.00532	1	03/21/2018 04:39	WG1087146
1,2-Dibromoethane	U		0.000365	0.00106	1	03/21/2018 04:39	WG1087146
Dibromomethane	U		0.000406	0.00106	1	03/21/2018 04:39	WG1087146
1,2-Dichlorobenzene	U		0.000325	0.00106	1	03/21/2018 04:39	WG1087146
1,3-Dichlorobenzene	U		0.000254	0.00106	1	03/21/2018 04:39	WG1087146
1,4-Dichlorobenzene	U		0.000240	0.00106	1	03/21/2018 04:39	WG1087146
Dichlorodifluoromethane	U	JO	0.000759	0.00532	1	03/21/2018 04:39	WG1087146
1,1-Dichloroethane	U		0.000212	0.00106	1	03/21/2018 04:39	WG1087146
1,2-Dichloroethane	U		0.000282	0.00106	1	03/21/2018 04:39	WG1087146
1,1-Dichloroethene	U		0.000322	0.00106	1	03/21/2018 04:39	WG1087146
cis-1,2-Dichloroethene	U		0.000250	0.00106	1	03/21/2018 04:39	WG1087146
trans-1,2-Dichloroethene	U		0.000281	0.00106	1	03/21/2018 04:39	WG1087146
1,2-Dichloropropane	U		0.000381	0.00106	1	03/21/2018 04:39	WG1087146
1,1-Dichloropropene	U		0.000337	0.00106	1	03/21/2018 04:39	WG1087146
1,3-Dichloropropane	U		0.000220	0.00106	1	03/21/2018 04:39	WG1087146
cis-1,3-Dichloropropene	U		0.000279	0.00106	1	03/21/2018 04:39	WG1087146
trans-1,3-Dichloropropene	U		0.000284	0.00106	1	03/21/2018 04:39	WG1087146
2,2-Dichloropropane	U		0.000297	0.00106	1	03/21/2018 04:39	WG1087146
Di-isopropyl ether	U		0.000264	0.00106	1	03/21/2018 04:39	WG1087146
Ethylbenzene	U		0.000316	0.00106	1	03/21/2018 04:39	WG1087146
Hexachloro-1,3-butadiene	U		0.000364	0.00106	1	03/21/2018 04:39	WG1087146
Isopropylbenzene	U		0.000259	0.00106	1	03/21/2018 04:39	WG1087146
p-Isopropyltoluene	U		0.000217	0.00106	1	03/21/2018 04:39	WG1087146
2-Butanone (MEK)	U	JO	0.00498	0.0106	1	03/21/2018 04:39	WG1087146
Methylene Chloride	U		0.00106	0.00532	1	03/21/2018 04:39	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00200	0.0106	1	03/21/2018 04:39	WG1087146
Methyl tert-butyl ether	U		0.000226	0.00106	1	03/21/2018 04:39	WG1087146
Naphthalene	U		0.00106	0.00532	1	03/21/2018 04:39	WG1087146
n-Propylbenzene	U		0.000219	0.00106	1	03/21/2018 04:39	WG1087146
Styrene	U		0.000249	0.00106	1	03/21/2018 04:39	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000281	0.00106	1	03/21/2018 04:39	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000388	0.00106	1	03/21/2018 04:39	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000388	0.00106	1	03/21/2018 04:39	WG1087146
Tetrachloroethene	U		0.000294	0.00106	1	03/21/2018 04:39	WG1087146
Toluene	U		0.000462	0.00532	1	03/21/2018 04:39	WG1087146
1,2,3-Trichlorobenzene	U		0.000326	0.00106	1	03/21/2018 04:39	WG1087146
1,2,4-Trichlorobenzene	U		0.000413	0.00106	1	03/21/2018 04:39	WG1087146
1,1,1-Trichloroethane	U		0.000304	0.00106	1	03/21/2018 04:39	WG1087146
1,1,2-Trichloroethane	U		0.000295	0.00106	1	03/21/2018 04:39	WG1087146
Trichloroethene	U		0.000297	0.00106	1	03/21/2018 04:39	WG1087146
Trichlorofluoromethane	U		0.000406	0.00532	1	03/21/2018 04:39	WG1087146
1,2,3-Trichloropropane	U		0.000788	0.00266	1	03/21/2018 04:39	WG1087146
1,2,4-Trimethylbenzene	U		0.000225	0.00106	1	03/21/2018 04:39	WG1087146
1,2,3-Trimethylbenzene	U		0.000305	0.00106	1	03/21/2018 04:39	WG1087146
Vinyl chloride	U		0.000310	0.00106	1	03/21/2018 04:39	WG1087146
1,3,5-Trimethylbenzene	U		0.000283	0.00106	1	03/21/2018 04:39	WG1087146
Xylenes, Total	U		0.000743	0.00319	1	03/21/2018 04:39	WG1087146
(S) Toluene-d8	105			80.0-120		03/21/2018 04:39	WG1087146
(S) Dibromofluoromethane	103			74.0-131		03/21/2018 04:39	WG1087146
(S) 4-Bromofluorobenzene	90.8			64.0-132		03/21/2018 04:39	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.8		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0114	0.0569	1	03/21/2018 04:59	WG1087146
Acrylonitrile	U		0.00204	0.0114	1	03/21/2018 04:59	WG1087146
Benzene	U		0.000307	0.00114	1	03/21/2018 04:59	WG1087146
Bromobenzene	U		0.000323	0.00114	1	03/21/2018 04:59	WG1087146
Bromodichloromethane	U		0.000289	0.00114	1	03/21/2018 04:59	WG1087146
Bromoform	U		0.000483	0.00114	1	03/21/2018 04:59	WG1087146
Bromomethane	U		0.00153	0.00569	1	03/21/2018 04:59	WG1087146
n-Butylbenzene	U		0.000294	0.00114	1	03/21/2018 04:59	WG1087146
sec-Butylbenzene	U		0.000229	0.00114	1	03/21/2018 04:59	WG1087146
tert-Butylbenzene	U		0.000235	0.00114	1	03/21/2018 04:59	WG1087146
Carbon tetrachloride	U		0.000373	0.00114	1	03/21/2018 04:59	WG1087146
Chlorobenzene	U		0.000241	0.00114	1	03/21/2018 04:59	WG1087146
Chlorodibromomethane	U		0.000425	0.00114	1	03/21/2018 04:59	WG1087146
Chloroethane	U		0.00108	0.00569	1	03/21/2018 04:59	WG1087146
Chloroform	U		0.000261	0.00569	1	03/21/2018 04:59	WG1087146
Chloromethane	U	JO	0.000427	0.00285	1	03/21/2018 04:59	WG1087146
2-Chlorotoluene	U		0.000343	0.00114	1	03/21/2018 04:59	WG1087146
4-Chlorotoluene	U		0.000273	0.00114	1	03/21/2018 04:59	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00120	0.00569	1	03/21/2018 04:59	WG1087146
1,2-Dibromoethane	U		0.000391	0.00114	1	03/21/2018 04:59	WG1087146
Dibromomethane	U		0.000435	0.00114	1	03/21/2018 04:59	WG1087146
1,2-Dichlorobenzene	U		0.000347	0.00114	1	03/21/2018 04:59	WG1087146
1,3-Dichlorobenzene	U		0.000272	0.00114	1	03/21/2018 04:59	WG1087146
1,4-Dichlorobenzene	U		0.000257	0.00114	1	03/21/2018 04:59	WG1087146
Dichlorodifluoromethane	U	JO	0.000812	0.00569	1	03/21/2018 04:59	WG1087146
1,1-Dichloroethane	U		0.000227	0.00114	1	03/21/2018 04:59	WG1087146
1,2-Dichloroethane	U		0.000302	0.00114	1	03/21/2018 04:59	WG1087146
1,1-Dichloroethene	U		0.000345	0.00114	1	03/21/2018 04:59	WG1087146
cis-1,2-Dichloroethene	U		0.000268	0.00114	1	03/21/2018 04:59	WG1087146
trans-1,2-Dichloroethene	U		0.000301	0.00114	1	03/21/2018 04:59	WG1087146
1,2-Dichloropropane	U		0.000408	0.00114	1	03/21/2018 04:59	WG1087146
1,1-Dichloropropene	U		0.000361	0.00114	1	03/21/2018 04:59	WG1087146
1,3-Dichloropropane	U		0.000236	0.00114	1	03/21/2018 04:59	WG1087146
cis-1,3-Dichloropropene	U		0.000298	0.00114	1	03/21/2018 04:59	WG1087146
trans-1,3-Dichloropropene	U		0.000304	0.00114	1	03/21/2018 04:59	WG1087146
2,2-Dichloropropane	U		0.000318	0.00114	1	03/21/2018 04:59	WG1087146
Di-isopropyl ether	U		0.000282	0.00114	1	03/21/2018 04:59	WG1087146
Ethylbenzene	U		0.000338	0.00114	1	03/21/2018 04:59	WG1087146
Hexachloro-1,3-butadiene	U		0.000389	0.00114	1	03/21/2018 04:59	WG1087146
Isopropylbenzene	U		0.000277	0.00114	1	03/21/2018 04:59	WG1087146
p-Isopropyltoluene	U		0.000232	0.00114	1	03/21/2018 04:59	WG1087146
2-Butanone (MEK)	U	JO	0.00533	0.0114	1	03/21/2018 04:59	WG1087146
Methylene Chloride	U		0.00114	0.00569	1	03/21/2018 04:59	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0114	1	03/21/2018 04:59	WG1087146
Methyl tert-butyl ether	U		0.000241	0.00114	1	03/21/2018 04:59	WG1087146
Naphthalene	U		0.00114	0.00569	1	03/21/2018 04:59	WG1087146
n-Propylbenzene	U		0.000235	0.00114	1	03/21/2018 04:59	WG1087146
Styrene	U		0.000266	0.00114	1	03/21/2018 04:59	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000301	0.00114	1	03/21/2018 04:59	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000416	0.00114	1	03/21/2018 04:59	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000416	0.00114	1	03/21/2018 04:59	WG1087146
Tetrachloroethene	U		0.000314	0.00114	1	03/21/2018 04:59	WG1087146
Toluene	U		0.000494	0.00569	1	03/21/2018 04:59	WG1087146
1,2,3-Trichlorobenzene	U		0.000348	0.00114	1	03/21/2018 04:59	WG1087146
1,2,4-Trichlorobenzene	U		0.000442	0.00114	1	03/21/2018 04:59	WG1087146
1,1,1-Trichloroethane	U		0.000326	0.00114	1	03/21/2018 04:59	WG1087146
1,1,2-Trichloroethane	U		0.000315	0.00114	1	03/21/2018 04:59	WG1087146
Trichloroethene	U		0.000318	0.00114	1	03/21/2018 04:59	WG1087146
Trichlorofluoromethane	U		0.000435	0.00569	1	03/21/2018 04:59	WG1087146
1,2,3-Trichloropropane	U		0.000844	0.00285	1	03/21/2018 04:59	WG1087146
1,2,4-Trimethylbenzene	U		0.000240	0.00114	1	03/21/2018 04:59	WG1087146
1,2,3-Trimethylbenzene	U		0.000327	0.00114	1	03/21/2018 04:59	WG1087146
Vinyl chloride	U		0.000331	0.00114	1	03/21/2018 04:59	WG1087146
1,3,5-Trimethylbenzene	U		0.000303	0.00114	1	03/21/2018 04:59	WG1087146
Xylenes, Total	U		0.000795	0.00342	1	03/21/2018 04:59	WG1087146
(S) Toluene-d8	104			80.0-120		03/21/2018 04:59	WG1087146
(S) Dibromofluoromethane	101			74.0-131		03/21/2018 04:59	WG1087146
(S) 4-Bromofluorobenzene	89.3			64.0-132		03/21/2018 04:59	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.6		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0107	0.0534	1	03/21/2018 05:19	WG1087146
Acrylonitrile	U		0.00191	0.0107	1	03/21/2018 05:19	WG1087146
Benzene	U		0.000288	0.00107	1	03/21/2018 05:19	WG1087146
Bromobenzene	U		0.000303	0.00107	1	03/21/2018 05:19	WG1087146
Bromodichloromethane	U		0.000271	0.00107	1	03/21/2018 05:19	WG1087146
Bromoform	U		0.000453	0.00107	1	03/21/2018 05:19	WG1087146
Bromomethane	U		0.00143	0.00534	1	03/21/2018 05:19	WG1087146
n-Butylbenzene	U		0.000276	0.00107	1	03/21/2018 05:19	WG1087146
sec-Butylbenzene	U		0.000215	0.00107	1	03/21/2018 05:19	WG1087146
tert-Butylbenzene	U		0.000220	0.00107	1	03/21/2018 05:19	WG1087146
Carbon tetrachloride	U		0.000350	0.00107	1	03/21/2018 05:19	WG1087146
Chlorobenzene	U		0.000226	0.00107	1	03/21/2018 05:19	WG1087146
Chlorodibromomethane	U		0.000398	0.00107	1	03/21/2018 05:19	WG1087146
Chloroethane	U		0.00101	0.00534	1	03/21/2018 05:19	WG1087146
Chloroform	U		0.000245	0.00534	1	03/21/2018 05:19	WG1087146
Chloromethane	U	JO	0.000401	0.00267	1	03/21/2018 05:19	WG1087146
2-Chlorotoluene	U		0.000322	0.00107	1	03/21/2018 05:19	WG1087146
4-Chlorotoluene	U		0.000256	0.00107	1	03/21/2018 05:19	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00112	0.00534	1	03/21/2018 05:19	WG1087146
1,2-Dibromoethane	U		0.000366	0.00107	1	03/21/2018 05:19	WG1087146
Dibromomethane	U		0.000408	0.00107	1	03/21/2018 05:19	WG1087146
1,2-Dichlorobenzene	U		0.000326	0.00107	1	03/21/2018 05:19	WG1087146
1,3-Dichlorobenzene	U		0.000255	0.00107	1	03/21/2018 05:19	WG1087146
1,4-Dichlorobenzene	U		0.000241	0.00107	1	03/21/2018 05:19	WG1087146
Dichlorodifluoromethane	U	JO	0.000762	0.00534	1	03/21/2018 05:19	WG1087146
1,1-Dichloroethane	U		0.000213	0.00107	1	03/21/2018 05:19	WG1087146
1,2-Dichloroethane	U		0.000283	0.00107	1	03/21/2018 05:19	WG1087146
1,1-Dichloroethene	U		0.000324	0.00107	1	03/21/2018 05:19	WG1087146
cis-1,2-Dichloroethene	U		0.000251	0.00107	1	03/21/2018 05:19	WG1087146
trans-1,2-Dichloroethene	U		0.000282	0.00107	1	03/21/2018 05:19	WG1087146
1,2-Dichloropropane	U		0.000382	0.00107	1	03/21/2018 05:19	WG1087146
1,1-Dichloropropene	U		0.000339	0.00107	1	03/21/2018 05:19	WG1087146
1,3-Dichloropropane	U		0.000221	0.00107	1	03/21/2018 05:19	WG1087146
cis-1,3-Dichloropropene	U		0.000280	0.00107	1	03/21/2018 05:19	WG1087146
trans-1,3-Dichloropropene	U		0.000285	0.00107	1	03/21/2018 05:19	WG1087146
2,2-Dichloropropane	U		0.000298	0.00107	1	03/21/2018 05:19	WG1087146
Di-isopropyl ether	U		0.000265	0.00107	1	03/21/2018 05:19	WG1087146
Ethylbenzene	U		0.000317	0.00107	1	03/21/2018 05:19	WG1087146
Hexachloro-1,3-butadiene	U		0.000365	0.00107	1	03/21/2018 05:19	WG1087146
Isopropylbenzene	U		0.000260	0.00107	1	03/21/2018 05:19	WG1087146
p-Isopropyltoluene	U		0.000218	0.00107	1	03/21/2018 05:19	WG1087146
2-Butanone (MEK)	U	JO	0.00500	0.0107	1	03/21/2018 05:19	WG1087146
Methylene Chloride	U		0.00107	0.00534	1	03/21/2018 05:19	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00201	0.0107	1	03/21/2018 05:19	WG1087146
Methyl tert-butyl ether	U		0.000226	0.00107	1	03/21/2018 05:19	WG1087146
Naphthalene	U		0.00107	0.00534	1	03/21/2018 05:19	WG1087146
n-Propylbenzene	U		0.000220	0.00107	1	03/21/2018 05:19	WG1087146
Styrene	U		0.000250	0.00107	1	03/21/2018 05:19	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000282	0.00107	1	03/21/2018 05:19	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000390	0.00107	1	03/21/2018 05:19	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000390	0.00107	1	03/21/2018 05:19	WG1087146
Tetrachloroethene	0.00673		0.000295	0.00107	1	03/21/2018 05:19	WG1087146
Toluene	U		0.000464	0.00534	1	03/21/2018 05:19	WG1087146
1,2,3-Trichlorobenzene	U		0.000327	0.00107	1	03/21/2018 05:19	WG1087146
1,2,4-Trichlorobenzene	U		0.000414	0.00107	1	03/21/2018 05:19	WG1087146
1,1,1-Trichloroethane	U		0.000306	0.00107	1	03/21/2018 05:19	WG1087146
1,1,2-Trichloroethane	U		0.000296	0.00107	1	03/21/2018 05:19	WG1087146
Trichloroethene	U		0.000298	0.00107	1	03/21/2018 05:19	WG1087146
Trichlorofluoromethane	U		0.000408	0.00534	1	03/21/2018 05:19	WG1087146
1,2,3-Trichloropropane	U		0.000792	0.00267	1	03/21/2018 05:19	WG1087146
1,2,4-Trimethylbenzene	U		0.000225	0.00107	1	03/21/2018 05:19	WG1087146
1,2,3-Trimethylbenzene	U		0.000307	0.00107	1	03/21/2018 05:19	WG1087146
Vinyl chloride	U		0.000311	0.00107	1	03/21/2018 05:19	WG1087146
1,3,5-Trimethylbenzene	U		0.000284	0.00107	1	03/21/2018 05:19	WG1087146
Xylenes, Total	U		0.000746	0.00320	1	03/21/2018 05:19	WG1087146
(S) Toluene-d8	107			80.0-120		03/21/2018 05:19	WG1087146
(S) Dibromofluoromethane	102			74.0-131		03/21/2018 05:19	WG1087146
(S) 4-Bromofluorobenzene	90.9			64.0-132		03/21/2018 05:19	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.6		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0115	0.0577	1	03/21/2018 05:38	WG1087146
Acrylonitrile	U		0.00207	0.0115	1	03/21/2018 05:38	WG1087146
Benzene	U		0.000312	0.00115	1	03/21/2018 05:38	WG1087146
Bromobenzene	U		0.000328	0.00115	1	03/21/2018 05:38	WG1087146
Bromodichloromethane	U		0.000293	0.00115	1	03/21/2018 05:38	WG1087146
Bromoform	U		0.000490	0.00115	1	03/21/2018 05:38	WG1087146
Bromomethane	U		0.00155	0.00577	1	03/21/2018 05:38	WG1087146
n-Butylbenzene	U		0.000298	0.00115	1	03/21/2018 05:38	WG1087146
sec-Butylbenzene	U		0.000232	0.00115	1	03/21/2018 05:38	WG1087146
tert-Butylbenzene	U		0.000238	0.00115	1	03/21/2018 05:38	WG1087146
Carbon tetrachloride	U		0.000379	0.00115	1	03/21/2018 05:38	WG1087146
Chlorobenzene	U		0.000245	0.00115	1	03/21/2018 05:38	WG1087146
Chlorodibromomethane	U		0.000431	0.00115	1	03/21/2018 05:38	WG1087146
Chloroethane	U		0.00109	0.00577	1	03/21/2018 05:38	WG1087146
Chloroform	U		0.000264	0.00577	1	03/21/2018 05:38	WG1087146
Chloromethane	U	JO	0.000433	0.00289	1	03/21/2018 05:38	WG1087146
2-Chlorotoluene	U		0.000348	0.00115	1	03/21/2018 05:38	WG1087146
4-Chlorotoluene	U		0.000277	0.00115	1	03/21/2018 05:38	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00121	0.00577	1	03/21/2018 05:38	WG1087146
1,2-Dibromoethane	U		0.000396	0.00115	1	03/21/2018 05:38	WG1087146
Dibromomethane	U		0.000441	0.00115	1	03/21/2018 05:38	WG1087146
1,2-Dichlorobenzene	U		0.000352	0.00115	1	03/21/2018 05:38	WG1087146
1,3-Dichlorobenzene	U		0.000276	0.00115	1	03/21/2018 05:38	WG1087146
1,4-Dichlorobenzene	U		0.000261	0.00115	1	03/21/2018 05:38	WG1087146
Dichlorodifluoromethane	U	JO	0.000823	0.00577	1	03/21/2018 05:38	WG1087146
1,1-Dichloroethane	U		0.000230	0.00115	1	03/21/2018 05:38	WG1087146
1,2-Dichloroethane	U		0.000306	0.00115	1	03/21/2018 05:38	WG1087146
1,1-Dichloroethene	U		0.000350	0.00115	1	03/21/2018 05:38	WG1087146
cis-1,2-Dichloroethene	U		0.000271	0.00115	1	03/21/2018 05:38	WG1087146
trans-1,2-Dichloroethene	U		0.000305	0.00115	1	03/21/2018 05:38	WG1087146
1,2-Dichloropropane	U		0.000413	0.00115	1	03/21/2018 05:38	WG1087146
1,1-Dichloropropene	U		0.000366	0.00115	1	03/21/2018 05:38	WG1087146
1,3-Dichloropropane	U		0.000239	0.00115	1	03/21/2018 05:38	WG1087146
cis-1,3-Dichloropropene	U		0.000302	0.00115	1	03/21/2018 05:38	WG1087146
trans-1,3-Dichloropropene	U		0.000308	0.00115	1	03/21/2018 05:38	WG1087146
2,2-Dichloropropane	U		0.000322	0.00115	1	03/21/2018 05:38	WG1087146
Di-isopropyl ether	U		0.000286	0.00115	1	03/21/2018 05:38	WG1087146
Ethylbenzene	U		0.000343	0.00115	1	03/21/2018 05:38	WG1087146
Hexachloro-1,3-butadiene	U		0.000395	0.00115	1	03/21/2018 05:38	WG1087146
Isopropylbenzene	U		0.000281	0.00115	1	03/21/2018 05:38	WG1087146
p-Isopropyltoluene	U		0.000236	0.00115	1	03/21/2018 05:38	WG1087146
2-Butanone (MEK)	U	JO	0.00540	0.0115	1	03/21/2018 05:38	WG1087146
Methylene Chloride	U		0.00115	0.00577	1	03/21/2018 05:38	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00217	0.0115	1	03/21/2018 05:38	WG1087146
Methyl tert-butyl ether	U		0.000245	0.00115	1	03/21/2018 05:38	WG1087146
Naphthalene	U		0.00115	0.00577	1	03/21/2018 05:38	WG1087146
n-Propylbenzene	U		0.000238	0.00115	1	03/21/2018 05:38	WG1087146
Styrene	U		0.000270	0.00115	1	03/21/2018 05:38	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000305	0.00115	1	03/21/2018 05:38	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000421	0.00115	1	03/21/2018 05:38	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000421	0.00115	1	03/21/2018 05:38	WG1087146
Tetrachloroethene	0.00148		0.000319	0.00115	1	03/21/2018 05:38	WG1087146
Toluene	U		0.000501	0.00577	1	03/21/2018 05:38	WG1087146
1,2,3-Trichlorobenzene	U		0.000353	0.00115	1	03/21/2018 05:38	WG1087146
1,2,4-Trichlorobenzene	U		0.000448	0.00115	1	03/21/2018 05:38	WG1087146
1,1,1-Trichloroethane	U		0.000330	0.00115	1	03/21/2018 05:38	WG1087146
1,1,2-Trichloroethane	U		0.000320	0.00115	1	03/21/2018 05:38	WG1087146
Trichloroethene	U		0.000322	0.00115	1	03/21/2018 05:38	WG1087146
Trichlorofluoromethane	U		0.000441	0.00577	1	03/21/2018 05:38	WG1087146
1,2,3-Trichloropropane	U		0.000856	0.00289	1	03/21/2018 05:38	WG1087146
1,2,4-Trimethylbenzene	U		0.000244	0.00115	1	03/21/2018 05:38	WG1087146
1,2,3-Trimethylbenzene	U		0.000331	0.00115	1	03/21/2018 05:38	WG1087146
Vinyl chloride	U		0.000336	0.00115	1	03/21/2018 05:38	WG1087146
1,3,5-Trimethylbenzene	U		0.000307	0.00115	1	03/21/2018 05:38	WG1087146
Xylenes, Total	U		0.000806	0.00346	1	03/21/2018 05:38	WG1087146
(S) Toluene-d8	106			80.0-120		03/21/2018 05:38	WG1087146
(S) Dibromofluoromethane	101			74.0-131		03/21/2018 05:38	WG1087146
(S) 4-Bromofluorobenzene	91.5			64.0-132		03/21/2018 05:38	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	136		1.05	25.0	1	03/19/2018 23:37	WG1086626
Acrylonitrile	U		0.873	5.00	1	03/19/2018 23:37	WG1086626
Benzene	U		0.0896	0.500	1	03/19/2018 23:37	WG1086626
Bromobenzene	U		0.133	0.500	1	03/19/2018 23:37	WG1086626
Bromodichloromethane	0.294	J	0.0800	0.500	1	03/19/2018 23:37	WG1086626
Bromochloromethane	U		0.145	0.500	1	03/19/2018 23:37	WG1086626
Bromoform	U		0.186	0.500	1	03/19/2018 23:37	WG1086626
Bromomethane	U		0.157	2.50	1	03/19/2018 23:37	WG1086626
n-Butylbenzene	U		0.143	0.500	1	03/19/2018 23:37	WG1086626
sec-Butylbenzene	U		0.134	0.500	1	03/19/2018 23:37	WG1086626
tert-Butylbenzene	U		0.183	0.500	1	03/19/2018 23:37	WG1086626
Carbon disulfide	U		0.101	0.500	1	03/19/2018 23:37	WG1086626
Carbon tetrachloride	U		0.159	0.500	1	03/19/2018 23:37	WG1086626
Chlorobenzene	U		0.140	0.500	1	03/19/2018 23:37	WG1086626
Chlorodibromomethane	U		0.128	0.500	1	03/19/2018 23:37	WG1086626
Chloroethane	U		0.141	2.50	1	03/19/2018 23:37	WG1086626
Chloroform	7.42		0.0860	0.500	1	03/19/2018 23:37	WG1086626
Chloromethane	U		0.153	1.25	1	03/19/2018 23:37	WG1086626
2-Chlorotoluene	U		0.111	0.500	1	03/19/2018 23:37	WG1086626
4-Chlorotoluene	U		0.0972	0.500	1	03/19/2018 23:37	WG1086626
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	03/19/2018 23:37	WG1086626
1,2-Dibromoethane	U		0.193	0.500	1	03/19/2018 23:37	WG1086626
Dibromomethane	U		0.117	0.500	1	03/19/2018 23:37	WG1086626
1,2-Dichlorobenzene	U		0.101	0.500	1	03/19/2018 23:37	WG1086626
1,3-Dichlorobenzene	U		0.130	0.500	1	03/19/2018 23:37	WG1086626
1,4-Dichlorobenzene	U		0.121	0.500	1	03/19/2018 23:37	WG1086626
Dichlorodifluoromethane	U		0.127	2.50	1	03/19/2018 23:37	WG1086626
1,1-Dichloroethane	U		0.114	0.500	1	03/19/2018 23:37	WG1086626
1,2-Dichloroethane	U		0.108	0.500	1	03/19/2018 23:37	WG1086626
1,1-Dichloroethene	U		0.188	0.500	1	03/19/2018 23:37	WG1086626
cis-1,2-Dichloroethene	U		0.0933	0.500	1	03/19/2018 23:37	WG1086626
trans-1,2-Dichloroethene	U		0.152	0.500	1	03/19/2018 23:37	WG1086626
1,2-Dichloropropane	U		0.190	0.500	1	03/19/2018 23:37	WG1086626
1,1-Dichloropropene	U		0.128	0.500	1	03/19/2018 23:37	WG1086626
1,3-Dichloropropane	U		0.147	1.00	1	03/19/2018 23:37	WG1086626
cis-1,3-Dichloropropene	U		0.0976	0.500	1	03/19/2018 23:37	WG1086626
trans-1,3-Dichloropropene	U		0.222	0.500	1	03/19/2018 23:37	WG1086626
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	03/19/2018 23:37	WG1086626
2,2-Dichloropropane	U		0.0929	0.500	1	03/19/2018 23:37	WG1086626
Di-isopropyl ether	U		0.0924	0.500	1	03/19/2018 23:37	WG1086626
Ethylbenzene	U		0.158	0.500	1	03/19/2018 23:37	WG1086626
Hexachloro-1,3-butadiene	U		0.157	1.00	1	03/19/2018 23:37	WG1086626
2-Hexanone	U		0.757	5.00	1	03/19/2018 23:37	WG1086626
n-Hexane	U		0.305	5.00	1	03/19/2018 23:37	WG1086626
Iodomethane	U		0.377	10.0	1	03/19/2018 23:37	WG1086626
Isopropylbenzene	U		0.126	0.500	1	03/19/2018 23:37	WG1086626
p-Isopropyltoluene	U		0.138	0.500	1	03/19/2018 23:37	WG1086626
2-Butanone (MEK)	6.86		1.28	5.00	1	03/19/2018 23:37	WG1086626
Methylene Chloride	U		1.07	2.50	1	03/19/2018 23:37	WG1086626
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	03/19/2018 23:37	WG1086626
Methyl tert-butyl ether	U		0.102	0.500	1	03/19/2018 23:37	WG1086626
Naphthalene	0.274	J	0.174	2.50	1	03/19/2018 23:37	WG1086626
n-Propylbenzene	U		0.162	0.500	1	03/19/2018 23:37	WG1086626
Styrene	U		0.117	0.500	1	03/19/2018 23:37	WG1086626
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	03/19/2018 23:37	WG1086626
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	03/19/2018 23:37	WG1086626

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc



Collected date/time: 03/16/18 09:20

L978402

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	03/19/2018 23:37	WG1086626
Tetrachloroethene	U		0.199	0.500	1	03/19/2018 23:37	WG1086626
Toluene	U		0.412	0.500	1	03/19/2018 23:37	WG1086626
1,2,3-Trichlorobenzene	U		0.164	0.500	1	03/19/2018 23:37	WG1086626
1,2,4-Trichlorobenzene	U		0.355	0.500	1	03/19/2018 23:37	WG1086626
1,1,1-Trichloroethane	U		0.0940	0.500	1	03/19/2018 23:37	WG1086626
1,1,2-Trichloroethane	U		0.186	0.500	1	03/19/2018 23:37	WG1086626
Trichloroethene	U		0.153	0.500	1	03/19/2018 23:37	WG1086626
Trichlorofluoromethane	U		0.130	2.50	1	03/19/2018 23:37	WG1086626
1,2,3-Trichloropropane	U		0.247	2.50	1	03/19/2018 23:37	WG1086626
1,2,4-Trimethylbenzene	0.144	J	0.123	0.500	1	03/19/2018 23:37	WG1086626
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	03/19/2018 23:37	WG1086626
1,3,5-Trimethylbenzene	U		0.124	0.500	1	03/19/2018 23:37	WG1086626
Vinyl acetate	U		0.645	5.00	1	03/19/2018 23:37	WG1086626
Vinyl chloride	U		0.118	0.500	1	03/19/2018 23:37	WG1086626
Xylenes, Total	U		0.316	1.50	1	03/19/2018 23:37	WG1086626
(S) Toluene-d8	100			80.0-120		03/19/2018 23:37	WG1086626
(S) Dibromofluoromethane	103			76.0-123		03/19/2018 23:37	WG1086626
(S) 4-Bromofluorobenzene	96.9			80.0-120		03/19/2018 23:37	WG1086626

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.6		1	03/23/2018 11:04	WG1088059

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	JO	0.0122	0.0612	1	03/21/2018 05:58	WG1087146
Acrylonitrile	U		0.00219	0.0122	1	03/21/2018 05:58	WG1087146
Benzene	U		0.000331	0.00122	1	03/21/2018 05:58	WG1087146
Bromobenzene	U		0.000348	0.00122	1	03/21/2018 05:58	WG1087146
Bromodichloromethane	U		0.000311	0.00122	1	03/21/2018 05:58	WG1087146
Bromoform	U		0.000519	0.00122	1	03/21/2018 05:58	WG1087146
Bromomethane	U		0.00164	0.00612	1	03/21/2018 05:58	WG1087146
n-Butylbenzene	U		0.000316	0.00122	1	03/21/2018 05:58	WG1087146
sec-Butylbenzene	U		0.000246	0.00122	1	03/21/2018 05:58	WG1087146
tert-Butylbenzene	U		0.000252	0.00122	1	03/21/2018 05:58	WG1087146
Carbon tetrachloride	U		0.000402	0.00122	1	03/21/2018 05:58	WG1087146
Chlorobenzene	U		0.000260	0.00122	1	03/21/2018 05:58	WG1087146
Chlorodibromomethane	U		0.000457	0.00122	1	03/21/2018 05:58	WG1087146
Chloroethane	U		0.00116	0.00612	1	03/21/2018 05:58	WG1087146
Chloroform	U		0.000280	0.00612	1	03/21/2018 05:58	WG1087146
Chloromethane	U	JO	0.000459	0.00306	1	03/21/2018 05:58	WG1087146
2-Chlorotoluene	U		0.000369	0.00122	1	03/21/2018 05:58	WG1087146
4-Chlorotoluene	U		0.000294	0.00122	1	03/21/2018 05:58	WG1087146
1,2-Dibromo-3-Chloropropane	U		0.00129	0.00612	1	03/21/2018 05:58	WG1087146
1,2-Dibromoethane	U		0.000420	0.00122	1	03/21/2018 05:58	WG1087146
Dibromomethane	U		0.000468	0.00122	1	03/21/2018 05:58	WG1087146
1,2-Dichlorobenzene	U		0.000374	0.00122	1	03/21/2018 05:58	WG1087146
1,3-Dichlorobenzene	U		0.000293	0.00122	1	03/21/2018 05:58	WG1087146
1,4-Dichlorobenzene	U		0.000277	0.00122	1	03/21/2018 05:58	WG1087146
Dichlorodifluoromethane	U	JO	0.000873	0.00612	1	03/21/2018 05:58	WG1087146
1,1-Dichloroethane	U		0.000244	0.00122	1	03/21/2018 05:58	WG1087146
1,2-Dichloroethane	U		0.000325	0.00122	1	03/21/2018 05:58	WG1087146
1,1-Dichloroethene	U		0.000371	0.00122	1	03/21/2018 05:58	WG1087146
cis-1,2-Dichloroethene	U		0.000288	0.00122	1	03/21/2018 05:58	WG1087146
trans-1,2-Dichloroethene	U		0.000323	0.00122	1	03/21/2018 05:58	WG1087146
1,2-Dichloropropane	U		0.000438	0.00122	1	03/21/2018 05:58	WG1087146
1,1-Dichloropropene	U		0.000388	0.00122	1	03/21/2018 05:58	WG1087146
1,3-Dichloropropane	U		0.000254	0.00122	1	03/21/2018 05:58	WG1087146
cis-1,3-Dichloropropene	U		0.000321	0.00122	1	03/21/2018 05:58	WG1087146
trans-1,3-Dichloropropene	U		0.000327	0.00122	1	03/21/2018 05:58	WG1087146
2,2-Dichloropropane	U		0.000342	0.00122	1	03/21/2018 05:58	WG1087146
Di-isopropyl ether	U		0.000304	0.00122	1	03/21/2018 05:58	WG1087146
Ethylbenzene	U		0.000364	0.00122	1	03/21/2018 05:58	WG1087146
Hexachloro-1,3-butadiene	U		0.000419	0.00122	1	03/21/2018 05:58	WG1087146
Isopropylbenzene	U		0.000298	0.00122	1	03/21/2018 05:58	WG1087146
p-Isopropyltoluene	U		0.000250	0.00122	1	03/21/2018 05:58	WG1087146
2-Butanone (MEK)	U	JO	0.00573	0.0122	1	03/21/2018 05:58	WG1087146
Methylene Chloride	U		0.00122	0.00612	1	03/21/2018 05:58	WG1087146
4-Methyl-2-pentanone (MIBK)	U		0.00230	0.0122	1	03/21/2018 05:58	WG1087146
Methyl tert-butyl ether	U		0.000260	0.00122	1	03/21/2018 05:58	WG1087146
Naphthalene	U		0.00122	0.00612	1	03/21/2018 05:58	WG1087146
n-Propylbenzene	U		0.000252	0.00122	1	03/21/2018 05:58	WG1087146
Styrene	U		0.000287	0.00122	1	03/21/2018 05:58	WG1087146
1,1,1,2-Tetrachloroethane	U		0.000323	0.00122	1	03/21/2018 05:58	WG1087146
1,1,2,2-Tetrachloroethane	U		0.000447	0.00122	1	03/21/2018 05:58	WG1087146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 03/16/18 10:35

L978402

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000447	0.00122	1	03/21/2018 05:58	WG1087146
Tetrachloroethene	U		0.000338	0.00122	1	03/21/2018 05:58	WG1087146
Toluene	U		0.000532	0.00612	1	03/21/2018 05:58	WG1087146
1,2,3-Trichlorobenzene	U		0.000375	0.00122	1	03/21/2018 05:58	WG1087146
1,2,4-Trichlorobenzene	U		0.000475	0.00122	1	03/21/2018 05:58	WG1087146
1,1,1-Trichloroethane	U		0.000350	0.00122	1	03/21/2018 05:58	WG1087146
1,1,2-Trichloroethane	U		0.000339	0.00122	1	03/21/2018 05:58	WG1087146
Trichloroethene	U		0.000342	0.00122	1	03/21/2018 05:58	WG1087146
Trichlorofluoromethane	U		0.000468	0.00612	1	03/21/2018 05:58	WG1087146
1,2,3-Trichloropropane	U		0.000908	0.00306	1	03/21/2018 05:58	WG1087146
1,2,4-Trimethylbenzene	U		0.000258	0.00122	1	03/21/2018 05:58	WG1087146
1,2,3-Trimethylbenzene	U		0.000352	0.00122	1	03/21/2018 05:58	WG1087146
Vinyl chloride	U		0.000356	0.00122	1	03/21/2018 05:58	WG1087146
1,3,5-Trimethylbenzene	U		0.000326	0.00122	1	03/21/2018 05:58	WG1087146
Xylenes, Total	U		0.000855	0.00367	1	03/21/2018 05:58	WG1087146
(S) Toluene-d8	105			80.0-120		03/21/2018 05:58	WG1087146
(S) Dibromofluoromethane	102			74.0-131		03/21/2018 05:58	WG1087146
(S) 4-Bromofluorobenzene	89.9			64.0-132		03/21/2018 05:58	WG1087146

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3296238-1 03/23/18 11:04

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.000			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L978402-03 Original Sample (OS) • Duplicate (DUP)

(OS) L978402-03 03/23/18 11:04 • (DUP) R3296238-3 03/23/18 11:04

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	87.8	86.6	1	1.43		5

Laboratory Control Sample (LCS)

(LCS) R3296238-2 03/23/18 11:04

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3295046-4 03/19/18 21:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromochloromethane	U		0.145	0.500
Bromodichloromethane	U		0.0800	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
Carbon disulfide	U		0.101	0.500
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
2-Hexanone	U		0.757	5.00
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3295046-4 03/19/18 21:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
Vinyl acetate	U		0.645	5.00
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	102			80.0-120
(S) Dibromofluoromethane	101			76.0-123
(S) 4-Bromofluorobenzene	96.9			80.0-120

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3295046-1 03/19/18 20:07 • (LCSD) R3295046-2 03/19/18 20:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromochloromethane	25.0	25.3	25.1	101	100	76.0-122			0.856	20
Carbon disulfide	25.0	26.7	26.9	107	107	55.0-127			0.485	20
trans-1,4-Dichloro-2-butene	25.0	14.6	15.8	58.5	63.4	55.0-134			8.04	20
2-Hexanone	125	136	133	109	106	58.0-147			2.37	20
Acetone	125	142	130	114	104	10.0-160			9.38	23
n-Hexane	25.0	27.1	27.8	108	111	56.0-124			2.59	20
Iodomethane	125	127	130	102	104	57.0-140			2.13	20
Acrylonitrile	125	137	131	110	105	60.0-142			4.90	20
Benzene	25.0	25.3	25.4	101	101	69.0-123			0.357	20
Bromobenzene	25.0	22.9	23.3	91.5	93.2	79.0-120			1.84	20
Bromodichloromethane	25.0	25.7	25.1	103	100	76.0-120			2.26	20
Bromoform	25.0	24.3	24.5	97.3	98.1	67.0-132			0.829	20
Bromomethane	25.0	24.2	25.5	96.7	102	18.0-160			5.20	20
n-Butylbenzene	25.0	25.1	24.9	100	99.6	72.0-126			0.723	20
sec-Butylbenzene	25.0	28.4	29.3	114	117	74.0-121			3.05	20
tert-Butylbenzene	25.0	26.8	27.6	107	111	75.0-122			3.19	20
Carbon tetrachloride	25.0	26.0	26.3	104	105	63.0-122			1.42	20
Chlorobenzene	25.0	25.4	24.5	102	98.0	79.0-121			3.58	20
Chlorodibromomethane	25.0	24.8	23.9	99.2	95.8	75.0-125			3.59	20
Chloroethane	25.0	28.6	29.3	114	117	47.0-152			2.50	20
Chloroform	25.0	25.5	25.3	102	101	72.0-121			0.829	20
Chloromethane	25.0	26.2	26.5	105	106	48.0-139			1.07	20
2-Chlorotoluene	25.0	24.6	25.0	98.4	100	74.0-122			1.72	20
4-Chlorotoluene	25.0	24.4	24.8	97.8	99.0	79.0-120			1.27	20
1,2-Dibromo-3-Chloropropane	25.0	22.7	22.7	90.9	90.7	64.0-127			0.177	20
1,2-Dibromoethane	25.0	25.3	24.8	101	99.1	77.0-123			2.17	20
Dibromomethane	25.0	25.6	24.5	102	97.9	78.0-120			4.33	20
1,2-Dichlorobenzene	25.0	23.8	23.8	95.3	95.0	80.0-120			0.238	20
Vinyl acetate	125	122	115	97.7	92.3	46.0-160			5.74	20
1,3-Dichlorobenzene	25.0	25.5	25.2	102	101	72.0-123			0.993	20
1,4-Dichlorobenzene	25.0	24.5	24.5	98.0	97.8	77.0-120			0.222	20
Dichlorodifluoromethane	25.0	30.6	30.1	123	120	49.0-155			1.72	20
1,1-Dichloroethane	25.0	26.4	26.4	106	106	70.0-126			0.0694	20
1,2-Dichloroethane	25.0	26.2	25.9	105	104	67.0-126			1.01	20
1,1-Dichloroethene	25.0	26.5	27.1	106	108	64.0-129			2.07	20
cis-1,2-Dichloroethene	25.0	24.4	24.5	97.6	97.9	73.0-120			0.333	20
trans-1,2-Dichloroethene	25.0	25.5	25.8	102	103	71.0-121			1.00	20
1,2-Dichloropropane	25.0	25.6	25.1	103	100	75.0-125			1.98	20
1,1-Dichloropropene	25.0	26.8	27.2	107	109	71.0-129			1.61	20
1,3-Dichloropropane	25.0	25.3	24.1	101	96.3	80.0-121			5.07	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3295046-1 03/19/18 20:07 • (LCSD) R3295046-2 03/19/18 20:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,3-Dichloropropene	25.0	25.4	24.7	101	98.6	79.0-123			2.83	20
trans-1,3-Dichloropropene	25.0	24.8	24.3	99.4	97.2	74.0-127			2.26	20
2,2-Dichloropropane	25.0	24.7	26.6	98.8	106	60.0-125			7.20	20
Di-isopropyl ether	25.0	26.1	27.1	105	108	59.0-133			3.57	20
Ethylbenzene	25.0	25.3	24.4	101	97.6	77.0-120			3.50	20
Hexachloro-1,3-butadiene	25.0	25.0	24.6	100	98.4	64.0-131			1.65	20
Isopropylbenzene	25.0	25.5	26.2	102	105	75.0-120			2.77	20
p-Isopropyltoluene	25.0	28.2	28.5	113	114	74.0-126			1.07	20
2-Butanone (MEK)	125	131	129	105	103	37.0-158			1.75	20
Methylene Chloride	25.0	24.7	24.5	98.7	98.2	66.0-121			0.564	20
4-Methyl-2-pentanone (MIBK)	125	136	131	108	105	59.0-143			3.20	20
Methyl tert-butyl ether	25.0	25.1	25.7	101	103	64.0-123			2.25	20
Naphthalene	25.0	24.8	24.4	99.4	97.7	62.0-128			1.69	20
n-Propylbenzene	25.0	24.3	25.0	97.4	99.8	79.0-120			2.49	20
Styrene	25.0	25.6	26.1	102	104	78.0-124			2.10	20
1,1,1,2-Tetrachloroethane	25.0	26.3	25.7	105	103	75.0-122			2.41	20
1,1,2,2-Tetrachloroethane	25.0	23.6	23.3	94.3	93.2	71.0-122			1.11	20
1,1,2-Trichlorotrifluoroethane	25.0	29.1	28.6	117	114	61.0-136			1.86	20
Tetrachloroethene	25.0	23.7	23.0	94.6	92.1	70.0-127			2.71	20
Toluene	25.0	24.7	24.2	98.7	96.6	77.0-120			2.15	20
1,2,3-Trichlorobenzene	25.0	23.5	23.1	94.2	92.4	61.0-133			1.96	20
1,2,4-Trichlorobenzene	25.0	23.2	22.8	92.7	91.4	69.0-129			1.40	20
1,1,1-Trichloroethane	25.0	27.8	28.3	111	113	68.0-122			1.61	20
1,1,2-Trichloroethane	25.0	24.8	24.0	99.1	96.1	78.0-120			3.09	20
Trichloroethene	25.0	25.2	25.0	101	100	78.0-120			0.625	20
Trichlorofluoromethane	25.0	30.1	31.2	120	125	56.0-137			3.46	20
1,2,3-Trichloropropane	25.0	25.1	25.5	100	102	72.0-124			1.55	20
1,2,4-Trimethylbenzene	25.0	26.6	27.0	107	108	75.0-120			1.51	20
1,2,3-Trimethylbenzene	25.0	25.6	25.7	103	103	75.0-120			0.414	20
1,3,5-Trimethylbenzene	25.0	25.6	26.0	102	104	75.0-120			1.50	20
Vinyl chloride	25.0	28.9	30.0	116	120	64.0-133			3.52	20
Xylenes, Total	75.0	77.6	76.5	103	102	77.0-120			1.43	20
(S) Toluene-d8				99.8	98.3	80.0-120				
(S) Dibromofluoromethane				99.7	100	76.0-123				
(S) 4-Bromofluorobenzene				94.4	95.7	80.0-120				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L978489-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978489-01 03/20/18 00:20 • (MS) R3295046-5 03/20/18 05:20 • (MSD) R3295046-6 03/20/18 05:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromochloromethane	25.0	U	25.3	26.0	101	104	1	53.0-138			2.54	20
Carbon disulfide	25.0	U	28.0	29.0	112	116	1	10.0-147			3.54	20
trans-1,4-Dichloro-2-butene	25.0	U	19.8	19.6	79.2	78.2	1	40.0-150			1.24	21
2-Hexanone	125	U	135	138	108	110	1	36.0-145			1.93	23
n-Hexane	25.0	U	30.1	31.6	121	126	1	13.0-145			4.64	20
Iodomethane	125	U	127	131	101	105	1	30.0-151			3.60	20
Acetone	125	U	134	147	107	118	1	10.0-139			9.44	25
Acrylonitrile	125	U	134	140	107	112	1	46.0-159			4.27	23
Benzene	25.0	U	25.8	26.5	103	106	1	34.0-147			2.80	20
Bromobenzene	25.0	U	24.8	24.7	99.2	99.0	1	51.0-137			0.179	20
Bromodichloromethane	25.0	U	27.7	28.3	111	113	1	52.0-135			2.19	20
Bromoform	25.0	U	26.7	26.9	107	108	1	50.0-146			0.883	20
Bromomethane	25.0	U	22.6	24.7	90.3	98.7	1	10.0-160			8.82	23
n-Butylbenzene	25.0	U	25.4	27.0	102	108	1	50.0-144			5.97	20
sec-Butylbenzene	25.0	U	30.6	32.8	122	131	1	48.0-143			6.88	20
tert-Butylbenzene	25.0	U	29.3	31.2	117	125	1	50.0-142			6.42	20
Carbon tetrachloride	25.0	U	27.5	28.5	110	114	1	41.0-138			3.31	20
Chlorobenzene	25.0	U	25.7	26.9	103	108	1	52.0-141			4.44	20
Vinyl acetate	125	U	149	149	120	119	1	30.0-160			0.152	20
Chlorodibromomethane	25.0	U	25.8	26.4	103	106	1	54.0-142			2.60	20
Chloroethane	25.0	U	26.9	28.6	108	114	1	23.0-160			6.17	20
Chloroform	25.0	U	25.8	26.5	103	106	1	50.0-139			2.76	20
Chloromethane	25.0	U	30.5	30.1	122	120	1	14.0-151			1.44	20
2-Chlorotoluene	25.0	U	26.3	27.4	105	110	1	48.0-142			4.31	20
4-Chlorotoluene	25.0	U	26.3	26.8	105	107	1	52.0-139			1.81	20
1,2-Dibromo-3-Chloropropane	25.0	U	22.9	23.7	91.8	94.6	1	49.0-144			3.07	24
1,2-Dibromoethane	25.0	U	25.5	26.1	102	104	1	54.0-140			2.30	20
Dibromomethane	25.0	U	25.6	26.6	103	106	1	53.0-138			3.82	20
1,2-Dichlorobenzene	25.0	U	23.9	24.9	95.8	99.6	1	56.0-139			3.95	20
1,3-Dichlorobenzene	25.0	U	26.3	27.1	105	108	1	50.0-141			3.10	20
1,4-Dichlorobenzene	25.0	U	24.8	25.8	99.0	103	1	53.0-136			4.24	20
Dichlorodifluoromethane	25.0	U	37.5	37.7	150	151	1	20.0-160			0.546	21
1,1-Dichloroethane	25.0	U	27.5	27.7	110	111	1	47.0-143			0.592	20
1,2-Dichloroethane	25.0	U	26.4	26.6	106	106	1	47.0-141			0.522	20
1,1-Dichloroethene	25.0	U	28.2	28.8	113	115	1	31.0-148			1.94	20
cis-1,2-Dichloroethene	25.0	0.402	25.0	25.8	98.6	102	1	43.0-142			2.92	20
trans-1,2-Dichloroethene	25.0	U	25.6	26.4	103	106	1	36.0-141			2.99	20
1,2-Dichloropropane	25.0	U	27.2	28.1	109	112	1	51.0-141			3.32	20
1,1-Dichloropropene	25.0	U	26.8	27.5	107	110	1	42.0-146			2.52	20
1,3-Dichloropropane	25.0	U	25.2	26.0	101	104	1	58.0-139			3.05	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L978489-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978489-01 03/20/18 00:20 • (MS) R3295046-5 03/20/18 05:20 • (MSD) R3295046-6 03/20/18 05:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
cis-1,3-Dichloropropene	25.0	U	25.6	26.2	102	105	1	53.0-139			2.32	20
trans-1,3-Dichloropropene	25.0	U	25.4	26.2	102	105	1	51.0-143			3.05	20
2,2-Dichloropropane	25.0	U	26.7	29.4	107	118	1	43.0-139			9.37	20
Di-isopropyl ether	25.0	U	27.8	28.4	111	114	1	44.0-144			2.14	20
Ethylbenzene	25.0	U	26.0	27.3	104	109	1	42.0-147			4.90	20
Hexachloro-1,3-butadiene	25.0	U	24.2	27.4	96.9	110	1	44.0-146			12.2	21
Isopropylbenzene	25.0	U	28.2	29.4	113	118	1	48.0-141			4.24	20
p-Isopropyltoluene	25.0	U	28.9	30.9	116	124	1	49.0-146			6.72	20
2-Butanone (MEK)	125	U	132	137	106	109	1	12.0-149			3.58	24
Methylene Chloride	25.0	U	24.8	25.8	99.2	103	1	42.0-135			3.97	20
4-Methyl-2-pentanone (MIBK)	125	U	136	140	108	112	1	44.0-160			3.44	22
Methyl tert-butyl ether	25.0	U	26.4	28.3	106	113	1	42.0-142			6.88	20
Naphthalene	25.0	U	24.4	26.0	97.4	104	1	42.0-146			6.56	24
n-Propylbenzene	25.0	U	26.9	27.5	108	110	1	47.0-144			2.23	20
Styrene	25.0	U	28.4	28.7	113	115	1	47.0-147			0.976	20
1,1,1,2-Tetrachloroethane	25.0	U	26.0	28.2	104	113	1	52.0-140			8.30	20
1,1,2,2-Tetrachloroethane	25.0	U	25.8	26.3	103	105	1	46.0-149			1.84	20
1,1,2-Trichlorotrifluoroethane	25.0	U	28.6	29.0	114	116	1	40.0-151			1.35	21
Tetrachloroethene	25.0	38.6	58.2	63.5	78.4	99.7	1	38.0-147			8.77	20
Toluene	25.0	U	25.4	26.4	102	105	1	42.0-141			3.73	20
1,2,3-Trichlorobenzene	25.0	U	22.8	25.5	91.1	102	1	45.0-145			11.3	22
1,2,4-Trichlorobenzene	25.0	U	23.1	25.1	92.4	101	1	49.0-147			8.42	21
1,1,1-Trichloroethane	25.0	U	28.6	30.1	115	120	1	46.0-140			4.97	20
1,1,2-Trichloroethane	25.0	U	25.2	25.6	101	102	1	54.0-139			1.47	20
Trichloroethene	25.0	0.549	25.1	25.7	98.3	100	1	32.0-156			2.07	20
Trichlorofluoromethane	25.0	U	34.6	35.8	139	143	1	32.0-152			3.17	20
1,2,3-Trichloropropane	25.0	U	25.7	26.5	103	106	1	54.0-143			3.06	21
1,2,4-Trimethylbenzene	25.0	U	31.9	30.5	127	122	1	41.0-146			4.44	20
1,2,3-Trimethylbenzene	25.0	U	24.6	25.7	98.2	103	1	48.0-138			4.64	20
1,3,5-Trimethylbenzene	25.0	U	27.6	29.0	110	116	1	44.0-143			4.92	20
Vinyl chloride	25.0	U	33.5	35.2	134	141	1	24.0-153			4.97	20
Xylenes, Total	75.0	U	79.4	84.4	106	113	1	41.0-148			6.11	20
(S) Toluene-d8					100	100		80.0-120				
(S) Dibromofluoromethane					97.9	98.6		76.0-123				
(S) 4-Bromofluorobenzene					102	99.3		80.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L978489-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978489-02 03/20/18 00:42 • (MS) R3295046-7 03/20/18 06:02 • (MSD) R3295046-8 03/20/18 06:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromochloromethane	25.0	U	26.4	25.0	106	99.9	1	53.0-138			5.51	20
Carbon disulfide	25.0	U	29.7	28.1	119	112	1	10.0-147			5.34	20
trans-1,4-Dichloro-2-butene	25.0	U	21.4	20.8	85.4	83.3	1	40.0-150			2.48	21
2-Hexanone	125	U	145	134	116	107	1	36.0-145			8.11	23
n-Hexane	25.0	U	31.4	29.1	125	117	1	13.0-145			7.34	20
Iodomethane	125	U	133	126	107	101	1	30.0-151			5.92	20
Acetone	125	U	140	135	112	108	1	10.0-139			3.43	25
Acrylonitrile	125	U	141	132	113	106	1	46.0-159			6.32	23
Benzene	25.0	U	27.2	25.7	109	103	1	34.0-147			5.66	20
Bromobenzene	25.0	U	26.4	24.7	106	98.7	1	51.0-137			6.64	20
Bromodichloromethane	25.0	U	28.8	27.2	115	109	1	52.0-135			6.01	20
Bromoform	25.0	U	28.3	26.3	113	105	1	50.0-146			7.29	20
Bromomethane	25.0	U	24.8	23.5	99.3	94.2	1	10.0-160			5.33	23
n-Butylbenzene	25.0	U	27.6	25.5	110	102	1	50.0-144			7.79	20
sec-Butylbenzene	25.0	U	32.9	30.9	132	123	1	48.0-143			6.41	20
tert-Butylbenzene	25.0	U	31.4	29.4	126	117	1	50.0-142			6.61	20
Carbon tetrachloride	25.0	U	28.7	27.5	115	110	1	41.0-138			4.35	20
Chlorobenzene	25.0	U	27.5	25.5	110	102	1	52.0-141			7.46	20
Vinyl acetate	125	U	156	145	125	116	1	30.0-160			7.42	20
Chlorodibromomethane	25.0	U	27.2	25.2	109	101	1	54.0-142			7.43	20
Chloroethane	25.0	U	28.9	27.6	116	111	1	23.0-160			4.52	20
Chloroform	25.0	U	27.1	25.6	108	102	1	50.0-139			5.78	20
Chloromethane	25.0	U	31.6	30.0	127	120	1	14.0-151			5.37	20
2-Chlorotoluene	25.0	U	28.2	26.2	113	105	1	48.0-142			7.47	20
4-Chlorotoluene	25.0	U	27.8	26.0	111	104	1	52.0-139			6.85	20
1,2-Dibromo-3-Chloropropane	25.0	U	24.8	23.0	99.2	91.9	1	49.0-144			7.68	24
1,2-Dibromoethane	25.0	U	27.3	25.5	109	102	1	54.0-140			7.09	20
Dibromomethane	25.0	U	27.1	25.5	108	102	1	53.0-138			6.01	20
1,2-Dichlorobenzene	25.0	U	25.5	23.8	102	95.4	1	56.0-139			6.51	20
1,3-Dichlorobenzene	25.0	U	28.4	26.3	114	105	1	50.0-141			7.48	20
1,4-Dichlorobenzene	25.0	U	26.5	24.8	106	99.0	1	53.0-136			6.73	20
Dichlorodifluoromethane	25.0	U	39.2	37.1	157	148	1	20.0-160			5.72	21
1,1-Dichloroethane	25.0	U	28.6	26.7	114	107	1	47.0-143			6.76	20
1,2-Dichloroethane	25.0	U	27.4	26.2	110	105	1	47.0-141			4.75	20
1,1-Dichloroethene	25.0	U	29.7	28.2	119	113	1	31.0-148			5.22	20
cis-1,2-Dichloroethene	25.0	0.398	26.6	25.0	105	98.5	1	43.0-142			6.10	20
trans-1,2-Dichloroethene	25.0	U	26.8	25.3	107	101	1	36.0-141			5.61	20
1,2-Dichloropropane	25.0	U	29.1	27.3	116	109	1	51.0-141			6.54	20
1,1-Dichloropropene	25.0	U	28.2	26.7	113	107	1	42.0-146			5.38	20
1,3-Dichloropropane	25.0	U	27.4	25.6	110	102	1	58.0-139			6.86	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

L978489-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978489-02 03/20/18 00:42 • (MS) R3295046-7 03/20/18 06:02 • (MSD) R3295046-8 03/20/18 06:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
cis-1,3-Dichloropropene	25.0	U	27.4	25.4	110	102	1	53.0-139			7.53	20
trans-1,3-Dichloropropene	25.0	U	27.4	25.3	109	101	1	51.0-143			7.74	20
2,2-Dichloropropane	25.0	U	28.4	26.8	114	107	1	43.0-139			5.82	20
Di-isopropyl ether	25.0	U	28.6	26.9	114	108	1	44.0-144			6.05	20
Ethylbenzene	25.0	U	28.2	26.0	113	104	1	42.0-147			8.22	20
Hexachloro-1,3-butadiene	25.0	U	27.3	25.0	109	99.9	1	44.0-146			8.87	21
Isopropylbenzene	25.0	U	29.9	28.1	120	112	1	48.0-141			6.25	20
p-Isopropyltoluene	25.0	U	31.2	29.0	125	116	1	49.0-146			7.08	20
2-Butanone (MEK)	125	U	138	130	111	104	1	12.0-149			5.77	24
Methylene Chloride	25.0	U	26.0	24.7	104	98.6	1	42.0-135			5.34	20
4-Methyl-2-pentanone (MIBK)	125	U	146	134	116	107	1	44.0-160			8.11	22
Methyl tert-butyl ether	25.0	U	27.7	26.1	111	104	1	42.0-142			6.05	20
Naphthalene	25.0	U	26.9	24.9	108	99.6	1	42.0-146			7.69	24
n-Propylbenzene	25.0	U	28.3	26.6	113	106	1	47.0-144			6.35	20
Styrene	25.0	U	30.4	28.3	122	113	1	47.0-147			7.08	20
1,1,1,2-Tetrachloroethane	25.0	U	28.3	26.6	113	106	1	52.0-140			6.32	20
1,1,2,2-Tetrachloroethane	25.0	U	27.5	25.4	110	102	1	46.0-149			7.81	20
1,1,2-Trichlorotrifluoroethane	25.0	U	29.6	28.1	118	112	1	40.0-151			5.40	21
Tetrachloroethene	25.0	2.71	28.7	26.3	104	94.4	1	38.0-147			8.79	20
Toluene	25.0	U	27.5	25.3	110	101	1	42.0-141			8.45	20
1,2,3-Trichlorobenzene	25.0	U	25.9	23.9	103	95.6	1	45.0-145			7.87	22
1,2,4-Trichlorobenzene	25.0	U	25.5	23.1	102	92.6	1	49.0-147			9.79	21
1,1,1-Trichloroethane	25.0	U	30.6	28.9	122	116	1	46.0-140			5.55	20
1,1,2-Trichloroethane	25.0	U	27.0	24.6	108	98.5	1	54.0-139			9.09	20
Trichloroethene	25.0	0.742	26.7	25.3	104	98.3	1	32.0-156			5.25	20
Trichlorofluoromethane	25.0	U	36.0	34.3	144	137	1	32.0-152			4.74	20
1,2,3-Trichloropropane	25.0	U	27.4	25.1	109	100	1	54.0-143			8.67	21
1,2,4-Trimethylbenzene	25.0	U	30.7	28.9	123	116	1	41.0-146			5.76	20
1,2,3-Trimethylbenzene	25.0	U	25.9	24.2	104	96.7	1	48.0-138			6.97	20
1,3,5-Trimethylbenzene	25.0	U	29.3	27.6	117	110	1	44.0-143			5.84	20
Vinyl chloride	25.0	U	36.3	34.1	145	136	1	24.0-153			6.15	20
Xylenes, Total	75.0	U	86.5	80.6	115	107	1	41.0-148			7.06	20
(S) Toluene-d8					102	100		80.0-120				
(S) Dibromofluoromethane					98.3	97.9		76.0-123				
(S) 4-Bromofluorobenzene					101	102		80.0-120				

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc



Method Blank (MB)

(MB) R3294905-4 03/21/18 00:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0100	0.0500
Acrylonitrile	U		0.00179	0.0100
Benzene	U		0.000270	0.00100
Bromobenzene	U		0.000284	0.00100
Bromodichloromethane	U		0.000254	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00134	0.00500
n-Butylbenzene	U		0.000258	0.00100
sec-Butylbenzene	U		0.000201	0.00100
tert-Butylbenzene	U		0.000206	0.00100
Carbon tetrachloride	U		0.000328	0.00100
Chlorobenzene	U		0.000212	0.00100
Chlorodibromomethane	U		0.000373	0.00100
Chloroethane	U		0.000946	0.00500
Chloroform	U		0.000229	0.00500
Chloromethane	U		0.000375	0.00250
2-Chlorotoluene	U		0.000301	0.00100
4-Chlorotoluene	U		0.000240	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00105	0.00500
1,2-Dibromoethane	U		0.000343	0.00100
Dibromomethane	U		0.000382	0.00100
1,2-Dichlorobenzene	U		0.000305	0.00100
1,3-Dichlorobenzene	U		0.000239	0.00100
1,4-Dichlorobenzene	U		0.000226	0.00100
Dichlorodifluoromethane	U		0.000713	0.00500
1,1-Dichloroethane	U		0.000199	0.00100
1,2-Dichloroethane	U		0.000265	0.00100
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
1,2-Dichloropropane	U		0.000358	0.00100
1,1-Dichloropropene	U		0.000317	0.00100
1,3-Dichloropropane	U		0.000207	0.00100
cis-1,3-Dichloropropene	U		0.000262	0.00100
trans-1,3-Dichloropropene	U		0.000267	0.00100
2,2-Dichloropropane	U		0.000279	0.00100
Di-isopropyl ether	U		0.000248	0.00100
Ethylbenzene	U		0.000297	0.00100
Hexachloro-1,3-butadiene	U		0.000342	0.00100
Isopropylbenzene	U		0.000243	0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3294905-4 03/21/18 00:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.000204	0.00100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00188	0.0100
Methyl tert-butyl ether	U		0.000212	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000206	0.00100
Styrene	U		0.000234	0.00100
1,1,1,2-Tetrachloroethane	U		0.000264	0.00100
1,1,2,2-Tetrachloroethane	U		0.000365	0.00100
Tetrachloroethene	U		0.000276	0.00100
Toluene	U		0.000434	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000365	0.00100
1,2,3-Trichlorobenzene	U		0.000306	0.00100
1,2,4-Trichlorobenzene	U		0.000388	0.00100
1,1,1-Trichloroethane	U		0.000286	0.00100
1,1,2-Trichloroethane	U		0.000277	0.00100
Trichloroethene	U		0.000279	0.00100
Trichlorofluoromethane	U		0.000382	0.00500
1,2,3-Trichloropropane	U		0.000741	0.00250
1,2,3-Trimethylbenzene	U		0.000287	0.00100
1,2,4-Trimethylbenzene	U		0.000211	0.00100
1,3,5-Trimethylbenzene	U		0.000266	0.00100
Vinyl chloride	U		0.000291	0.00100
Xylenes, Total	U		0.000698	0.00300
(S) Toluene-d8	108			80.0-120
(S) Dibromofluoromethane	97.3			74.0-131
(S) 4-Bromofluorobenzene	90.2			64.0-132

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Cp

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Tc

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Cn

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Gl

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Al

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3294905-1 03/20/18 22:23 • (LCSD) R3294905-2 03/20/18 22:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.0695	0.0654	55.6	52.3	11.0-160			6.07	23
Acrylonitrile	0.125	0.121	0.114	97.1	91.3	61.0-143			6.12	20
Benzene	0.0250	0.0242	0.0243	96.9	97.3	71.0-124			0.420	20
Bromobenzene	0.0250	0.0218	0.0218	87.3	87.1	78.0-120			0.147	20
Bromodichloromethane	0.0250	0.0212	0.0212	84.9	84.6	75.0-120			0.350	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3294905-1 03/20/18 22:23 • (LCSD) R3294905-2 03/20/18 22:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromoform	0.0250	0.0181	0.0177	72.3	70.7	65.0-133			2.25	20
Bromomethane	0.0250	0.0240	0.0249	95.9	99.6	26.0-160			3.78	20
n-Butylbenzene	0.0250	0.0235	0.0235	93.9	94.0	73.0-126			0.127	20
sec-Butylbenzene	0.0250	0.0243	0.0249	97.2	99.5	75.0-121			2.36	20
tert-Butylbenzene	0.0250	0.0243	0.0245	97.0	98.1	74.0-122			1.12	20
Carbon tetrachloride	0.0250	0.0231	0.0234	92.5	93.4	66.0-123			1.03	20
Chlorobenzene	0.0250	0.0276	0.0287	110	115	79.0-121			4.00	20
Chlorodibromomethane	0.0250	0.0227	0.0230	91.0	92.1	74.0-128			1.19	20
Chloroethane	0.0250	0.0237	0.0242	94.9	96.8	51.0-147			2.08	20
Chloroform	0.0250	0.0237	0.0238	95.0	95.1	73.0-123			0.113	20
Chloromethane	0.0250	0.0187	0.0188	74.7	75.1	51.0-138			0.545	20
2-Chlorotoluene	0.0250	0.0229	0.0231	91.6	92.3	72.0-124			0.818	20
4-Chlorotoluene	0.0250	0.0231	0.0235	92.6	94.0	78.0-120			1.54	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0230	0.0226	92.1	90.4	65.0-126			1.80	20
1,2-Dibromoethane	0.0250	0.0275	0.0280	110	112	78.0-122			1.55	20
Dibromomethane	0.0250	0.0243	0.0234	97.1	93.6	79.0-120			3.69	20
1,2-Dichlorobenzene	0.0250	0.0256	0.0258	102	103	80.0-120			0.803	20
1,3-Dichlorobenzene	0.0250	0.0254	0.0255	102	102	72.0-123			0.390	20
1,4-Dichlorobenzene	0.0250	0.0246	0.0247	98.5	98.7	77.0-120			0.149	20
Dichlorodifluoromethane	0.0250	0.0199	0.0196	79.8	78.3	49.0-155			1.88	20
1,1-Dichloroethane	0.0250	0.0244	0.0246	97.6	98.4	70.0-128			0.904	20
1,2-Dichloroethane	0.0250	0.0252	0.0249	101	99.8	69.0-128			0.995	20
1,1-Dichloroethene	0.0250	0.0232	0.0227	92.8	90.8	63.0-131			2.16	20
cis-1,2-Dichloroethene	0.0250	0.0240	0.0246	96.2	98.5	74.0-123			2.41	20
trans-1,2-Dichloroethene	0.0250	0.0228	0.0232	91.3	92.7	72.0-122			1.52	20
1,2-Dichloropropane	0.0250	0.0241	0.0241	96.4	96.2	75.0-126			0.172	20
1,1-Dichloropropene	0.0250	0.0251	0.0256	101	102	72.0-130			1.86	20
1,3-Dichloropropane	0.0250	0.0270	0.0277	108	111	80.0-121			2.35	20
cis-1,3-Dichloropropene	0.0250	0.0257	0.0261	103	104	80.0-125			1.33	20
trans-1,3-Dichloropropene	0.0250	0.0248	0.0257	99.3	103	75.0-129			3.29	20
2,2-Dichloropropane	0.0250	0.0205	0.0216	81.9	86.5	60.0-129			5.43	20
Di-isopropyl ether	0.0250	0.0207	0.0205	83.0	82.2	62.0-133			0.965	20
Ethylbenzene	0.0250	0.0249	0.0261	99.8	104	77.0-120			4.53	20
Hexachloro-1,3-butadiene	0.0250	0.0250	0.0255	100	102	68.0-128			1.72	20
Isopropylbenzene	0.0250	0.0217	0.0219	86.7	87.8	75.0-120			1.23	20
p-Isopropyltoluene	0.0250	0.0248	0.0251	99.1	100	74.0-125			1.18	20
2-Butanone (MEK)	0.125	0.0865	0.0790	69.2	63.2	37.0-159			8.98	20
Methylene Chloride	0.0250	0.0241	0.0239	96.5	95.8	67.0-123			0.745	20
4-Methyl-2-pentanone (MIBK)	0.125	0.118	0.112	94.4	89.2	60.0-144			5.68	20
Methyl tert-butyl ether	0.0250	0.0248	0.0236	99.4	94.3	66.0-125			5.24	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3294905-1 03/20/18 22:23 • (LCSD) R3294905-2 03/20/18 22:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.0250	0.0263	0.0258	105	103	64.0-125			2.05	20
n-Propylbenzene	0.0250	0.0229	0.0234	91.7	93.7	78.0-120			2.19	20
Styrene	0.0250	0.0223	0.0220	89.2	87.9	78.0-124			1.46	20
1,1,1,2-Tetrachloroethane	0.0250	0.0239	0.0249	95.5	99.6	74.0-124			4.19	20
1,1,2,2-Tetrachloroethane	0.0250	0.0220	0.0210	87.9	84.0	73.0-120			4.53	20
Tetrachloroethene	0.0250	0.0268	0.0289	107	115	70.0-127			7.37	20
Toluene	0.0250	0.0246	0.0253	98.4	101	77.0-120			2.91	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0242	0.0249	96.7	99.5	64.0-135			2.84	20
1,2,3-Trichlorobenzene	0.0250	0.0285	0.0286	114	115	68.0-126			0.402	20
1,2,4-Trichlorobenzene	0.0250	0.0279	0.0281	112	112	70.0-127			0.653	20
1,1,1-Trichloroethane	0.0250	0.0215	0.0216	85.9	86.4	69.0-125			0.627	20
1,1,2-Trichloroethane	0.0250	0.0263	0.0266	105	106	78.0-120			1.10	20
Trichloroethene	0.0250	0.0275	0.0285	110	114	79.0-120			3.47	20
Trichlorofluoromethane	0.0250	0.0252	0.0265	101	106	59.0-136			4.67	20
1,2,3-Trichloropropane	0.0250	0.0232	0.0226	92.9	90.5	73.0-124			2.69	20
1,2,3-Trimethylbenzene	0.0250	0.0252	0.0257	101	103	76.0-120			1.86	20
1,2,4-Trimethylbenzene	0.0250	0.0229	0.0233	91.5	93.1	75.0-120			1.73	20
1,3,5-Trimethylbenzene	0.0250	0.0233	0.0235	93.2	94.0	75.0-120			0.835	20
Vinyl chloride	0.0250	0.0225	0.0226	90.0	90.6	63.0-134			0.584	20
Xylenes, Total	0.0750	0.0757	0.0800	101	107	77.0-120			5.52	20
(S) Toluene-d8				106	111	80.0-120				
(S) Dibromofluoromethane				99.9	101	74.0-131				
(S) 4-Bromofluorobenzene				88.8	90.5	64.0-132				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L978301-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978301-03 03/21/18 07:57 • (MS) R3294905-5 03/21/18 08:36 • (MSD) R3294905-6 03/21/18 08:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	ND	9.30	8.92	65.9	62.8	100	10.0-160			4.12	36
Acrylonitrile	0.125	ND	11.6	10.8	92.5	86.0	100	14.0-160			7.31	33
Benzene	0.0250	ND	2.48	2.36	99.1	94.4	100	13.0-146			4.82	27
Bromobenzene	0.0250	ND	2.12	2.02	84.8	80.8	100	10.0-149			4.86	33
Bromodichloromethane	0.0250	ND	2.21	2.16	88.2	86.3	100	15.0-142			2.19	28
Bromoform	0.0250	ND	1.70	1.71	67.8	68.3	100	10.0-147			0.762	31
Bromomethane	0.0250	ND	1.84	1.71	73.5	68.6	100	10.0-160			6.91	32
n-Butylbenzene	0.0250	ND	2.05	1.93	82.0	77.1	100	10.0-154			6.05	37
sec-Butylbenzene	0.0250	ND	2.26	2.15	90.4	85.9	100	10.0-151			5.10	36
tert-Butylbenzene	0.0250	ND	2.28	2.19	91.3	87.4	100	10.0-152			4.35	35

L978301-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978301-03 03/21/18 07:57 • (MS) R3294905-5 03/21/18 08:36 • (MSD) R3294905-6 03/21/18 08:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.0250	ND	2.38	2.30	95.4	91.9	100	13.0-140			3.72	30
Chlorobenzene	0.0250	ND	2.71	2.72	109	109	100	10.0-149			0.354	31
Chlorodibromomethane	0.0250	ND	2.19	2.25	87.7	90.2	100	12.0-147			2.74	29
Chloroethane	0.0250	ND	1.29	1.16	51.7	46.2	100	10.0-159			11.3	33
Chloroform	0.0250	ND	2.47	2.30	98.9	92.2	100	18.0-148			7.03	28
Chloromethane	0.0250	ND	2.13	2.05	85.1	82.1	100	10.0-146			3.66	29
2-Chlorotoluene	0.0250	ND	2.22	2.11	88.8	84.3	100	10.0-151			5.23	35
4-Chlorotoluene	0.0250	ND	2.22	2.07	88.9	82.8	100	10.0-150			7.10	35
1,2-Dibromo-3-Chloropropane	0.0250	ND	1.96	1.94	78.5	77.7	100	10.0-149			1.06	34
1,2-Dibromoethane	0.0250	ND	2.69	2.64	108	105	100	14.0-145			2.09	28
Dibromomethane	0.0250	ND	2.40	2.35	96.1	94.2	100	18.0-144			2.09	27
1,2-Dichlorobenzene	0.0250	ND	2.21	2.10	88.5	83.8	100	10.0-153			5.44	34
1,3-Dichlorobenzene	0.0250	ND	2.38	2.24	95.0	89.6	100	10.0-150			5.93	35
1,4-Dichlorobenzene	0.0250	ND	2.21	2.07	88.2	83.0	100	10.0-148			6.18	34
Dichlorodifluoromethane	0.0250	ND	2.80	2.87	112	115	100	10.0-160			2.37	30
1,1-Dichloroethane	0.0250	ND	2.50	2.37	99.8	95.0	100	19.0-148			4.96	28
1,2-Dichloroethane	0.0250	ND	2.50	2.35	100	94.1	100	17.0-147			6.20	27
1,1-Dichloroethene	0.0250	ND	2.43	2.34	97.2	93.6	100	10.0-150			3.70	31
cis-1,2-Dichloroethene	0.0250	ND	2.43	2.31	97.4	92.6	100	16.0-145			5.05	28
trans-1,2-Dichloroethene	0.0250	ND	2.28	2.19	91.2	87.4	100	11.0-142			4.23	29
1,2-Dichloropropane	0.0250	ND	2.48	2.44	99.4	97.5	100	17.0-148			1.90	28
1,1-Dichloropropene	0.0250	ND	2.45	2.36	98.2	94.4	100	10.0-150			3.94	30
1,3-Dichloropropane	0.0250	ND	2.65	2.64	106	106	100	16.0-148			0.277	27
cis-1,3-Dichloropropene	0.0250	ND	2.48	2.50	99.1	99.8	100	13.0-150			0.737	28
trans-1,3-Dichloropropene	0.0250	ND	2.45	2.46	97.9	98.2	100	10.0-152			0.363	29
2,2-Dichloropropane	0.0250	ND	2.25	2.07	90.0	82.7	100	16.0-143			8.47	30
Di-isopropyl ether	0.0250	ND	2.07	1.96	83.0	78.3	100	16.0-149			5.74	28
Ethylbenzene	0.0250	ND	2.51	2.53	100	101	100	10.0-147			0.967	31
Hexachloro-1,3-butadiene	0.0250	ND	1.42	1.46	56.8	58.4	100	10.0-154			2.85	40
Isopropylbenzene	0.0250	ND	2.25	2.13	89.9	85.2	100	10.0-147			5.29	33
p-Isopropyltoluene	0.0250	ND	2.29	2.12	91.6	84.9	100	10.0-156			7.56	37
2-Butanone (MEK)	0.125	ND	9.20	8.91	73.6	71.3	100	10.0-160			3.19	33
Methylene Chloride	0.0250	ND	2.40	2.27	96.2	90.8	100	16.0-139			5.77	29
4-Methyl-2-pentanone (MIBK)	0.125	ND	11.5	11.2	91.7	89.8	100	12.0-160			2.05	32
Methyl tert-butyl ether	0.0250	ND	2.58	2.46	103	98.4	100	21.0-145			4.87	29
Naphthalene	0.0250	ND	2.23	1.76	89.2	70.5	100	10.0-153			23.5	36
n-Propylbenzene	0.0250	ND	2.27	2.17	90.9	86.9	100	10.0-151			4.48	34
Styrene	0.0250	ND	2.31	2.19	92.4	87.7	100	10.0-155			5.20	34
1,1,1,2-Tetrachloroethane	0.0250	ND	2.44	2.37	97.6	94.8	100	10.0-147			2.91	30
1,1,2,2-Tetrachloroethane	0.0250	ND	2.12	2.03	84.9	81.2	100	10.0-155			4.50	31

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



L978301-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978301-03 03/21/18 07:57 • (MS) R3294905-5 03/21/18 08:36 • (MSD) R3294905-6 03/21/18 08:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Tetrachloroethene	0.0250	ND	2.73	2.73	109	109	100	10.0-144			0.0754	32
Toluene	0.0250	ND	2.56	2.58	101	101	100	10.0-144			0.491	28
1,1,2-Trichlorotrifluoroethane	0.0250	ND	2.40	2.37	96.0	94.7	100	10.0-153			1.32	33
1,2,3-Trichlorobenzene	0.0250	ND	1.81	1.75	72.4	69.9	100	10.0-153			3.61	40
1,2,4-Trichlorobenzene	0.0250	ND	2.03	1.91	81.3	76.3	100	10.0-156			6.41	40
1,1,1-Trichloroethane	0.0250	ND	2.37	2.23	94.7	89.3	100	18.0-145			5.93	29
1,1,2-Trichloroethane	0.0250	ND	2.57	2.58	103	103	100	12.0-151			0.609	28
Trichloroethene	0.0250	ND	2.67	2.60	107	104	100	11.0-148			2.88	29
Trichlorofluoromethane	0.0250	ND	2.85	2.70	114	108	100	10.0-157			5.37	34
1,2,3-Trichloropropane	0.0250	ND	2.36	2.14	94.3	85.6	100	10.0-154			9.68	32
1,2,3-Trimethylbenzene	0.0250	ND	2.48	2.23	99.1	89.2	100	10.0-150			10.5	33
1,2,4-Trimethylbenzene	0.0250	ND	2.39	2.17	95.8	87.0	100	10.0-151			9.63	34
1,3,5-Trimethylbenzene	0.0250	ND	2.34	2.21	93.5	88.4	100	10.0-150			5.62	33
Vinyl chloride	0.0250	ND	2.67	2.56	107	102	100	10.0-150			4.39	29
Xylenes, Total	0.0750	ND	7.62	7.53	102	100	100	10.0-150			1.19	31
(S) Toluene-d8					107	112		80.0-120				
(S) Dibromofluoromethane					98.7	97.6		74.0-131				
(S) 4-Bromofluorobenzene					93.9	91.3		64.0-132				

Sample Narrative:

OS: Lowest possible dilution due to sample matrix.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: Calibration verification outside of acceptance limits. Result is estimated.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

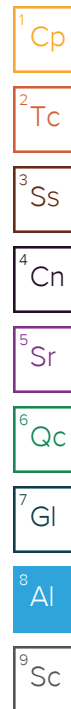
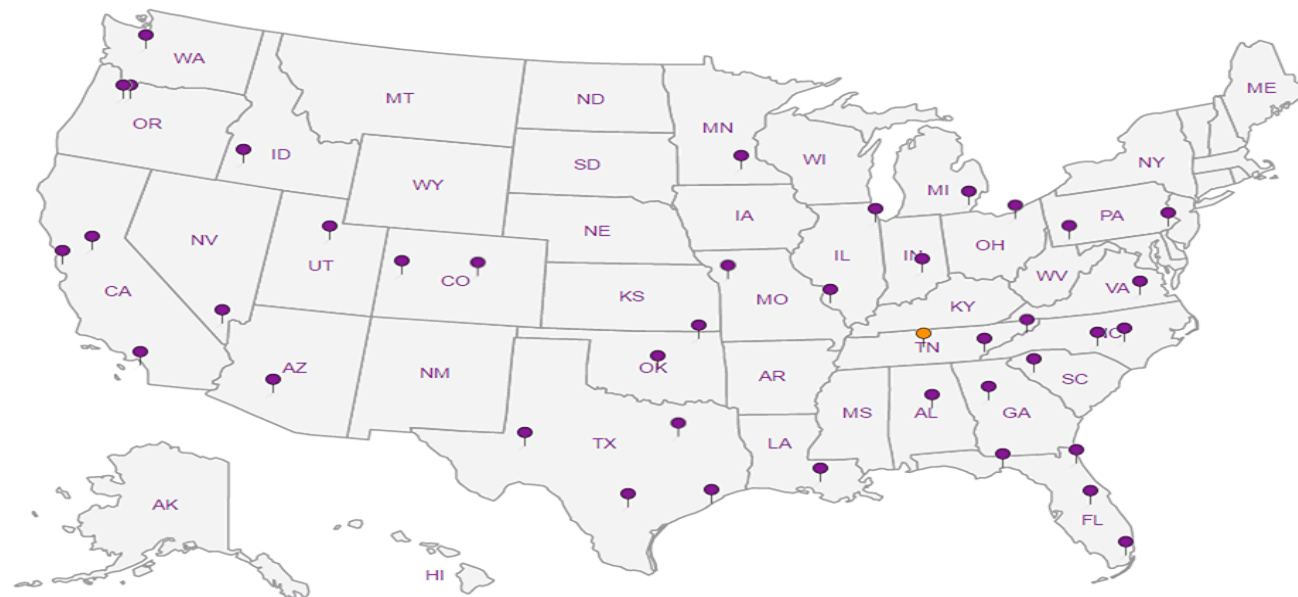
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



APEX Companies - Portland, OR

Two Union Square
Suite 4200
Seattle WA 98101

Report to:
Jie Xu

Billing Information:

Accounts Payable- Cindi Joy Staller
3015 SW First Avenue
Portland, OR 97201-4707

Email To: jie.xu@apexcos.com

Pres.
Chk

Analysis / Container / Preservative

Chain of Custody Page ____ of ____



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 1978402
B243

Acctnum: ASHCREPOR

Template: T133096

Prelogin: P640313

TSR: 110 - Brian Ford

PB:

Shipped Via:

Remarks

Sample # (lab only)

Project: Claremont Village Shopping Cent
Description:

City/State
Collected: Everett, WA

Phone: 503-924-4704
Fax: 503-943-6357

Client Project #
PECO_2018_001

Lab Project #
ASHCREPOR-PECO

Collected by (print):

Jie Xu

Site/Facility ID #
Claremont Village

P.O. #

Collected by (signature):

[Signature]

Rush? (Lab MUST Be Notified)

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ☒ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Immediately
Packed on Ice N ___ Y ☒

No.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

V8260C VOCs 40ml/NaHSO4/Syr/MeOH

dry wt, voc screen 2ozClr-NoPres

SVE-2C(10')

Grab

SS

10'

3/13/2018

1320

5

X

X

SVE-2C(40')

Grab

SS

40'

3/13/2018

1600

5

X

X

OBS-2C(10')

Grab

SS

10'

3/14/2018

1745

5

X

X

OBS-2C(38')

Grab

SS

38'

3/14/2018

1658

5

X

X

MW-1C(10')

Grab

SS

10'

3/15/2018

1310

5

X

X

Decon Water

Grab

SS^{low}

—

3/16/2018

0920

4

X

●

MW-1 (75')

Grab

SS

75'

3/16/2018

1035

5

X

X

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

UPS ☒ FedEx ___ Courier ___

Tracking # 4269 9203 155A

pH ___ Temp ___

Flow ___ Other ___

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ___ N ___
COC Signed/Accurate: ☒ Y ___ N ___
Bottles arrive intact: ☒ Y ___ N ___
Correct bottles used: ☒ Y ___ N ___
Sufficient volume sent: ☒ Y ___ N ___
If Applicable
VOA Zero Headspace: ☒ Y ___ N ___
Preservation Correct/Checked: ☒ Y ___ N ___

Relinquished by: (Signature)

Jie Xu

Date:

3/16/2018

Time:

1130

Received by: (Signature)

Trip Blank Received: Yes/No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C

Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

Time:

Hold:

Condition:

NCF / ☒

3-17-18 0845

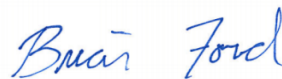
May 10, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L990862
Samples Received: 05/03/2018
Project Number: PECO-2018-01
Description: Claremont Village

Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1
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S1 (3) L990862-01 Solid

Collected by
A. CerrutiCollected date/time
05/01/18 15:47Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1108515	1	05/09/18 13:55	05/09/18 14:07	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1107772	1	05/01/18 15:47	05/07/18 14:52	JHH

¹ Cp² Tc³ Ss

S2 (3) L990862-02 Solid

Collected by
A. CerrutiCollected date/time
05/01/18 15:50Received date/time
05/03/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1108515	1	05/09/18 13:55	05/09/18 14:07	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1107772	1	05/01/18 15:50	05/07/18 15:11	JHH

⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	89.4		1	05/09/2018 14:07	WG1108515

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
1,1-Dichloroethene	U		0.000559	0.00280	1	05/07/2018 14:52	WG1107772
cis-1,2-Dichloroethene	U		0.000772	0.00280	1	05/07/2018 14:52	WG1107772
trans-1,2-Dichloroethene	U		0.00160	0.00559	1	05/07/2018 14:52	WG1107772
Tetrachloroethene	0.0133		0.000783	0.00280	1	05/07/2018 14:52	WG1107772
Trichloroethene	0.000451	J	0.000447	0.00112	1	05/07/2018 14:52	WG1107772
Vinyl chloride	U		0.000764	0.00280	1	05/07/2018 14:52	WG1107772
(S) Toluene-d8	106			80.0-120		05/07/2018 14:52	WG1107772
(S) Dibromofluoromethane	87.1			74.0-131		05/07/2018 14:52	WG1107772
(S) 4-Bromofluorobenzene	99.7			64.0-132		05/07/2018 14:52	WG1107772

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	92.6		1	05/09/2018 14:07	WG1108515

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
1,1-Dichloroethene	U		0.000540	0.00270	1	05/07/2018 15:11	WG1107772
cis-1,2-Dichloroethene	U		0.000745	0.00270	1	05/07/2018 15:11	WG1107772
trans-1,2-Dichloroethene	U		0.00154	0.00540	1	05/07/2018 15:11	WG1107772
Tetrachloroethene	0.0143		0.000756	0.00270	1	05/07/2018 15:11	WG1107772
Trichloroethene	U		0.000432	0.00108	1	05/07/2018 15:11	WG1107772
Vinyl chloride	U		0.000738	0.00270	1	05/07/2018 15:11	WG1107772
(S) Toluene-d8	111			80.0-120		05/07/2018 15:11	WG1107772
(S) Dibromofluoromethane	65.2	J2		74.0-131		05/07/2018 15:11	WG1107772
(S) 4-Bromofluorobenzene	105			64.0-132		05/07/2018 15:11	WG1107772

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

L990862-01,02

Method Blank (MB)

(MB) R3308481-1 05/09/18 14:07

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.000			

Cp

$$T_C$$

3
Ss

Cm

 ${}^5\text{Sr}$

6

7

3

9

L990865-01 Original Sample (OS) • Duplicate (DUP)

(OS) L990865-01 05/09/18 14:07 • (DUP) R3308481-3 05/09/18 14:07

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	83.1	82.3	1	0.898		5

Laboratory Control Sample (LCS)

(LCS) R3308481-2 05/09/18 14:07

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Total Solids	50.0	50.0	99.9	85.0-115	

Method Blank (MB)

(MB) R3307902-3 05/07/18 09:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,1-Dichloroethene	U		0.000500	0.00250
cis-1,2-Dichloroethene	U		0.000690	0.00250
trans-1,2-Dichloroethene	U		0.00143	0.00500
Tetrachloroethene	U		0.000700	0.00250
Trichloroethene	U		0.000400	0.00100
Vinyl chloride	U		0.000683	0.00250
(S) Toluene-d8	111			80.0-120
(S) Dibromofluoromethane	78.3			74.0-131
(S) 4-Bromofluorobenzene	106			64.0-132

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307902-1 05/07/18 08:26 • (LCSD) R3307902-2 05/07/18 08:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	0.125	0.122	0.115	97.8	92.2	60.6-133			5.82	20
cis-1,2-Dichloroethene	0.125	0.125	0.118	99.8	94.0	76.1-121			5.99	20
trans-1,2-Dichloroethene	0.125	0.121	0.113	96.9	90.6	70.7-124			6.65	20
Tetrachloroethene	0.125	0.115	0.116	92.1	93.0	71.1-133			0.973	20
Trichloroethene	0.125	0.115	0.111	92.0	88.8	77.2-122			3.51	20
Vinyl chloride	0.125	0.119	0.114	95.4	91.0	58.4-134			4.71	20
(S) Toluene-d8				99.3	101	80.0-120				
(S) Dibromofluoromethane				106	101	74.0-131				
(S) 4-Bromofluorobenzene				98.1	103	64.0-132				

L991108-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L991108-08 05/07/18 18:02 • (MS) R3307902-4 05/07/18 18:21 • (MSD) R3307902-5 05/07/18 18:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	0.125	U	6.91	22.8	27.6	91.3	200	36.1-142	J6	J3	107	25.6
cis-1,2-Dichloroethene	0.125	0.893	12.2	25.5	45.4	98.6	200	50.6-133	J6	J3	70.3	23
trans-1,2-Dichloroethene	0.125	U	7.14	22.3	28.6	89.2	200	43.8-135	J6	J3	103	24.8
Tetrachloroethene	0.125	892	1040	993	573	404	200	37.7-140	E V	E V	4.17	29.2
Trichloroethene	0.125	11.8	23.4	36.6	46.1	98.9	200	48.0-132	J6	J3	44.0	24.8
Vinyl chloride	0.125	U	5.91	19.3	23.7	77.4	200	32.0-146	J6	J3	106	26.3
(S) Toluene-d8					102	102		80.0-120				
(S) Dibromofluoromethane					104	104		74.0-131				
(S) 4-Bromofluorobenzene					104	103		64.0-132				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

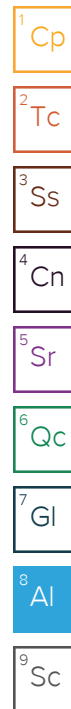
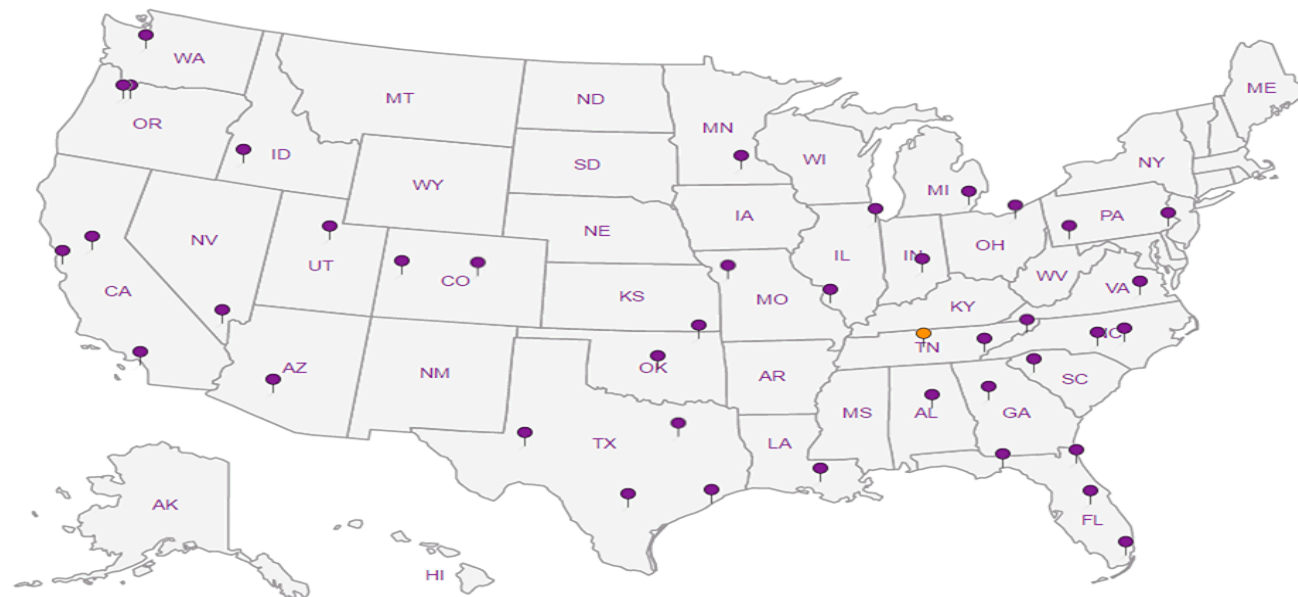
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



Andy Vann

From: Brian Ford
Sent: Thursday, May 03, 2018 5:09 PM
To: Login; Brian Ford
Subject: *ASHCREPOR* log off hold label 5-014
Attachments: Scan.pdf

Log the following for V8260C, TS, and TERRACORE. Log as R5 due 05/10.

LOC-1 (3)
LOC-2 (3)

Thanks,

✉ **Brian Ford**

Technical Service Representative

ESC Lab Sciences-a subsidiary of Pace Analytical

12065 Lebanon Road | Mt. Juliet, TN 37122

615.773.9772

bford@esclabsciences.com | www.esclabsciences.com

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Brian Ford

From: Jie Xu <Jie.Xu@apexcos.com>
Sent: Wednesday, May 2, 2018 5:53 PM
To: Brian Ford
Subject: Claremont Project #PECO_2018-01 Task 02
Attachments: COC.pdf
Categories: Revise report or login

Hey Brian,

You will receive this cooler analyzed for VOCs 10-day TAT tomorrow, can you please revise the sample IDs as following:

"LOC-1 (3)" to "S1 (3)"

"LOC-2 (3)" to "S2 (3)"

"LOC-3 (3)" to "S3 (3)"

"LOC-4 (3)" to "S4 (3)"

Thanks!

Jie



Follow Apex on  and Like us on 

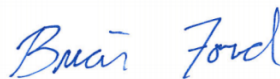
Privacy Notice: This message and any attachment(s) hereto are intended solely for the individual(s) listed in the masthead. This message may contain information that is privileged or otherwise protected from disclosure. Any review, dissemination or use of this message or its contents by persons other than the addressee(s) is strictly prohibited and may be unlawful. If you have received this message in error, please notify the sender by return e-mail and delete this message from your system. Thank you.

May 30, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L995690
Samples Received: 05/22/2018
Project Number: PECO-2018
Description: Claremont Village
Site: CLAREMONT
Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



DECON-WATER L995690-01 GW

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 16:15	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 1664A	WG1115518	1	05/24/18 08:53	05/24/18 17:31	JM
Wet Chemistry by Method 4500CN E-2011	WG1115335	1	05/24/18 11:56	05/24/18 16:17	KK
Mercury by Method 7470A	WG1114507	1	05/22/18 12:55	05/22/18 22:53	EL
Metals (ICP) by Method 6010C	WG1114466	1	05/22/18 11:31	05/23/18 01:35	TRB
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1114542	1	05/22/18 21:18	05/22/18 21:18	BMF
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1114542	1	05/23/18 13:29	05/23/18 13:29	BMF

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SS-BC-2 L995690-02 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 14:17	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 18:47	05/25/18 18:47	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1116646	25	05/26/18 14:27	05/26/18 14:27	MBF

SS-BC-3 L995690-03 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 14:27	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 19:40	05/25/18 19:40	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1116646	25	05/26/18 15:08	05/26/18 15:08	MBF

SS-BC-4 L995690-04 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 14:39	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 20:29	05/25/18 20:29	AMC

SS-WB-2 L995690-05 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 15:33	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 21:18	05/25/18 21:18	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1116646	25	05/26/18 15:49	05/26/18 15:49	MBF

SS-WB-3 L995690-06 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 15:35	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 22:07	05/25/18 22:07	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1116646	20	05/26/18 16:32	05/26/18 16:32	MBF

SS-WB-4 L995690-07 Air

			Collected by	Collected date/time	Received date/time
			Jie Xu	05/18/18 15:37	05/22/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1116200	1	05/25/18 22:56	05/25/18 22:56	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1116646	20	05/26/18 17:14	05/26/18 17:14	MBF

ACCOUNT:

APEX Companies - Portland, OR

PROJECT:

PECO-2018

SDG:

L995690

DATE/TIME:

05/30/18 10:16

PAGE:

3 of 21



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TPH - Oil & Grease	2140	J	725	7140	1	05/24/2018 17:31	WG1115518

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 4500CN E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Cyanide	U		1.80	5.00	1	05/24/2018 16:17	WG1115335

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	05/22/2018 22:53	WG1114507

Metals (ICP) by Method 6010C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	U		6.50	10.0	1	05/23/2018 01:35	WG1114466
Cadmium	U		0.700	2.00	1	05/23/2018 01:35	WG1114466
Chromium	70.8		1.40	10.0	1	05/23/2018 01:35	WG1114466
Copper	33.8		5.30	10.0	1	05/23/2018 01:35	WG1114466
Lead	U		1.90	5.00	1	05/23/2018 01:35	WG1114466
Nickel	66.1		4.90	10.0	1	05/23/2018 01:35	WG1114466
Silver	U		2.80	5.00	1	05/23/2018 01:35	WG1114466
Zinc	249		5.90	50.0	1	05/23/2018 01:35	WG1114466

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	U		0.188	0.500	1	05/22/2018 21:18	WG1114542
cis-1,2-Dichloroethene	0.143	B J	0.0933	0.500	1	05/23/2018 13:29	WG1114542
trans-1,2-Dichloroethene	U		0.152	0.500	1	05/22/2018 21:18	WG1114542
Tetrachloroethene	U		0.199	0.500	1	05/23/2018 13:29	WG1114542
Trichloroethene	U		0.153	0.500	1	05/23/2018 13:29	WG1114542
Vinyl chloride	U		0.118	0.500	1	05/23/2018 13:29	WG1114542
(S) Toluene-d8	95.9			80.0-120		05/23/2018 13:29	WG1114542
(S) Toluene-d8	95.3			80.0-120		05/22/2018 21:18	WG1114542
(S) Dibromofluoromethane	109			76.0-123		05/23/2018 13:29	WG1114542
(S) Dibromofluoromethane	108			76.0-123		05/22/2018 21:18	WG1114542
(S) 4-Bromofluorobenzene	111			80.0-120		05/23/2018 13:29	WG1114542
(S) 4-Bromofluorobenzene	110			80.0-120		05/22/2018 21:18	WG1114542



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	5.00	33.9	485	3300		25	WG1116646
Trichloroethylene	79-01-6	131	0.200	1.07	8.28	44.4		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.1				WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.7				WG1116646

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	5.00	33.9	238	1620		25	WG1116646
Trichloroethylene	79-01-6	131	0.200	1.07	8.05	43.1		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.5				WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.7				WG1116646

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	0.200	1.36	29.5	200		1	WG1116200
Trichloroethylene	79-01-6	131	0.200	1.07	0.750	4.02		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1116200

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	5.00	33.9	337	2290		25	WG1116646
Trichloroethylene	79-01-6	131	0.200	1.07	0.399	2.14		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.3				WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.9				WG1116646

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	4.00	27.2	158	1070		20	WG1116646
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.0				WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.1				WG1116646

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1116200
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1116200
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1116200
Tetrachloroethylene	127-18-4	166	4.00	27.2	144	976		20	WG1116646
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1116200
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.8				WG1116200
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		100				WG1116646

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3312921-1 05/24/18 17:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPH - Oil & Grease	U		725	5000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312921-2 05/24/18 17:27 • (LCSD) R3312921-3 05/24/18 17:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH - Oil & Grease	20000	18200	18600	91.0	93.0	78.0-114			2.17	18

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3312873-1 05/24/18 15:42

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Cyanide	U		1.80	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L994117-02 Original Sample (OS) • Duplicate (DUP)

(OS) L994117-02 05/24/18 15:47 • (DUP) R3312873-4 05/24/18 15:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Cyanide	ND	1.83	1	0.000		20

L995798-02 Original Sample (OS) • Duplicate (DUP)

(OS) L995798-02 05/24/18 16:22 • (DUP) R3312873-7 05/24/18 16:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Cyanide	ND	2.10	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312873-2 05/24/18 15:43 • (LCSD) R3312873-3 05/24/18 15:44

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Cyanide	100	112	103	112	103	85.0-115			8.37	20

L995371-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L995371-20 05/24/18 16:10 • (MS) R3312873-5 05/24/18 16:11 • (MSD) R3312873-6 05/24/18 16:12

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	97.1	108	97.1	108	1	75.0-125			10.6	20



Method Blank (MB)

(MB) R3312163-1 05/22/18 22:15

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312163-2 05/22/18 22:18 • (LCSD) R3312163-3 05/22/18 22:20

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.80	2.93	93.3	97.6	80.0-120			4.54	20

L995435-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L995435-17 05/22/18 22:23 • (MS) R3312163-4 05/22/18 22:26 • (MSD) R3312163-5 05/22/18 22:36

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	ND	2.99	3.04	99.7	101	1	75.0-125			1.57	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3312185-1 05/23/18 01:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		6.50	10.0
Cadmium	U		0.700	2.00
Chromium	U		1.40	10.0
Copper	U		5.30	10.0
Lead	U		1.90	5.00
Nickel	U		4.90	10.0
Silver	U		2.80	5.00
Zinc	U		5.90	50.0

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312185-2 05/23/18 01:15 • (LCSD) R3312185-3 05/23/18 01:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	1030	1070	103	107	80.0-120			4.35	20
Cadmium	1000	1000	1030	100	103	80.0-120			2.33	20
Chromium	1000	1020	1020	102	102	80.0-120			0.285	20
Copper	1000	1020	1010	102	101	80.0-120			0.312	20
Lead	1000	987	1000	98.7	100	80.0-120			1.57	20
Nickel	1000	994	1010	99.4	101	80.0-120			1.75	20
Silver	200	195	195	97.5	97.5	80.0-120			0.0752	20
Zinc	1000	977	1010	97.7	101	80.0-120			3.08	20

L995661-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L995661-01 05/23/18 01:22 • (MS) R3312185-5 05/23/18 01:28 • (MSD) R3312185-6 05/23/18 01:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	14.3	1080	999	107	98.5	1	75.0-125			8.01	20
Cadmium	1000	ND	1030	986	103	98.6	1	75.0-125			4.48	20
Chromium	1000	ND	1010	993	100	99.0	1	75.0-125			1.36	20
Copper	1000	ND	1020	1000	102	100	1	75.0-125			1.62	20
Lead	1000	ND	1000	971	100	97.1	1	75.0-125			3.03	20
Nickel	1000	ND	999	964	99.9	96.4	1	75.0-125			3.51	20
Silver	200	ND	195	191	97.4	95.6	1	75.0-125			1.90	20
Zinc	1000	ND	1010	961	101	95.4	1	75.0-125			5.27	20



Method Blank (MB)

(MB) R3313213-3 05/25/18 10:37

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
Tetrachloroethylene	U		0.0497	0.200
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	95.2			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3313213-1 05/25/18 09:03 • (LCSD) R3313213-2 05/25/18 09:50

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.66	3.72	97.5	99.1	70.0-130			1.66	25
1,1-Dichloroethene	3.75	3.78	3.76	101	100	70.0-130			0.737	25
trans-1,2-Dichloroethene	3.75	3.79	3.77	101	100	70.0-130			0.632	25
cis-1,2-Dichloroethene	3.75	3.80	3.77	101	101	70.0-130			0.910	25
Trichloroethylene	3.75	3.93	3.89	105	104	70.0-130			1.01	25
Tetrachloroethylene	3.75	4.08	4.05	109	108	70.0-130			0.754	25
(S) 1,4-Bromofluorobenzene				98.9	98.7	60.0-140				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3313477-2 05/26/18 10:07

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
Tetrachloroethylene	U		0.0497	0.200
(S) 1,4-Bromofluorobenzene	93.6			60.0-140

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3313477-1 05/26/18 09:22 • (LCSD) R3313477-3 05/26/18 11:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Tetrachloroethylene	3.75	3.96	4.00	106	107	70.0-130			0.841	25
(S) 1,4-Bromofluorobenzene				100	102	60.0-140				

Method Blank (MB)

(MB) R3312139-4 05/22/18 12:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	0.205	J	0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	94.1			80.0-120
(S) Dibromofluoromethane	109			76.0-123
(S) 4-Bromofluorobenzene	111			80.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312139-2 05/22/18 10:14 • (LCSD) R3312139-3 05/22/18 10:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	25.0	23.1	23.9	92.3	95.7	64.0-129			3.65	20
cis-1,2-Dichloroethene	25.0	25.5	25.4	102	102	73.0-120			0.405	20
trans-1,2-Dichloroethene	25.0	24.8	25.0	99.1	100	71.0-121			1.09	20
Tetrachloroethene	25.0	22.2	22.3	88.6	89.3	70.0-127			0.750	20
Trichloroethene	25.0	23.3	24.2	93.0	97.0	78.0-120			4.18	20
Vinyl chloride	25.0	21.3	21.7	85.3	87.0	64.0-133			1.90	20
(S) Toluene-d8				94.6	94.9	80.0-120				
(S) Dibromofluoromethane				108	105	76.0-123				
(S) 4-Bromofluorobenzene				111	116	80.0-120				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN2000002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

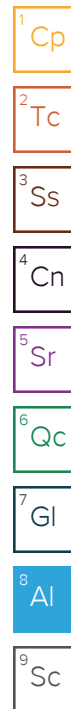
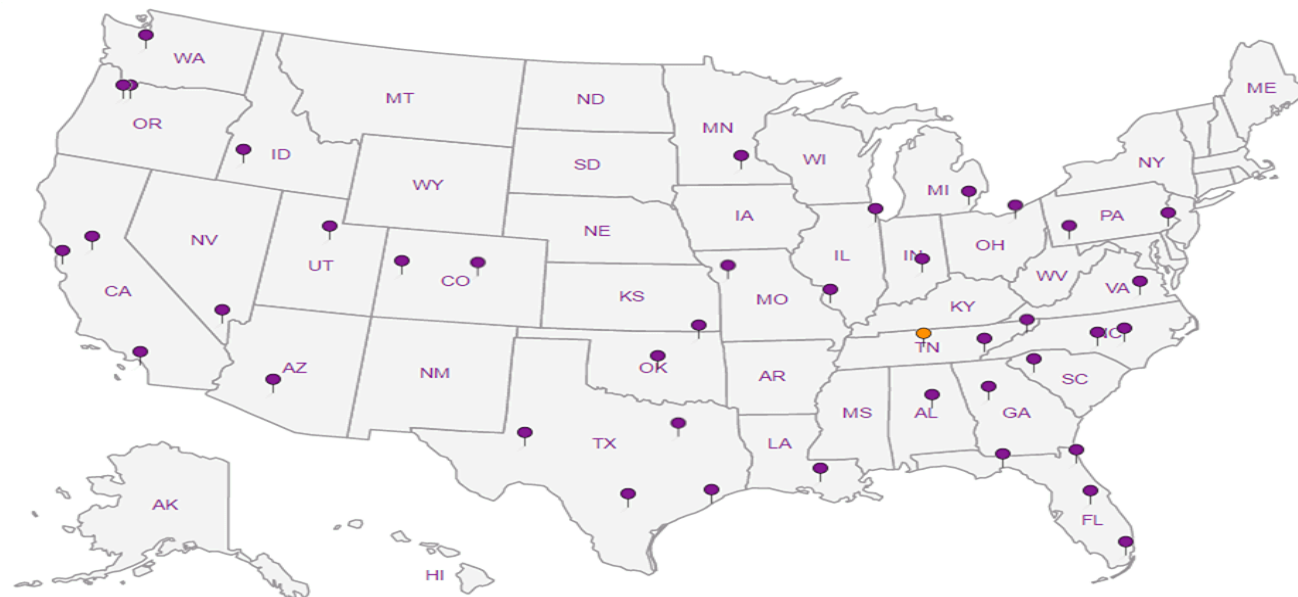
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



APEX Companies - Portland, OR

Two Union Square
Suite 4200
Seattle WA 98101

Report to:
Jie Xu

Project Claremont Village
Description:

Phone: 503-924-4704
Fax: 503-943-6357

Collected by (print):
Jie Xu

Collected by (signature):

Immediately
Packed on Ice N ☐ Y ☒

Billing Information:

Accounts Payable- Cindi Joy Staller
3015 SW First Avenue
Portland, OR 97201-4707

Email To: jie.xu@apexcos.com;
jfoxwell@apexcos.com;

City/State
Collected: Everett, WA

Lab Project #
ASHCREPOR-PECO

P.O. #

Quote #

Date Results Needed

Pres
Chk

Analysis / Container / Preservative

CN cyanide 250mlHDPEAmb-NaOH

Helium Summa

IPA by TO-15 Summa

TO-15* Summa

TO-15SIM* Summa

TPH oil&grease 1L-Clr-Add HCl

Total Metals** 250mlHDPE-HNO3

V8260 VOCs* 40mlAmb-HCl

Chain of Custody

Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 945650

Ta M151

Acctnum: ASHCREPOR

Template: T136114

Prelogin: P653261

TSR: 110 - Brian Ford

PB: Tb 5-11-13

Shipped Via: FedEX Ground

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Contrs												
Decon-Water		GW		5/18/18	1615	6	✓											
		GW																
SS-BC-2		Air		5/18/18	1417	1				✓								02
SS-BC-3		Air			1427	1				✓								03
SS-BC-4		Air			1439	1				✓								04
SS-WB-2		Air			1533	1				✓								05
SS-WB-3		Air			1535	1				✓								06
SS-WB-4		Air			1537	1				✓								07
		Air																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: *VOC 8260/TO-15/TO-15SIM compound list=PCE,TCE,11-DCE,cis-12-DCE,trans-12-DCE,VC.

**total metals=Ag,As,Cd,Cr,Cu,Hg,Ni,Pb,Zn

Samples returned via:
☐ UPS ☒ FedEx ☐ Courier

pH _____ Temp _____

Flow _____ Other _____

Tracking # 4380 6869 6872; 6850; 6861

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes / No

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: Time:

Hold:

Condition:

Sample Receipt Checklist
COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N

If preservation required by Login: Date/Time

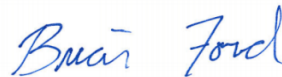
NCF ☒ OK

APEX Companies - Portland, OR

Sample Delivery Group: L998076
Samples Received: 05/31/2018
Project Number: CLARMONT VILLAGE
Description: Claremont Village

Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
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Sr: Sample Results	5	³ Ss
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Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (GC/MS) by Method 8260C	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L998076-01 GW

Collected by
A. Cerruti

Collected date/time
05/29/18 11:15

Received date/time
05/31/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1119748	1	06/04/18 18:17	06/04/18 18:17	RAS

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCOUNT:

APEX Companies - Portland, OR

PROJECT:

CLARMONT VILLAGE

SDG:

L998076

DATE/TIME:

06/07/18 14:50

PAGE:

3 of 9



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	U		0.188	0.500	1	06/04/2018 18:17	WG1119748
cis-1,2-Dichloroethene	U		0.0933	0.500	1	06/04/2018 18:17	WG1119748
trans-1,2-Dichloroethene	U		0.152	0.500	1	06/04/2018 18:17	WG1119748
Tetrachloroethene	U		0.199	0.500	1	06/04/2018 18:17	WG1119748
Trichloroethene	U		0.153	0.500	1	06/04/2018 18:17	WG1119748
Vinyl chloride	U		0.118	0.500	1	06/04/2018 18:17	WG1119748
(S) Toluene-d8	101			80.0-120		06/04/2018 18:17	WG1119748
(S) Dibromofluoromethane	101			76.0-123		06/04/2018 18:17	WG1119748
(S) 4-Bromofluorobenzene	95.4			80.0-120		06/04/2018 18:17	WG1119748

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3316139-3 06/04/18 17:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	102			80.0-120
(S) Dibromofluoromethane	99.5			76.0-123
(S) 4-Bromofluorobenzene	95.7			80.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3316139-1 06/04/18 15:30 • (LCSD) R3316139-2 06/04/18 16:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	25.0	25.2	24.0	101	95.8	64.0-129			5.20	20
cis-1,2-Dichloroethene	25.0	24.1	22.9	96.2	91.7	73.0-120			4.85	20
trans-1,2-Dichloroethene	25.0	25.3	23.6	101	94.4	71.0-121			6.97	20
Tetrachloroethene	25.0	26.4	24.4	105	97.8	70.0-127			7.51	20
Trichloroethene	25.0	24.8	23.3	99.2	93.2	78.0-120			6.19	20
Vinyl chloride	25.0	23.0	21.3	92.2	85.1	64.0-133			7.99	20
(S) Toluene-d8				103	102	80.0-120				
(S) Dibromofluoromethane				97.3	98.1	76.0-123				
(S) 4-Bromofluorobenzene				97.7	95.8	80.0-120				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

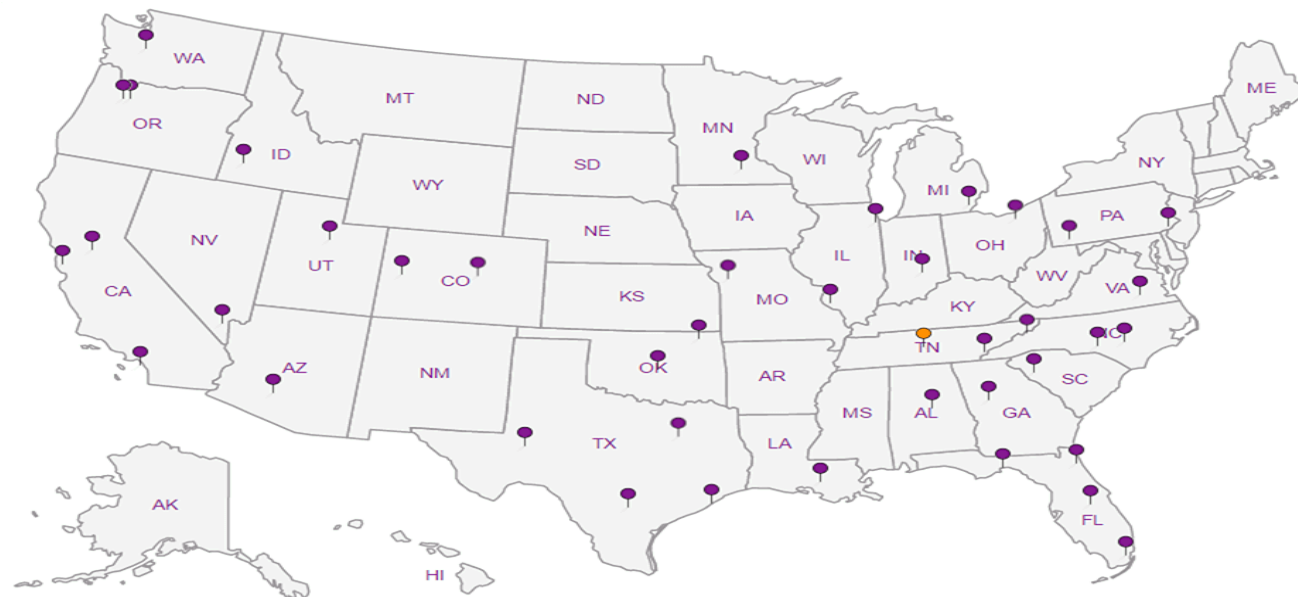
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EPA–Crypto	TN00003		

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APEX Companies - Portland, OR

Two Union Square
Suite 4200

Seattle WA 98101

Report to:
Anthony Cerruti JIE XU.

Project
Description: CLAREMONT VILLAGE

Phone: 503-924-4704
Fax: 503-943-6357

Collected by (print):

A. CERRUTI

Collected by (signature):

Immediately
Packed on Ice: N Y

Billing Information:

Accounts Payable
3015 SW First Ave.
Portland, OR 97201-4707

Email To: anthony.cerruti@apexcos.com

JIE XU@APEXCOS.COM

City/State
Collected:

Lab Project #
ASHCREPOR-CERRUTI

P.O. #

Quote #

Date Results Needed

No.
of
Cntrs

Analysis / Container / Preservative

Pres
Chk

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 1998076
1171

Acctnum: ASHCREPOR

Template: T133745

Prelogin: P643925

TSR: 110 - Brian Ford

PB:

Shipped Via:

Remarks Sample # (lab only)

-01

Invoice:
Customer: ESCPOR
Phone: (615) 758-5858
SAT Del: N
Weight: 10 LBS
COD: DV
Date: 02 Jun 18

Spec: STANDARD OVERNIGHT
TRCN: 6777 0000 4024

Shipping:
Special:
Handling:
Total: 0.00
0.00
0.00
0.00

pH

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headpace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time

Hold:

Condition:
NCF / OK

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

UPS FedEx Courier

Tracking #

6777 0000 4024

Relinquished by: (Signature)

Date:

5/29/18

Time:

Received by: (Signature)

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:

3.0 °C

300

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

Time:

5/30/18

0845

Hold:

Condition:
NCF / OK

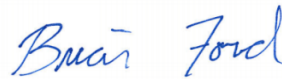
V8260LLC VOCs 40ml Amb-HCI

July 17, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L1009118
Samples Received: 07/13/2018
Project Number:
Description: Claremont Village
Site: CLAREMONT VILLAGE
Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

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Cp: Cover Page	1
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PRE-TREATMENT AIR L1009118-02	6
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Volatile Organic Compounds (MS) by Method TO-15	8
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Al: Accreditations & Locations	10
Sc: Sample Chain of Custody	11





DISCHARGE AIR L1009118-01 Air

Collected by
Jie XuCollected date/time
07/12/18 13:25Received date/time
07/13/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1138914	1	07/17/18 10:23	07/17/18 10:23	MEL
Volatile Organic Compounds (MS) by Method TO-15	WG1137547	2	07/13/18 22:17	07/13/18 22:17	AMC

¹Cp²Tc³Ss

PRE-TREATMENT AIR L1009118-02 Air

Collected by
Jie XuCollected date/time
07/12/18 14:10Received date/time
07/13/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1138914	1	07/17/18 10:26	07/17/18 10:26	MEL
Volatile Organic Compounds (MS) by Method TO-15	WG1137547	2	07/13/18 22:59	07/13/18 22:59	AMC

⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Helium	7440-59-7		0.100	ND		1	WG1138914

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1137547
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1137547
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1137547
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1137547
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1137547
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1137547
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.7				WG1137547

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Helium	7440-59-7		0.100	ND		1	WG1138914

¹Cp

²Tc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1137547
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1137547
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1137547
Tetrachloroethylene	127-18-4	166	0.400	2.72	4.89	33.2		2	WG1137547
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1137547
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1137547
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1137547

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3326114-3 07/17/18 10:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Helium	U		0.0259	0.100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326114-1 07/17/18 10:01 • (LCSD) R3326114-2 07/17/18 10:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	%	%	%	%	%	%			%	%
Helium	2.50	2.77	2.74	111	109	70.0-130			1.17	25

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3325491-3 07/13/18 12:00

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
Tetrachloroethylene	U		0.0497	0.200
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	99.3			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3325491-1 07/13/18 10:38 • (LCSD) R3325491-2 07/13/18 11:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.75	3.69	99.9	98.5	70.0-130			1.43	25
1,1-Dichloroethene	3.75	3.80	3.80	101	101	70.0-130			0.00613	25
trans-1,2-Dichloroethene	3.75	3.85	3.87	103	103	70.0-130			0.620	25
cis-1,2-Dichloroethene	3.75	3.87	3.88	103	104	70.0-130			0.313	25
Trichloroethylene	3.75	3.85	3.89	103	104	70.0-130			1.20	25
Tetrachloroethylene	3.75	4.00	4.03	107	107	70.0-130			0.842	25
(S) 1,4-Bromofluorobenzene				102	102	60.0-140				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

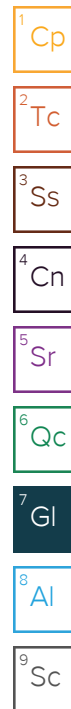
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
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Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.





Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

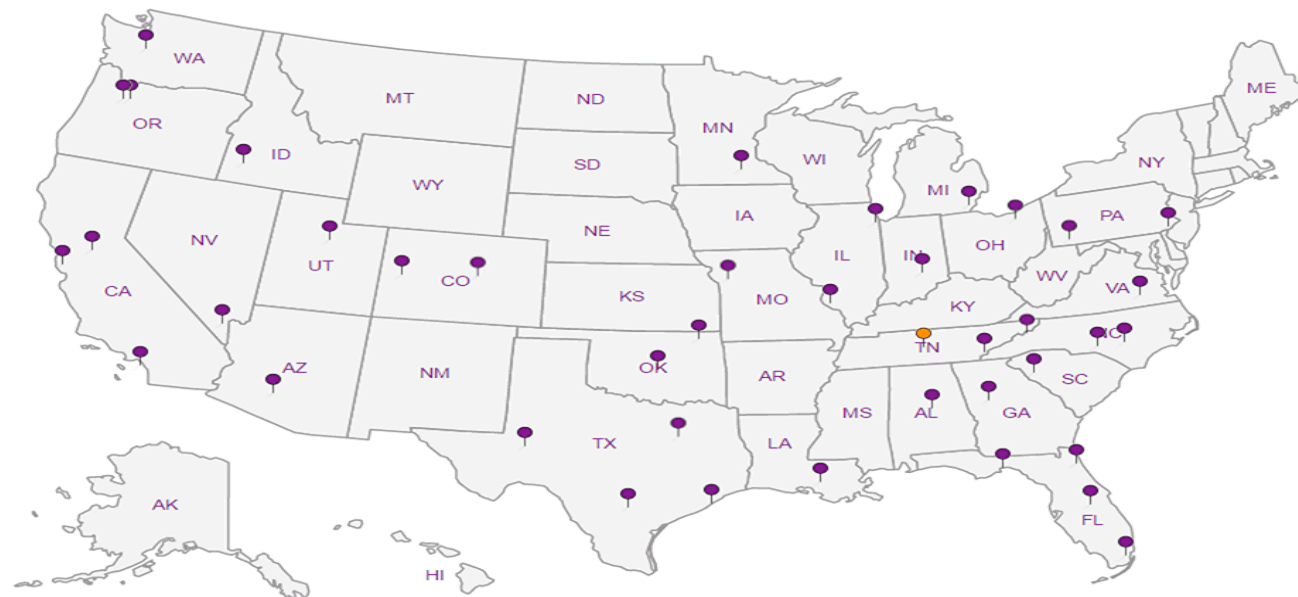
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



APEX Companies - Portland, OR

Two Union Square
Suite 4200
Seattle WA 98101

Report to:
Jie Xu

Billing Information:

Accounts Payable- Cindi Joy Staller
3015 SW First Avenue
Portland, OR 97201-4707

Email To: jie.xu@apexcos.com

Project *Claremont Village*
Description:

Phone: 503-924-4704
Fax: 503-943-6357

Collected by (print):

Jie Xu

Collected by (signature):

Jie Xu

Immediately
Packed on Ice N ☐ Y ☒

City/State
Collected:

Everett, WA

Lab Project #

ASHCREPOR-PECO

P.O. #

Quote #

Date Results Needed

No.
of
Cntrs

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# *1609118*

Tab

M158

Acctnum: ASHCREPOR

Template: T135810

Prelogin: P652431

TSR: 110 - Brian Ford

PB:

Shipped Via:

Remarks

Sample # (lab only)

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Helium Summa

TO-15 Summa

~~Can #9068~~

~~G~~

~~Air~~

Discharge Air

G

Air

—

7/14/18

1325

1

✓

✓

Pre-Treatment Air

G

Air

—

7/12/18

1410

1

✓

✓

01
02

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: (2) 6 Liter summas, (2) 200cc/min manifolds, (2) tubing and fittings

Samples returned via:

UPS ☒ FedEx ☐ Courier ☐

Tracking # *9381 59320832*

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VGA Zero Headpace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N

Relinquished by: (Signature)

Jie Xu

Date:

7/12/18

Time:

1500

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: *Ant* °C *2*
Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: *7/13/18* Time: *0845*

Hold:

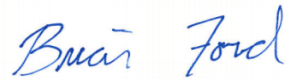
Condition
NCF / *08*

August 15, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L1016473
Samples Received: 08/10/2018
Project Number: PECO_2018_01
Description: Claremont Village PECO_2018_01
Site: CLAREMONT VILLAGE
Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
EFFLUENT AIR L1016473-01	5	
INFLUENT AIR L1016473-02	6	⁴ Cn
Qc: Quality Control Summary	7	⁵ Sr
Volatile Organic Compounds (GC) by Method ASTM 1946	7	
Volatile Organic Compounds (MS) by Method TO-15	8	⁶ Qc
Gl: Glossary of Terms	9	⁷ Gl
Al: Accreditations & Locations	10	⁸ Al
Sc: Sample Chain of Custody	11	⁹ Sc



EFFLUENT AIR L1016473-01 Air

Collected by
Jie XuCollected date/time
08/09/18 10:08Received date/time
08/10/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1149796	1	08/13/18 10:12	08/13/18 10:12	MEL
Volatile Organic Compounds (MS) by Method TO-15	WG1151533	1	08/14/18 02:00	08/14/18 02:00	AMC

¹ Cp² Tc³ Ss

INFLUENT AIR L1016473-02 Air

Collected by
Jie XuCollected date/time
08/09/18 10:35Received date/time
08/10/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1149796	1	08/13/18 10:29	08/13/18 10:29	MEL
Volatile Organic Compounds (MS) by Method TO-15	WG1151533	1	08/14/18 02:57	08/14/18 02:57	AMC

⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL %	Result %	Qualifier	Dilution	Batch
Helium	7440-59-7		0.100	ND		1	WG1149796

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1151533
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1151533
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1151533
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.299	2.03		1	WG1151533
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1151533
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1151533
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.2				WG1151533

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Helium	7440-59-7		0.100	ND		1	WG1149796

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1151533
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1151533
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1151533
Tetrachloroethylene	127-18-4	166	0.200	1.36	12.4	84.0		1	WG1151533
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1151533
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1151533
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.6				WG1151533

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3333043-3 08/13/18 08:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Helium	U		0.0259	0.100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3333043-1 08/13/18 08:08 • (LCSD) R3333043-2 08/13/18 08:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	%	%	%	%	%	%			%	%
Helium	2.50	2.37	2.72	94.7	109	70.0-130			13.7	25

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3333294-3 08/13/18 10:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
Tetrachloroethylene	U		0.0497	0.200
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	87.9			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3333294-1 08/13/18 08:54 • (LCSD) R3333294-2 08/13/18 09:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Vinyl chloride	3.75	3.90	3.89	104	104	70.0-130			0.332	25
1,1-Dichloroethene	3.75	3.83	3.83	102	102	70.0-130			0.0607	25
trans-1,2-Dichloroethene	3.75	3.90	3.82	104	102	70.0-130			1.95	25
cis-1,2-Dichloroethene	3.75	3.99	4.05	106	108	70.0-130			1.48	25
Trichloroethylene	3.75	3.88	3.83	104	102	70.0-130			1.24	25
Tetrachloroethylene	3.75	3.82	3.80	102	101	70.0-130			0.430	25
(S) 1,4-Bromofluorobenzene				100	100	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



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Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

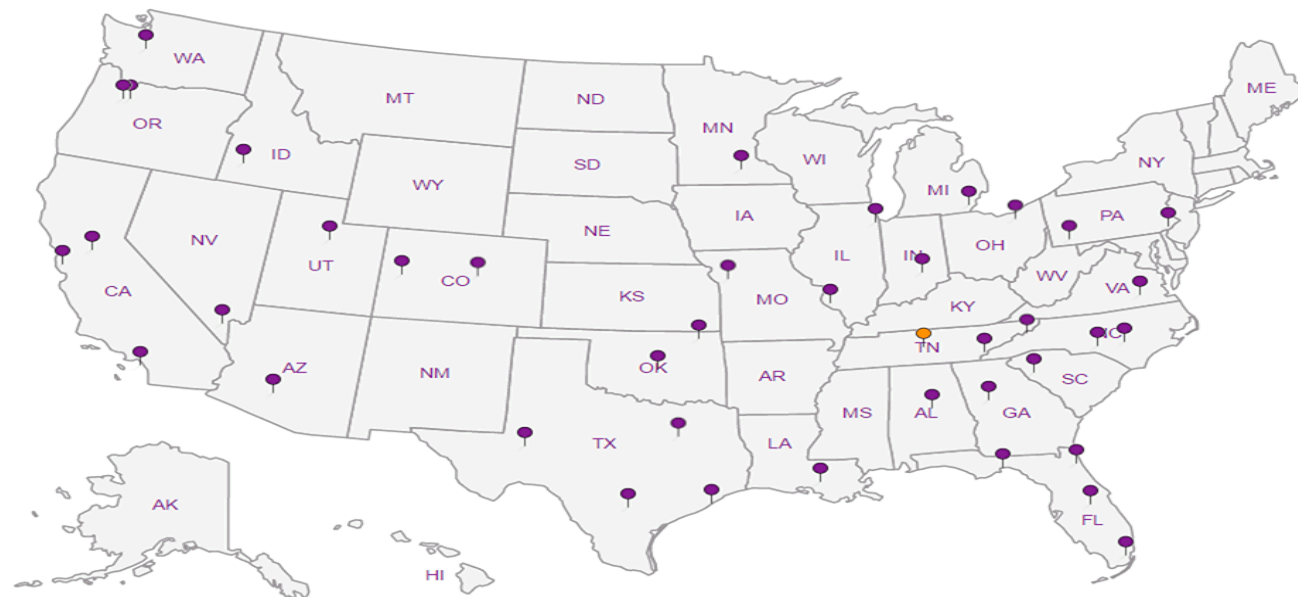
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



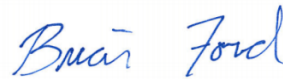
September 17, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L1025623
Samples Received: 09/13/2018
Project Number: PECO_2018_01 TASK002
Description: Claremont Village

Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
MW-1 L1025623-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (GC/MS) by Method 8260C	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L1025623-01 GW

Collected by
Jake Munsey

Collected date/time
09/10/18 15:09

Received date/time
09/13/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1166389	1	09/14/18 19:28	09/14/18 19:28	BMB

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

APEX Companies - Portland, OR

PROJECT:

PECO_2018_01 TASK002

SDG:

L1025623

DATE/TIME:

09/17/18 16:47

PAGE:

3 of 9



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	U		0.188	0.500	1	09/14/2018 19:28	WG1166389
cis-1,2-Dichloroethene	U		0.0933	0.500	1	09/14/2018 19:28	WG1166389
trans-1,2-Dichloroethene	U		0.152	0.500	1	09/14/2018 19:28	WG1166389
Tetrachloroethene	U		0.199	0.500	1	09/14/2018 19:28	WG1166389
Trichloroethene	U		0.153	0.500	1	09/14/2018 19:28	WG1166389
Vinyl chloride	U		0.118	0.500	1	09/14/2018 19:28	WG1166389
(S) Toluene-d8	100			80.0-120		09/14/2018 19:28	WG1166389
(S) Dibromofluoromethane	104			75.0-120		09/14/2018 19:28	WG1166389
(S) 4-Bromofluorobenzene	88.4			77.0-126		09/14/2018 19:28	WG1166389

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3342279-2 09/14/18 13:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	100			80.0-120
(S) Dibromofluoromethane	102			75.0-120
(S) 4-Bromofluorobenzene	90.6			77.0-126

Laboratory Control Sample (LCS)

(LCS) R3342279-1 09/14/18 12:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,1-Dichloroethene	25.0	20.8	83.3	71.0-124	
cis-1,2-Dichloroethene	25.0	21.9	87.6	73.0-120	
trans-1,2-Dichloroethene	25.0	23.1	92.4	73.0-120	
Tetrachloroethene	25.0	25.9	104	72.0-132	
Trichloroethene	25.0	23.8	95.3	78.0-124	
Vinyl chloride	25.0	22.6	90.5	67.0-131	
(S) Toluene-d8			103	80.0-120	
(S) Dibromofluoromethane			101	75.0-120	
(S) 4-Bromofluorobenzene			93.0	77.0-126	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

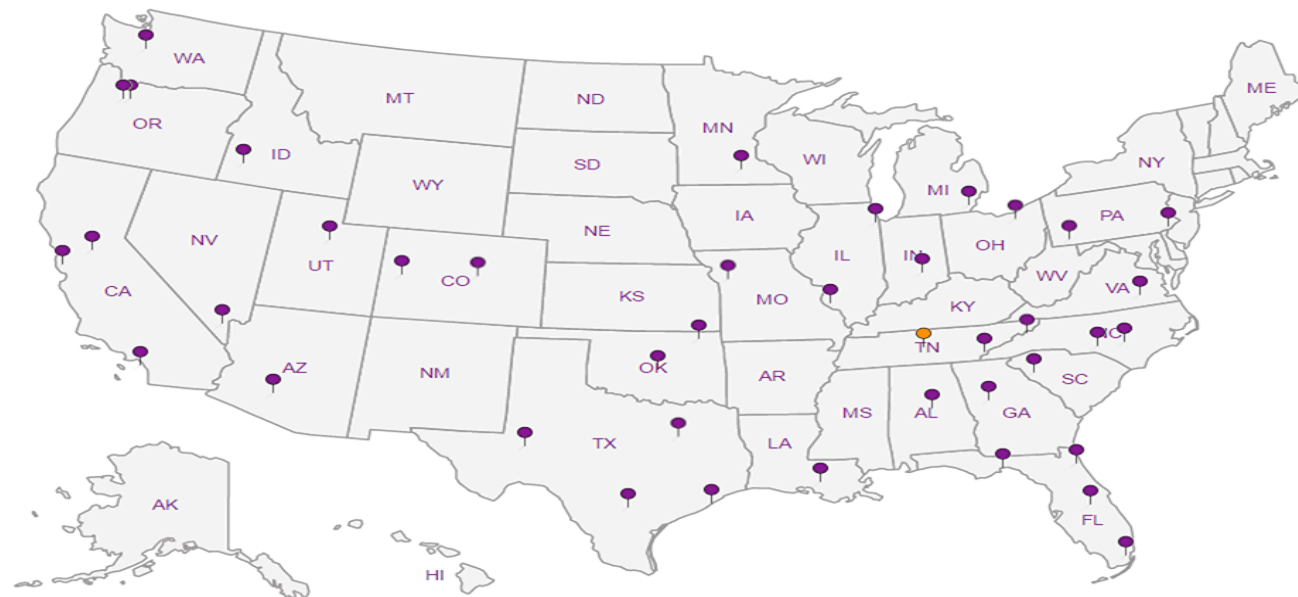
Third Party Federal Accreditations

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A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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APEX Companies - Portland, OR

Two Union Square
Suite 4200
Seattle WA 98101

Report to:
Jie Xu

Billing Information:

Accounts Payable
3015 SW First Ave.
Portland, OR 97201-4707

Email To: jie.xu@apexcos.com

Project
Description: *Claremont Village*

City/State
Collected: *Everett WA*

Phone: 503-924-4704
Fax: 503-943-6357

Client Project #
PECO-2018-01 Task 002

Lab Project #
ASHCREPOR-XU

Collected by (print):
Jake Munson

Site/Facility ID #

P.O. #

Collected by (signature):
Jake Munson

Rush? (Lab MUST Be Notified)

Quote #

Immediately:
Packed on Ice N ☐ Y ☒

Same Day ☐ Five Day ☐
Next Day ☐ 5 Day (Rad Only) ☐
Two Day ☐ 10 Day (Rad Only) ☐
Three Day ☐

Date Results Needed

No
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No of Cntrs
<i>MW-1</i>	<i>Grab</i>	<i>GW</i>	<i>66'</i>	<i>9/10/18</i>	<i>1509</i>	<i>3</i>
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				
		<i>GW</i>				

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
☐ UPS ☒ FedEx ☐ Courier

Tracking # *4301 6936 1074*

Relinquished by: (Signature)

Date: *9/11/2018* Time: *1600*

Received by: (Signature)

Trip Blank Received: Yes (No) ☒
HCL / MeOH
TBR

Relinquished by: (Signature)

Date: Time:

Received by: (Signature)

Temp: *4.2°C* Bottles Received: *3*

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)

Date: *9/13/18* Time: *8:45*

Sample Receipt Checklist:
COC Seal Present/Intact: ☒ NP Y N
COC Signed/Accurate: ☒ Y N
Bottles arrive intact: ☒ Y N
Correct bottles used: ☒ Y N
Sufficient volume sent: ☒ Y N
If Applicable
VOA Zero Headspace: ☒ Y N
Preservation Correct/Checked: ☒ Y N

If preservation required by Login: Date/Time

Hold:

Condition
NCF *OK*

Analysis / Container / Preservative

Chain of Custody Page *1* of *1*



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# *L1025623*
D079

Acctnum: ASHCREPOR

Template: T136408

Prelogin: P654383

TSR: 110 - Brian Ford

PB:

Shipped Via:

Remarks Sample # (lab only)

-01

September 25, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L1026976
Samples Received: 09/19/2018
Project Number: PECO_2018-01 TASK002
Description: Claremont Village

Report To: Jie Xu
Two Union Square
Suite 4200
Seattle, WA 98101

Entire Report Reviewed By:



Jason Romer
Project Manager

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
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Sr: Sample Results	5	³ Ss
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INFLUENT L1026976-02	7	⁴ Cn
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Volatile Organic Compounds (MS) by Method TO-15	9	
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Al: Accreditations & Locations	14	⁷ Gl
Sc: Sample Chain of Custody	15	⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



EFFLUENT L1026976-01 Air

Collected by
Jake Munsey

Collected date/time
09/13/18 11:13

Received date/time
09/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1170592	1	09/24/18 19:51	09/24/18 19:51	AMC

¹Cp

²Tc

³Ss

INFLUENT L1026976-02 Air

Collected by
Jake Munsey

Collected date/time
09/13/18 11:52

Received date/time
09/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1170592	1	09/24/18 20:37	09/24/18 20:37	AMC

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

APEX Companies - Portland, OR

PROJECT:

PECO_2018-01 TASK002

SDG:

L1026976

DATE/TIME:

09/25/18 17:01

PAGE:

3 of 16



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

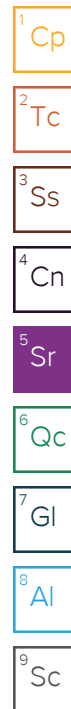
⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	3.21	7.63		1	WG1170592
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1170592
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1170592
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1170592
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1170592
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1170592
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1170592
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1170592
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.309	0.963		1	WG1170592
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1170592
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1170592
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1170592
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1170592
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1170592
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1170592
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1170592
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1170592
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1170592
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1170592
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1170592
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1170592
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1170592
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1170592
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1170592
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1170592
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1170592
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1170592
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1170592
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1170592
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1170592
Ethanol	64-17-5	46.10	0.630	1.19	12.0	22.6		1	WG1170592
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1170592
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1170592
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.340	1.91		1	WG1170592
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	22.4	111		1	WG1170592
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1170592
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1170592
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1170592
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1170592
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1170592
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1170592
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.259	0.899	<u>B</u>	1	WG1170592
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1170592
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	1.51	4.45		1	WG1170592
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1170592
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1170592
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1170592
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1170592
2-Propanol	67-63-0	60.10	1.25	3.07	2.19	5.38		1	WG1170592
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1170592
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1170592
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1170592
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1170592
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	6.74	19.9		1	WG1170592
Toluene	108-88-3	92.10	0.200	0.753	0.227	0.854		1	WG1170592
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1170592



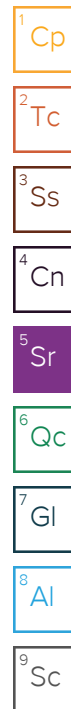


Collected date/time: 09/13/18 11:13

L1026976

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1170592
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1170592
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1170592
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1170592
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1170592
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1170592
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1170592
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1170592
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1170592
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1170592
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1170592
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		92.5				WG1170592





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.97	21.3		1	WG1170592
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1170592
Benzene	71-43-2	78.10	0.200	0.639	1.50	4.80		1	WG1170592
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1170592
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1170592
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1170592
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1170592
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1170592
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1170592
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1170592
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1170592
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1170592
Chloroform	67-66-3	119	0.200	0.973	1.76	8.58		1	WG1170592
Chloromethane	74-87-3	50.50	0.200	0.413	0.340	0.703		1	WG1170592
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1170592
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1170592
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1170592
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1170592
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1170592
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1170592
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	0.798	4.80		1	WG1170592
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1170592
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1170592
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1170592
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1170592
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1170592
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1170592
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1170592
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1170592
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1170592
Ethanol	64-17-5	46.10	0.630	1.19	18.7	35.3		1	WG1170592
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1170592
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1170592
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.630	3.54		1	WG1170592
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	12.3	60.9		1	WG1170592
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1170592
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1170592
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1170592
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1170592
n-Hexane	110-54-3	86.20	0.200	0.705	0.232	0.817		1	WG1170592
Isopropylbenzene	98-82-8	120.20	0.200	0.983	2.53	12.4		1	WG1170592
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.368	1.28	<u>B</u>	1	WG1170592
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1170592
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	11.9	35.2		1	WG1170592
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1170592
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1170592
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1170592
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1170592
2-Propanol	67-63-0	60.10	1.25	3.07	2.81	6.91		1	WG1170592
Propene	115-07-1	42.10	0.400	0.689	0.886	1.53		1	WG1170592
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1170592
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1170592
Tetrachloroethylene	127-18-4	166	0.200	1.36	8.71	59.2		1	WG1170592
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	14.3	42.0		1	WG1170592
Toluene	108-88-3	92.10	0.200	0.753	0.808	3.04		1	WG1170592
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1170592

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Collected date/time: 09/13/18 11:52

L1026976

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	1.24	6.76		1	WG1170592
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1170592
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1170592
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.223	1.09		1	WG1170592
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1170592
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1170592
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1170592
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1170592
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1170592
m&p-Xylene	1330-20-7	106	0.400	1.73	0.511	2.22		1	WG1170592
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1170592
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		92.0				WG1170592

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3344688-2 09/24/18 11:17

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	0.0638	U	0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3344688-2 09/24/18 11:17

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0656	⌵	0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	94.2			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3344688-1 09/24/18 10:31 • (LCSD) R3344688-3 09/24/18 12:01

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.73	3.67	99.3	97.9	55.0-148			1.43	25
Propene	3.75	4.77	4.74	127	126	64.0-144			0.578	25
Dichlorodifluoromethane	3.75	4.49	4.39	120	117	64.0-139			2.23	25
1,2-Dichlorotetrafluoroethane	3.75	4.27	4.26	114	114	70.0-130			0.0682	25
Chloromethane	3.75	4.36	4.37	116	116	70.0-130			0.165	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3344688-1 09/24/18 10:31 • (LCSD) R3344688-3 09/24/18 12:01

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Vinyl chloride	3.75	4.33	4.31	115	115	70.0-130			0.450	25
1,3-Butadiene	3.75	4.24	4.23	113	113	70.0-130			0.105	25
Bromomethane	3.75	3.42	3.29	91.2	87.8	70.0-130			3.76	25
Chloroethane	3.75	4.29	4.27	114	114	70.0-130			0.433	25
Trichlorofluoromethane	3.75	4.32	4.27	115	114	70.0-130			1.06	25
1,1,2-Trichlorotrifluoroethane	3.75	4.35	4.30	116	115	70.0-130			1.21	25
1,1-Dichloroethene	3.75	4.26	4.24	113	113	70.0-130			0.296	25
1,1-Dichloroethane	3.75	4.22	4.15	113	111	70.0-130			1.65	25
Acetone	3.75	4.30	4.23	115	113	70.0-130			1.56	25
2-Propanol	3.75	4.30	4.21	115	112	70.0-139			2.11	25
Carbon disulfide	3.75	4.15	4.15	111	111	70.0-130			0.156	25
Methylene Chloride	3.75	3.99	3.92	106	105	70.0-130			1.66	25
MTBE	3.75	4.21	4.17	112	111	70.0-130			0.886	25
trans-1,2-Dichloroethene	3.75	4.25	4.18	113	112	70.0-130			1.52	25
n-Hexane	3.75	4.19	4.13	112	110	70.0-130			1.39	25
Vinyl acetate	3.75	4.25	4.15	113	111	70.0-130			2.37	25
Methyl Ethyl Ketone	3.75	4.29	4.25	114	113	70.0-130			0.964	25
cis-1,2-Dichloroethene	3.75	4.25	4.19	113	112	70.0-130			1.42	25
Chloroform	3.75	4.20	4.12	112	110	70.0-130			1.94	25
Cyclohexane	3.75	4.29	4.21	114	112	70.0-130			1.82	25
1,1,1-Trichloroethane	3.75	4.26	4.18	113	111	70.0-130			1.83	25
Carbon tetrachloride	3.75	4.22	4.15	113	111	70.0-130			1.81	25
Benzene	3.75	4.21	4.14	112	110	70.0-130			1.75	25
1,2-Dichloroethane	3.75	4.27	4.18	114	111	70.0-130			2.35	25
Heptane	3.75	4.33	4.28	116	114	70.0-130			1.29	25
Trichloroethylene	3.75	4.22	4.17	113	111	70.0-130			1.20	25
1,2-Dichloropropane	3.75	4.23	4.16	113	111	70.0-130			1.61	25
1,4-Dioxane	3.75	4.16	4.18	111	112	70.0-140			0.653	25
Bromodichloromethane	3.75	4.25	4.17	113	111	70.0-130			1.80	25
cis-1,3-Dichloropropene	3.75	4.38	4.29	117	114	70.0-130			2.19	25
4-Methyl-2-pentanone (MIBK)	3.75	4.53	4.44	121	118	70.0-139			2.09	25
Toluene	3.75	4.30	4.22	115	113	70.0-130			1.70	25
trans-1,3-Dichloropropene	3.75	4.47	4.38	119	117	70.0-130			2.16	25
1,1,2-Trichloroethane	3.75	4.22	4.16	112	111	70.0-130			1.37	25
Tetrachloroethylene	3.75	4.23	4.16	113	111	70.0-130			1.62	25
Methyl Butyl Ketone	3.75	4.68	4.60	125	123	70.0-149			1.83	25
Dibromochloromethane	3.75	4.27	4.22	114	113	70.0-130			1.20	25
1,2-Dibromoethane	3.75	4.33	4.25	115	113	70.0-130			1.80	25
Chlorobenzene	3.75	4.30	4.25	115	113	70.0-130			1.11	25
Ethylbenzene	3.75	4.26	4.19	114	112	70.0-130			1.77	25

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3344688-1 09/24/18 10:31 • (LCSD) R3344688-3 09/24/18 12:01

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	8.56	8.41	114	112	70.0-130			1.77	25
o-Xylene	3.75	4.31	4.21	115	112	70.0-130			2.29	25
Styrene	3.75	4.41	4.31	118	115	70.0-130			2.23	25
Bromoform	3.75	4.29	4.21	114	112	70.0-130			1.91	25
1,1,2,2-Tetrachloroethane	3.75	4.21	4.13	112	110	70.0-130			1.80	25
4-Ethyltoluene	3.75	4.39	4.30	117	115	70.0-130			2.02	25
1,3,5-Trimethylbenzene	3.75	4.43	4.34	118	116	70.0-130			1.96	25
1,2,4-Trimethylbenzene	3.75	4.43	4.33	118	116	70.0-130			2.25	25
1,3-Dichlorobenzene	3.75	4.37	4.29	116	114	70.0-130			1.73	25
1,4-Dichlorobenzene	3.75	4.49	4.41	120	118	70.0-130			1.83	25
Benzyl Chloride	3.75	4.51	4.42	120	118	70.0-152			2.12	25
1,2-Dichlorobenzene	3.75	4.29	4.21	114	112	70.0-130			1.71	25
1,2,4-Trichlorobenzene	3.75	4.66	4.01	124	107	70.0-160			14.9	25
Hexachloro-1,3-butadiene	3.75	4.48	3.79	120	101	70.0-151			16.6	25
Naphthalene	3.75	4.89	4.02	130	107	70.0-159			19.4	25
Allyl Chloride	3.75	4.26	4.20	114	112	70.0-130			1.43	25
2-Chlorotoluene	3.75	4.38	4.29	117	114	70.0-130			2.05	25
Methyl Methacrylate	3.75	4.40	4.32	117	115	70.0-130			1.82	25
Tetrahydrofuran	3.75	4.24	4.19	113	112	70.0-137			1.39	25
2,2,4-Trimethylpentane	3.75	4.31	4.25	115	113	70.0-130			1.37	25
Vinyl Bromide	3.75	4.24	4.18	113	112	70.0-130			1.32	25
Isopropylbenzene	3.75	4.33	4.17	116	111	70.0-130			3.93	25
(S) 1,4-Bromofluorobenzene				97.6	96.9	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

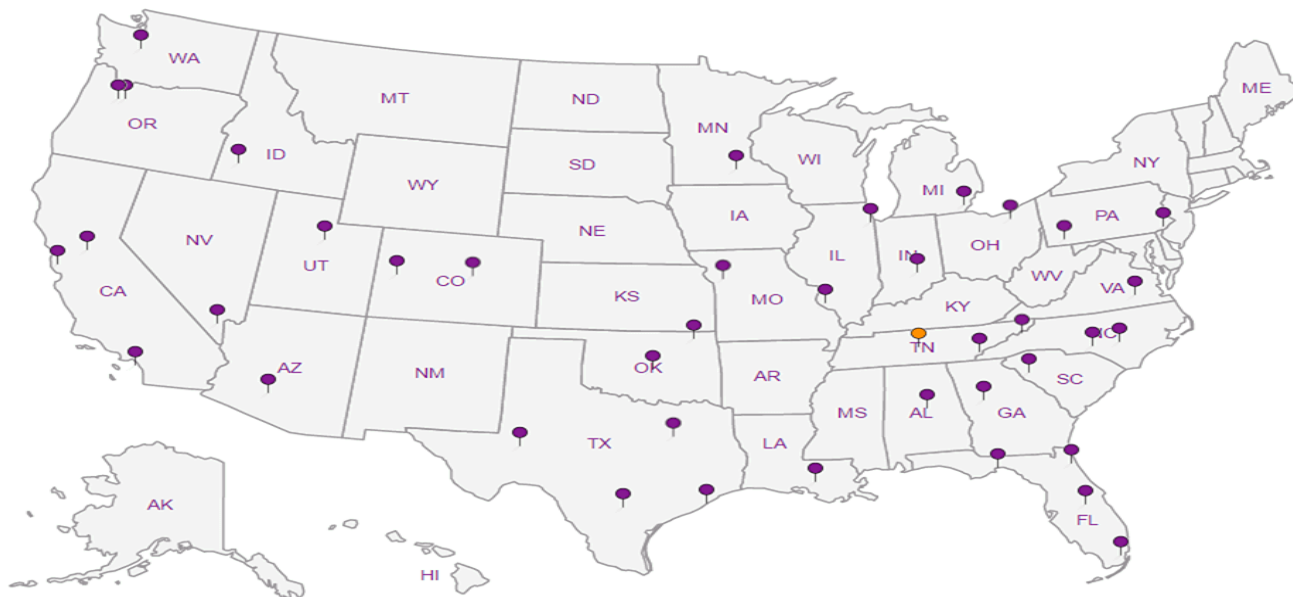
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Pace Analytical National Center for Testing & Innovation

Cooler Receipt Form

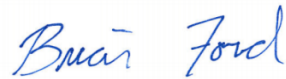
Client: <u>ASIGRATOR</u>	SDG#	L1026976	
Cooler Received/Opened On: 09/ 19 /18	Temperature:	Amb	
Received By: Eric Struck			
Signature: <u>Eric Struck</u>			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?			
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

December 12, 2018

APEX Companies - Portland, OR

Sample Delivery Group: L1050375
Samples Received: 12/06/2018
Project Number: PECO.2018.01
Description: Claremont
Site: CLAREMONT
Report To: Jie Xu
600 Stewart Street
Suite 400
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
INFLUENT L1050375-01	5	
EFFLUENT L1050375-02	7	⁴ Cn
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Gl: Glossary of Terms	13	⁶ Qc
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Sc: Sample Chain of Custody	15	⁸ Al
		⁹ Sc



INFLUENT L1050375-01 Air

			Collected by Jie Xu	Collected date/time 12/04/18 11:18	Received date/time 12/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1208375	2	12/11/18 02:45	12/11/18 02:45	MBF

EFFLUENT L1050375-02 Air

			Collected by Jie Xu	Collected date/time 12/04/18 11:30	Received date/time 12/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1208375	2	12/11/18 03:28	12/11/18 03:28	MBF

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

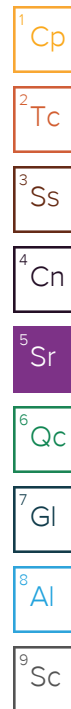
Brian Ford
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	6.86	16.3		2	WG1208375
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1208375
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1208375
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1208375
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1208375
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1208375
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1208375
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1208375
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1208375
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1208375
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1208375
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1208375
Chloroform	67-66-3	119	0.400	1.95	2.76	13.4		2	WG1208375
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1208375
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1208375
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1208375
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1208375
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1208375
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1208375
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1208375
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1208375
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1208375
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1208375
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1208375
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1208375
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1208375
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1208375
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1208375
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1208375
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1208375
Ethanol	64-17-5	46.10	1.26	2.38	2.69	5.07		2	WG1208375
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1208375
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1208375
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.739	4.15		2	WG1208375
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	17.8	88.1		2	WG1208375
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1208375
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1208375
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1208375
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1208375
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1208375
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1208375
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1208375
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1208375
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	3.12	9.21		2	WG1208375
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1208375
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1208375
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1208375
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1208375
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1208375
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1208375
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1208375
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1208375
Tetrachloroethylene	127-18-4	166	0.400	2.72	5.01	34.0		2	WG1208375
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	1.94	5.72		2	WG1208375
Toluene	108-88-3	92.10	0.400	1.51	0.789	2.97		2	WG1208375
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1208375





Collected date/time: 12/04/18 11:18

L1050375

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	1.90	10.4		2	WG1208375
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1208375
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1208375
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1208375
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1208375
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1208375
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1208375
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1208375
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1208375
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1208375
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1208375
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.8				WG1208375

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	ND	ND		2	WG1208375
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1208375
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1208375
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1208375
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1208375
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1208375
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1208375
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1208375
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1208375
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1208375
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1208375
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1208375
Chloroform	67-66-3	119	0.400	1.95	0.438	2.13		2	WG1208375
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1208375
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1208375
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1208375
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1208375
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1208375
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1208375
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1208375
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1208375
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1208375
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1208375
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1208375
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1208375
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1208375
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1208375
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1208375
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1208375
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1208375
Ethanol	64-17-5	46.10	1.26	2.38	2.60	4.91		2	WG1208375
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1208375
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1208375
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.714	4.01		2	WG1208375
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	15.5	76.9		2	WG1208375
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1208375
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1208375
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1208375
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1208375
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1208375
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1208375
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1208375
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1208375
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1208375
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1208375
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1208375
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1208375
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1208375
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1208375
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1208375
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1208375
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1208375
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1208375
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	1.40	4.14		2	WG1208375
Toluene	108-88-3	92.10	0.400	1.51	0.490	1.85		2	WG1208375
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1208375

1 Cp

2 Tc

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5 Sr

6 Qc

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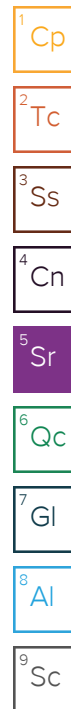
8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1208375
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1208375
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1208375
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1208375
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1208375
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1208375
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1208375
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1208375
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1208375
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1208375
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1208375
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.6				WG1208375



Method Blank (MB)

(MB) R3366826-1 12/10/18 10:10

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	0.0615	U	0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	0.0609	U	0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Sc

Method Blank (MB)

(MB) R3366826-1 12/10/18 10:10

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	0.185	U	0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	96.2			60.0-140

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Cp

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Tc

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Qc

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3366826-2 12/10/18 10:53 • (LCSD) R3366826-3 12/10/18 13:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.06	3.90	108	104	55.0-148			4.17	25
Propene	3.75	4.19	4.93	112	131	64.0-144			16.1	25
Dichlorodifluoromethane	3.75	3.93	3.62	105	96.6	64.0-139			8.11	25
1,2-Dichlorotetrafluoroethane	3.75	4.17	3.40	111	90.7	70.0-130			20.3	25
Chloromethane	3.75	4.21	4.19	112	112	70.0-130			0.560	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3366826-2 12/10/18 10:53 • (LCSD) R3366826-3 12/10/18 13:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Vinyl chloride	3.75	4.27	4.24	114	113	70.0-130			0.729	25
1,3-Butadiene	3.75	4.55	4.63	121	123	70.0-130			1.63	25
Bromomethane	3.75	4.11	4.05	110	108	70.0-130			1.40	25
Chloroethane	3.75	4.13	4.15	110	111	70.0-130			0.472	25
Trichlorofluoromethane	3.75	4.16	4.11	111	110	70.0-130			1.13	25
1,1,2-Trichlorotrifluoroethane	3.75	4.07	4.01	108	107	70.0-130			1.40	25
1,1-Dichloroethene	3.75	4.22	4.21	113	112	70.0-130			0.227	25
1,1-Dichloroethane	3.75	4.14	4.08	110	109	70.0-130			1.46	25
Acetone	3.75	4.51	4.45	120	119	70.0-130			1.38	25
2-Propanol	3.75	4.53	4.57	121	122	70.0-139			0.825	25
Carbon disulfide	3.75	4.02	4.02	107	107	70.0-130			0.0441	25
Methylene Chloride	3.75	4.05	4.06	108	108	70.0-130			0.153	25
MTBE	3.75	4.02	4.00	107	107	70.0-130			0.543	25
trans-1,2-Dichloroethene	3.75	4.20	4.15	112	111	70.0-130			1.27	25
n-Hexane	3.75	4.05	3.98	108	106	70.0-130			1.76	25
Vinyl acetate	3.75	4.43	4.36	118	116	70.0-130			1.65	25
Methyl Ethyl Ketone	3.75	4.20	4.31	112	115	70.0-130			2.38	25
cis-1,2-Dichloroethene	3.75	4.23	4.16	113	111	70.0-130			1.62	25
Chloroform	3.75	4.03	4.04	108	108	70.0-130			0.202	25
Cyclohexane	3.75	3.93	3.94	105	105	70.0-130			0.258	25
1,1,1-Trichloroethane	3.75	4.02	4.03	107	107	70.0-130			0.116	25
Carbon tetrachloride	3.75	4.10	4.02	109	107	70.0-130			1.87	25
Benzene	3.75	3.87	3.88	103	103	70.0-130			0.279	25
1,2-Dichloroethane	3.75	4.20	4.21	112	112	70.0-130			0.116	25
Heptane	3.75	4.09	4.12	109	110	70.0-130			0.531	25
Trichloroethylene	3.75	3.88	3.88	103	103	70.0-130			0.155	25
1,2-Dichloropropane	3.75	4.02	4.03	107	107	70.0-130			0.197	25
1,4-Dioxane	3.75	3.85	3.92	103	105	70.0-140			1.88	25
Bromodichloromethane	3.75	4.03	4.02	107	107	70.0-130			0.178	25
cis-1,3-Dichloropropene	3.75	4.17	4.06	111	108	70.0-130			2.73	25
4-Methyl-2-pentanone (MIBK)	3.75	4.36	4.34	116	116	70.0-139			0.452	25
Toluene	3.75	3.94	3.88	105	103	70.0-130			1.55	25
trans-1,3-Dichloropropene	3.75	4.48	4.38	119	117	70.0-130			2.14	25
1,1,2-Trichloroethane	3.75	4.06	3.99	108	106	70.0-130			1.73	25
Tetrachloroethylene	3.75	3.72	3.63	99.1	96.7	70.0-130			2.42	25
Methyl Butyl Ketone	3.75	5.00	5.05	133	135	70.0-149			1.06	25
Dibromochloromethane	3.75	4.17	4.12	111	110	70.0-130			1.11	25
1,2-Dibromoethane	3.75	4.24	4.26	113	114	70.0-130			0.568	25
Chlorobenzene	3.75	4.11	4.07	110	109	70.0-130			0.876	25
Ethylbenzene	3.75	4.03	4.15	108	111	70.0-130			2.80	25

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3366826-2 12/10/18 10:53 • (LCSD) R3366826-3 12/10/18 13:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
m&p-Xylene	7.50	8.28	8.57	110	114	70.0-130			3.44	25
o-Xylene	3.75	4.01	4.13	107	110	70.0-130			3.00	25
Styrene	3.75	4.10	4.24	109	113	70.0-130			3.33	25
Bromoform	3.75	3.92	4.02	105	107	70.0-130			2.36	25
1,1,2,2-Tetrachloroethane	3.75	4.13	4.27	110	114	70.0-130			3.40	25
4-Ethyltoluene	3.75	4.20	4.27	112	114	70.0-130			1.51	25
1,3,5-Trimethylbenzene	3.75	3.99	4.15	106	111	70.0-130			3.92	25
1,2,4-Trimethylbenzene	3.75	4.08	4.17	109	111	70.0-130			2.23	25
1,3-Dichlorobenzene	3.75	4.07	4.17	109	111	70.0-130			2.40	25
1,4-Dichlorobenzene	3.75	4.73	4.82	126	129	70.0-130			2.01	25
Benzyl Chloride	3.75	3.53	3.72	94.1	99.3	70.0-152			5.35	25
1,2-Dichlorobenzene	3.75	4.01	4.16	107	111	70.0-130			3.85	25
1,2,4-Trichlorobenzene	3.75	3.26	3.68	86.9	98.2	70.0-160			12.3	25
Hexachloro-1,3-butadiene	3.75	3.88	4.11	103	110	70.0-151			5.75	25
Naphthalene	3.75	4.32	4.94	115	132	70.0-159			13.4	25
Allyl Chloride	3.75	4.01	4.05	107	108	70.0-130			1.08	25
2-Chlorotoluene	3.75	3.85	4.00	103	107	70.0-130			3.95	25
Methyl Methacrylate	3.75	4.41	4.44	118	118	70.0-130			0.657	25
Tetrahydrofuran	3.75	4.32	4.34	115	116	70.0-137			0.319	25
2,2,4-Trimethylpentane	3.75	4.00	4.03	107	107	70.0-130			0.631	25
Vinyl Bromide	3.75	4.04	3.98	108	106	70.0-130			1.57	25
Isopropylbenzene	3.75	3.95	4.04	105	108	70.0-130			2.35	25
(S) 1,4-Bromofluorobenzene				110	111	60.0-140				

¹Cp

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

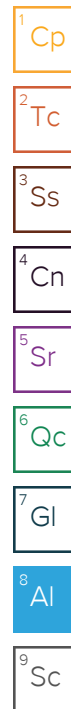
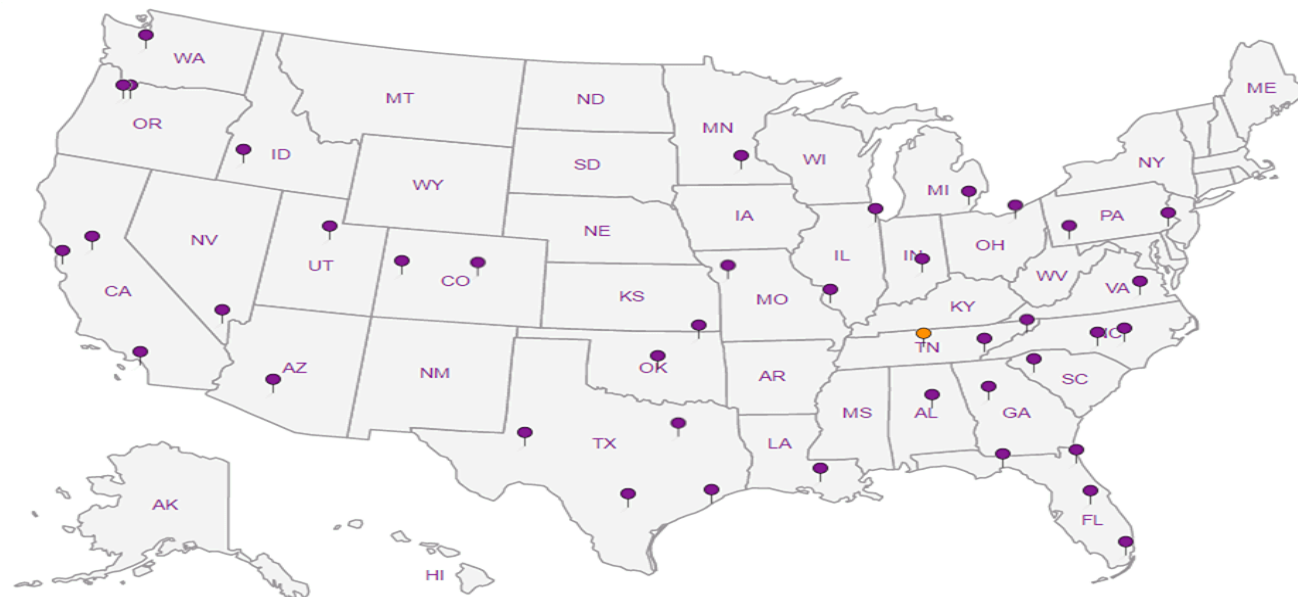
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



APEX Companies - Portland, OR				Billing Information:				Analysis / Container / Preservative				Chain of Custody Page ____ of ____			
600 Stewart Street Suite 400 Seattle WA 98101				Accounts Payable- Cindi Joy Staller 3015 SW First Avenue Portland, OR 97201-4707				Pres Chk							
Report to: Jie Xu				Email To: jie.xu@apexcos.com; jfoxwell@apexcos.com								12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Project: <u>Changmou</u>				City/State: <u>Everett, WA</u>											
Description:				Collected: <u>Jie Xu</u>											
Phone: 503-924-4704		Client Project #		Lab Project #											
Fax: 503-943-6357		<u>PERC-2018-01</u>		ASHCREPOR-PECO											
Collected by (print):		Site/Facility ID #		P.O. #											
<u>Jie Xu</u>		<u>Changmou</u>													
Collected by (signature):		Rush? (Lab MUST Be Notified)		Quote #											
<u>Jie Xu</u>		☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Date Results Needed											
Immediately															
Packed on Ice N ☒ Y ☐															
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Helium Summ	TO-15 Summ	Initial Presump.	Final Presump.				
<u>Influent</u>		<u>C</u>	<u>Air</u>	<u>—</u>	<u>12/4/2018</u>	<u>1118</u>	<u>1</u>	<u>✓</u>	<u>✓</u>	<u>27</u>	<u>4</u>				
<u>Effluent</u>		<u>C</u>	<u>Air</u>	<u>—</u>	<u>12/4/2018</u>	<u>1300</u>	<u>1</u>	<u>✓</u>	<u>✓</u>	<u>29</u>	<u>4</u>				
				</											

ANALYTICAL REPORT

January 29, 2019

Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1063811
Samples Received: 01/24/2019
Project Number: PECO-2018-01
Description: Claremont

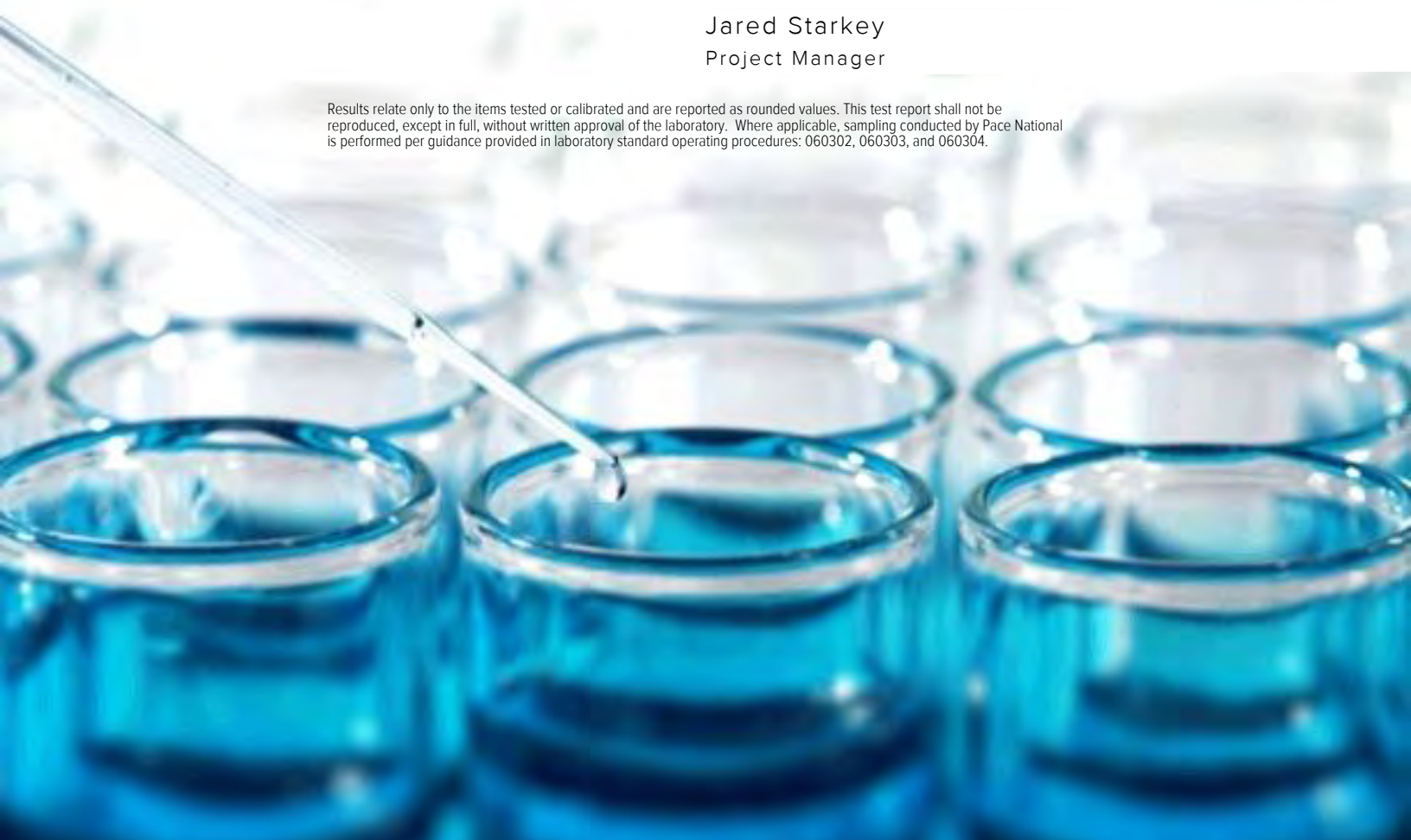
Report To: Jie Xu
600 Stewart Street
Suite 400
Seattle, WA 98101

Entire Report Reviewed By:



Jared Starkey
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹ Cp
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Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
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SS-BC-3 L1063811-02	7	⁴ Cn
SS-BC-4 L1063811-03	9	⁵ Sr
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Qc: Quality Control Summary	15	
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SS-BC-2 L1063811-01 Air

			Collected by J. Guillotte	Collected date/time 01/22/19 12:35	Received date/time 01/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1227828	1	01/24/19 18:50	01/24/19 18:50	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1228349	20	01/25/19 11:12	01/25/19 11:12	AMC

¹ Cp² Tc³ Ss

SS-BC-3 L1063811-02 Air

			Collected by J. Guillotte	Collected date/time 01/22/19 12:22	Received date/time 01/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1227828	1	01/24/19 19:33	01/24/19 19:33	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1228349	10	01/25/19 11:58	01/25/19 11:58	AMC

⁴ Cn⁵ Sr⁶ Qc

SS-BC-4 L1063811-03 Air

			Collected by J. Guillotte	Collected date/time 01/22/19 12:30	Received date/time 01/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1227828	1	01/24/19 20:17	01/24/19 20:17	AMC

⁷ Gl⁸ Al

EFFLUENT L1063811-04 Air

			Collected by J. Guillotte	Collected date/time 01/22/19 14:40	Received date/time 01/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1227828	1	01/24/19 21:02	01/24/19 21:02	AMC

⁹ Sc

INFLUENT L1063811-05 Air

			Collected by J. Guillotte	Collected date/time 01/22/19 14:45	Received date/time 01/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1227828	1	01/24/19 21:47	01/24/19 21:47	AMC



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jared Starkey
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.88	4.46		1	WG1227828
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1227828
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1227828
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1227828
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1227828
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1227828
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1227828
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1227828
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1227828
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1227828
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1227828
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1227828
Chloroform	67-66-3	119	0.200	0.973	1.53	7.43		1	WG1227828
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1227828
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1227828
Cyclohexane	110-82-7	84.20	0.200	0.689	0.572	1.97		1	WG1227828
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1227828
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1227828
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1227828
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1227828
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1227828
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1227828
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1227828
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1227828
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1227828
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1227828
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1227828
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1227828
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1227828
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1227828
Ethanol	64-17-5	46.10	0.630	1.19	43.3	81.6		1	WG1227828
Ethylbenzene	100-41-4	106	0.200	0.867	0.206	0.892		1	WG1227828
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1227828
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.266	1.49		1	WG1227828
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.331	1.64		1	WG1227828
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1227828
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1227828
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1227828
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1227828
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1227828
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1227828
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1227828
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1227828
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1227828
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1227828
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1227828
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1227828
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1227828
2-Propanol	67-63-0	60.10	1.25	3.07	1.43	3.50		1	WG1227828
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1227828
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1227828
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1227828
Tetrachloroethylene	127-18-4	166	4.00	27.2	143	968		20	WG1228349
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.214	0.631		1	WG1227828
Toluene	108-88-3	92.10	0.200	0.753	0.779	2.94		1	WG1227828
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1227828

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 01/22/19 12:35

L1063811

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1227828
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1227828
Trichloroethylene	79-01-6	131	0.200	1.07	17.2	92.3		1	WG1227828
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.314	1.54		1	WG1227828
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1227828
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	3.12	14.6		1	WG1227828
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1227828
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1227828
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1227828
m&p-Xylene	1330-20-7	106	0.400	1.73	0.763	3.31		1	WG1227828
o-Xylene	95-47-6	106	0.200	0.867	0.295	1.28		1	WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.1				WG1228349

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.18	9.94		1	WG1227828
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1227828
Benzene	71-43-2	78.10	0.200	0.639	1.15	3.68		1	WG1227828
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1227828
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1227828
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1227828
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1227828
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1227828
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1227828
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1227828
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1227828
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1227828
Chloroform	67-66-3	119	0.200	0.973	0.656	3.19		1	WG1227828
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1227828
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1227828
Cyclohexane	110-82-7	84.20	0.200	0.689	0.302	1.04		1	WG1227828
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1227828
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1227828
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1227828
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1227828
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1227828
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1227828
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1227828
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1227828
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1227828
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1227828
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1227828
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1227828
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1227828
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1227828
Ethanol	64-17-5	46.10	6.30	11.9	70.0	132		10	WG1228349
Ethylbenzene	100-41-4	106	0.200	0.867	0.326	1.41		1	WG1227828
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1227828
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.244	1.37		1	WG1227828
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.318	1.57		1	WG1227828
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1227828
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1227828
Heptane	142-82-5	100	0.200	0.818	0.273	1.12		1	WG1227828
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1227828
n-Hexane	110-54-3	86.20	0.200	0.705	0.296	1.04		1	WG1227828
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1227828
Methylene Chloride	75-09-2	84.90	0.200	0.694	2.86	9.93		1	WG1227828
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1227828
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1227828
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1227828
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1227828
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1227828
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1227828
2-Propanol	67-63-0	60.10	1.25	3.07	5.57	13.7		1	WG1227828
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1227828
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1227828
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1227828
Tetrachloroethylene	127-18-4	166	0.200	1.36	23.6	160		1	WG1227828
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1227828
Toluene	108-88-3	92.10	0.200	0.753	9.61	36.2		1	WG1227828
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1227828

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 01/22/19 12:22

L1063811

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1227828
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1227828
Trichloroethylene	79-01-6	131	0.200	1.07	10.9	58.3		1	WG1227828
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.287	1.41		1	WG1227828
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1227828
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1227828
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1227828
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1227828
Vinyl acetate	108-05-4	86.10	0.200	0.704	3.62	12.7		1	WG1227828
m&p-Xylene	1330-20-7	106	0.400	1.73	0.918	3.98		1	WG1227828
o-Xylene	95-47-6	106	0.200	0.867	0.343	1.49		1	WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.8				WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.0				WG1228349

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1227828
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1227828
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1227828
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1227828
Bromodichloromethane	75-27-4	164	0.200	1.34	0.303	2.04		1	WG1227828
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1227828
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1227828
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1227828
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1227828
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1227828
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1227828
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1227828
Chloroform	67-66-3	119	0.200	0.973	10.4	50.6		1	WG1227828
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1227828
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1227828
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1227828
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1227828
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1227828
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1227828
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1227828
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1227828
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1227828
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1227828
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1227828
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1227828
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1227828
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1227828
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1227828
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1227828
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1227828
Ethanol	64-17-5	46.10	0.630	1.19	5.66	10.7		1	WG1227828
Ethylbenzene	100-41-4	106	0.200	0.867	0.214	0.928		1	WG1227828
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1227828
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.270	1.52		1	WG1227828
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.353	1.75		1	WG1227828
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1227828
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1227828
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1227828
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1227828
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1227828
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1227828
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.360	1.25	B	1	WG1227828
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1227828
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1227828
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1227828
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1227828
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1227828
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1227828
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1227828
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1227828
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1227828
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1227828
Tetrachloroethylene	127-18-4	166	0.200	1.36	4.86	33.0		1	WG1227828
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1227828
Toluene	108-88-3	92.10	0.200	0.753	0.928	3.50		1	WG1227828
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1227828

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1227828
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1227828
Trichloroethylene	79-01-6	131	0.200	1.07	0.336	1.80		1	WG1227828
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.303	1.49		1	WG1227828
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1227828
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1227828
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1227828
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1227828
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1227828
m&p-Xylene	1330-20-7	106	0.400	1.73	0.771	3.34		1	WG1227828
o-Xylene	95-47-6	106	0.200	0.867	0.288	1.25		1	WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.0				WG1227828

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1227828
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1227828
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1227828
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1227828
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1227828
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1227828
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1227828
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1227828
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1227828
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1227828
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1227828
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1227828
Chloroform	67-66-3	119	0.200	0.973	0.861	4.19		1	WG1227828
Chloromethane	74-87-3	50.50	0.200	0.413	0.311	0.643		1	WG1227828
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1227828
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1227828
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1227828
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1227828
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1227828
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1227828
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1227828
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1227828
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1227828
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1227828
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1227828
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1227828
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1227828
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1227828
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1227828
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1227828
Ethanol	64-17-5	46.10	0.630	1.19	3.16	5.96		1	WG1227828
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1227828
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1227828
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	1.43	8.01		1	WG1227828
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	17.2	85.3		1	WG1227828
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1227828
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1227828
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1227828
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1227828
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1227828
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1227828
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.263	0.912	B	1	WG1227828
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1227828
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1227828
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1227828
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1227828
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1227828
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1227828
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1227828
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1227828
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1227828
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1227828
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1227828
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	2.06	6.08		1	WG1227828
Toluene	108-88-3	92.10	0.200	0.753	0.492	1.85		1	WG1227828
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1227828

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1227828
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1227828
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1227828
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1227828
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1227828
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1227828
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1227828
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1227828
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1227828
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1227828
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.4				WG1227828

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

INFLUENT

Collected date/time: 01/22/19 14:45

SAMPLE RESULTS - 05

L1063811

ONE LAB. NATIONWIDE.



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	3.30	7.84		1	WG1227828
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1227828
Benzene	71-43-2	78.10	0.200	0.639	1.60	5.10		1	WG1227828
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1227828
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1227828
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1227828
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1227828
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1227828
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1227828
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1227828
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1227828
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1227828
Chloroform	67-66-3	119	0.200	0.973	1.42	6.89		1	WG1227828
Chloromethane	74-87-3	50.50	0.200	0.413	0.330	0.681		1	WG1227828
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1227828
Cyclohexane	110-82-7	84.20	0.200	0.689	0.879	3.03		1	WG1227828
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1227828
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1227828
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1227828
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1227828
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1227828
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1227828
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1227828
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1227828
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1227828
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1227828
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1227828
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1227828
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1227828
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1227828
Ethanol	64-17-5	46.10	0.630	1.19	14.0	26.3		1	WG1227828
Ethylbenzene	100-41-4	106	0.200	0.867	1.96	8.51		1	WG1227828
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.250	1.23		1	WG1227828
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.504	2.83		1	WG1227828
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	5.78	28.6		1	WG1227828
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1227828
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1227828
Heptane	142-82-5	100	0.200	0.818	1.35	5.51		1	WG1227828
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1227828
n-Hexane	110-54-3	86.20	0.200	0.705	1.86	6.57		1	WG1227828
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1227828
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1227828
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1227828
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1227828
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1227828
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1227828
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1227828
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1227828
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1227828
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1227828
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1227828
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1227828
Tetrachloroethylene	127-18-4	166	0.200	1.36	3.54	24.0		1	WG1227828
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	2.05	6.05		1	WG1227828
Toluene	108-88-3	92.10	0.200	0.753	17.0	64.1		1	WG1227828
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1227828

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO-2018-01

SDG:

L1063811

DATE/TIME:

01/29/19 13:09

PAGE:

13 of 22



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	1.15	6.24		1	WG1227828
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1227828
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1227828
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	1.19	5.82		1	WG1227828
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.388	1.91		1	WG1227828
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1227828
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1227828
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1227828
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1227828
m&p-Xylene	1330-20-7	106	0.400	1.73	8.58	37.2		1	WG1227828
o-Xylene	95-47-6	106	0.200	0.867	2.78	12.1		1	WG1227828
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.1				WG1227828

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

[L1063811-01,02,03,04,05](#)

Method Blank (MB)

(MB) R3378583-3 01/24/19 10:30

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3378583-3 01/24/19 10:30

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0662	⌵	0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	99.7			60.0-140

1

Cp

2

Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378583-1 01/24/19 09:08 • (LCSD) R3378583-2 01/24/19 09:48

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.43	4.36	118	116	55.0-148			1.52	25
Propene	3.75	4.16	4.19	111	112	64.0-144			0.925	25
Dichlorodifluoromethane	3.75	4.12	4.05	110	108	64.0-139			1.67	25
1,2-Dichlorotetrafluoroethane	3.75	4.47	4.39	119	117	70.0-130			1.78	25
Chloromethane	3.75	4.39	4.33	117	116	70.0-130			1.33	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378583-1 01/24/19 09:08 • (LCSD) R3378583-2 01/24/19 09:48

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Vinyl chloride	3.75	4.13	4.11	110	110	70.0-130			0.621	25
1,3-Butadiene	3.75	4.13	3.99	110	106	70.0-130			3.63	25
Bromomethane	3.75	4.15	4.11	111	109	70.0-130			0.961	25
Chloroethane	3.75	4.19	4.04	112	108	70.0-130			3.72	25
Trichlorofluoromethane	3.75	4.15	4.08	111	109	70.0-130			1.76	25
1,1,2-Trichlorotrifluoroethane	3.75	4.18	4.12	111	110	70.0-130			1.47	25
1,1-Dichloroethene	3.75	4.29	4.26	114	114	70.0-130			0.555	25
1,1-Dichloroethane	3.75	4.29	4.28	114	114	70.0-130			0.133	25
Acetone	3.75	4.43	4.37	118	117	70.0-130			1.23	25
2-Propanol	3.75	4.49	4.46	120	119	70.0-139			0.636	25
Carbon disulfide	3.75	4.25	4.22	113	112	70.0-130			0.721	25
Methylene Chloride	3.75	4.07	4.00	109	107	70.0-130			1.88	25
MTBE	3.75	4.30	4.24	115	113	70.0-130			1.29	25
trans-1,2-Dichloroethene	3.75	4.27	4.23	114	113	70.0-130			0.897	25
n-Hexane	3.75	4.40	4.43	117	118	70.0-130			0.507	25
Vinyl acetate	3.75	4.57	4.58	122	122	70.0-130			0.149	25
Methyl Ethyl Ketone	3.75	4.36	4.30	116	115	70.0-130			1.26	25
cis-1,2-Dichloroethene	3.75	4.19	4.17	112	111	70.0-130			0.533	25
Chloroform	3.75	4.22	4.20	112	112	70.0-130			0.388	25
Cyclohexane	3.75	4.32	4.28	115	114	70.0-130			0.958	25
1,1,1-Trichloroethane	3.75	4.29	4.22	114	113	70.0-130			1.62	25
Carbon tetrachloride	3.75	4.26	4.19	114	112	70.0-130			1.66	25
Benzene	3.75	4.22	4.15	113	111	70.0-130			1.79	25
1,2-Dichloroethane	3.75	4.21	4.15	112	111	70.0-130			1.50	25
Heptane	3.75	4.55	4.47	121	119	70.0-130			1.66	25
Trichloroethylene	3.75	4.14	4.09	110	109	70.0-130			1.12	25
1,2-Dichloropropane	3.75	4.24	4.19	113	112	70.0-130			1.19	25
1,4-Dioxane	3.75	4.31	4.28	115	114	70.0-140			0.690	25
Bromodichloromethane	3.75	4.17	4.12	111	110	70.0-130			1.30	25
cis-1,3-Dichloropropene	3.75	4.23	4.26	113	113	70.0-130			0.683	25
4-Methyl-2-pentanone (MIBK)	3.75	4.58	4.49	122	120	70.0-139			1.96	25
Toluene	3.75	4.27	4.25	114	113	70.0-130			0.659	25
trans-1,3-Dichloropropene	3.75	4.28	4.24	114	113	70.0-130			0.938	25
1,1,2-Trichloroethane	3.75	4.24	4.17	113	111	70.0-130			1.68	25
Tetrachloroethylene	3.75	4.15	4.10	111	109	70.0-130			1.21	25
Methyl Butyl Ketone	3.75	4.79	4.68	128	125	70.0-149			2.24	25
Dibromochloromethane	3.75	4.16	4.13	111	110	70.0-130			0.789	25
1,2-Dibromoethane	3.75	4.21	4.15	112	111	70.0-130			1.44	25
Chlorobenzene	3.75	4.24	4.17	113	111	70.0-130			1.58	25
Ethylbenzene	3.75	4.46	4.40	119	117	70.0-130			1.37	25

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378583-1 01/24/19 09:08 • (LCSD) R3378583-2 01/24/19 09:48

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	9.07	8.99	121	120	70.0-130			0.873	25
o-Xylene	3.75	4.43	4.40	118	117	70.0-130			0.743	25
Styrene	3.75	4.46	4.41	119	118	70.0-130			1.07	25
Bromoform	3.75	4.28	4.22	114	113	70.0-130			1.44	25
1,1,2,2-Tetrachloroethane	3.75	4.39	4.29	117	114	70.0-130			2.29	25
4-Ethyltoluene	3.75	4.55	4.50	121	120	70.0-130			1.14	25
1,3,5-Trimethylbenzene	3.75	4.35	4.27	116	114	70.0-130			2.00	25
1,2,4-Trimethylbenzene	3.75	4.37	4.30	116	115	70.0-130			1.50	25
1,3-Dichlorobenzene	3.75	4.23	4.15	113	111	70.0-130			1.75	25
1,4-Dichlorobenzene	3.75	4.31	4.18	115	112	70.0-130			2.94	25
Benzyl Chloride	3.75	4.59	4.48	122	119	70.0-152			2.51	25
1,2-Dichlorobenzene	3.75	4.22	4.10	112	109	70.0-130			2.85	25
1,2,4-Trichlorobenzene	3.75	4.48	4.28	119	114	70.0-160			4.55	25
Hexachloro-1,3-butadiene	3.75	4.17	3.94	111	105	70.0-151			5.56	25
Naphthalene	3.75	4.62	4.37	123	116	70.0-159			5.57	25
Allyl Chloride	3.75	4.57	4.50	122	120	70.0-130			1.50	25
2-Chlorotoluene	3.75	4.39	4.25	117	113	70.0-130			3.17	25
Methyl Methacrylate	3.75	4.27	4.29	114	115	70.0-130			0.567	25
Tetrahydrofuran	3.75	4.45	4.37	119	117	70.0-137			1.71	25
2,2,4-Trimethylpentane	3.75	4.60	4.57	123	122	70.0-130			0.641	25
Vinyl Bromide	3.75	4.17	4.06	111	108	70.0-130			2.76	25
Isopropylbenzene	3.75	4.46	4.39	119	117	70.0-130			1.58	25
(S) 1,4-Bromofluorobenzene				105	104	60.0-140				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3378852-2 01/25/19 03:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Tetrachloroethylene	U		0.0497	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	92.7			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378852-1 01/25/19 03:06 • (LCSD) R3378852-3 01/25/19 08:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Ethanol	3.75	3.46	3.52	92.2	93.9	55.0-148			1.82	25
Tetrachloroethylene	3.75	4.06	4.00	108	107	70.0-130			1.55	25
(S) 1,4-Bromofluorobenzene				99.3	99.8	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

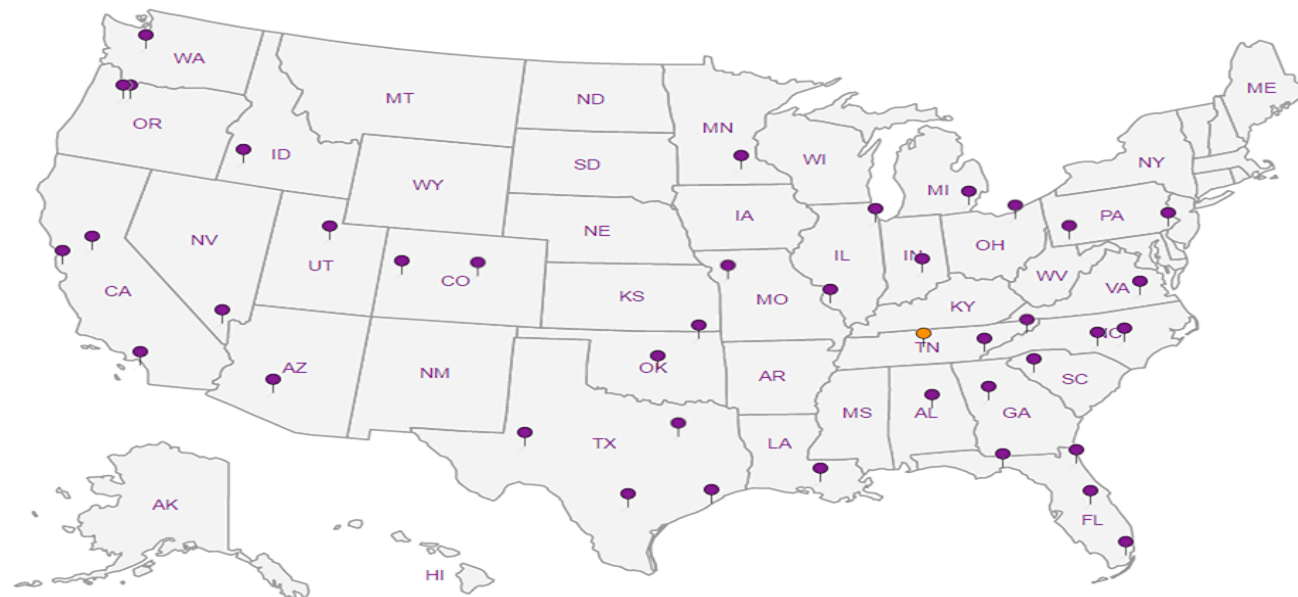
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



January 30, 2019

Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1063996
Samples Received: 01/24/2019
Project Number: PECO-2018-01
Description: Claremont

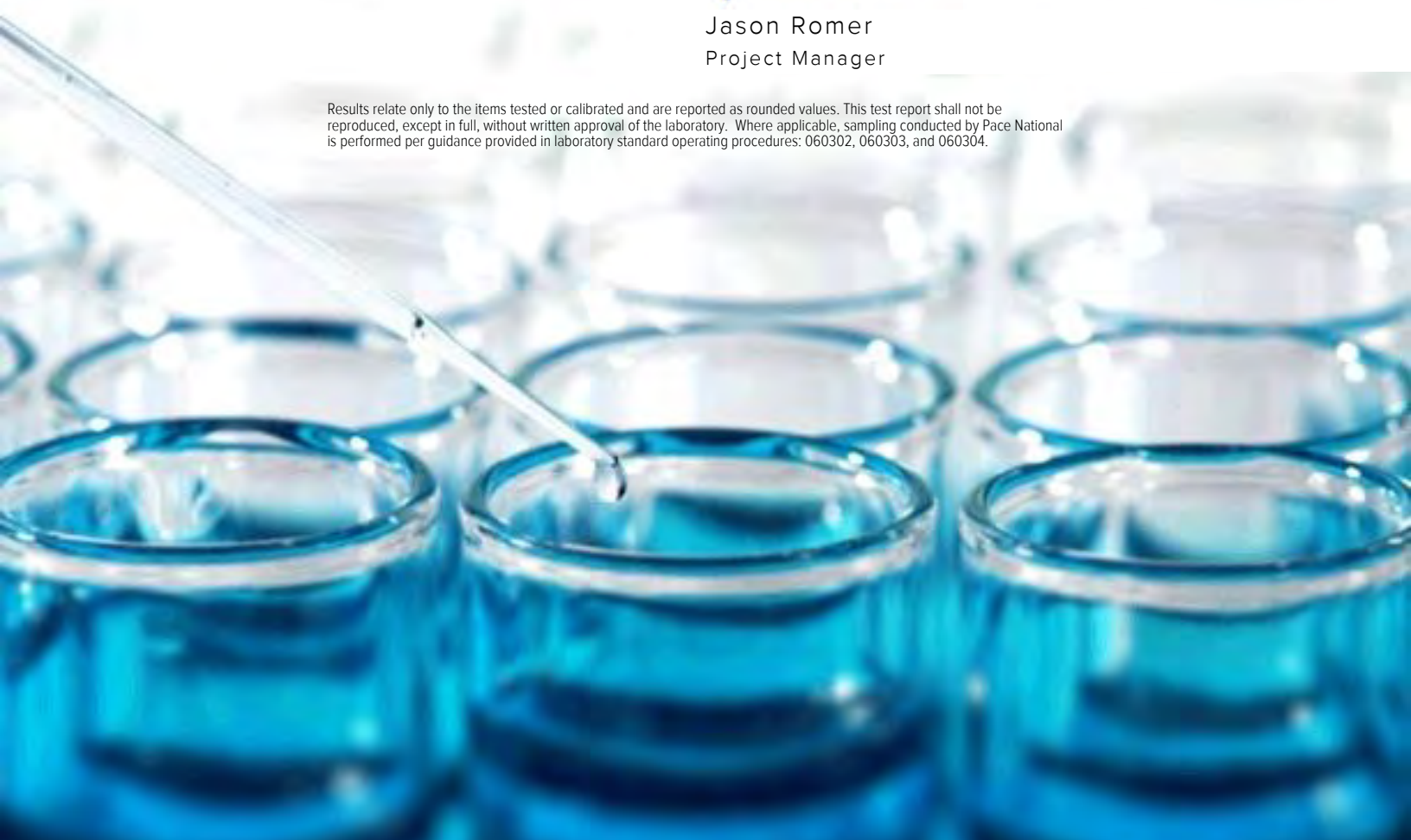
Report To: Jie Xu
600 Stewart Street
Suite 400
Seattle, WA 98101

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





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MW-1 L1063996-01	5	
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		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L1063996-01 GW

Collected by
J. Guillotte

Collected date/time
01/22/19 15:05

Received date/time
01/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1228162	1	01/25/19 02:35	01/25/19 02:35	JCP

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO-2018-01

SDG:

L1063996

DATE/TIME:

01/30/19 10:03

PAGE:

3 of 10



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	U		0.188	0.500	1	01/25/2019 02:35	WG1228162
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/25/2019 02:35	WG1228162
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/25/2019 02:35	WG1228162
Tetrachloroethene	U		0.199	0.500	1	01/25/2019 02:35	WG1228162
Trichloroethene	U		0.153	0.500	1	01/25/2019 02:35	WG1228162
Vinyl chloride	U		0.118	0.500	1	01/25/2019 02:35	WG1228162
(S) Toluene-d8	102			80.0-120		01/25/2019 02:35	WG1228162
(S) Dibromofluoromethane	102			75.0-120		01/25/2019 02:35	WG1228162
(S) 4-Bromofluorobenzene	99.1			77.0-126		01/25/2019 02:35	WG1228162

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3378861-3 01/24/19 19:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	0.187	U	0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	0.265	U	0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	101			80.0-120
(S) Dibromofluoromethane	104			75.0-120
(S) 4-Bromofluorobenzene	93.8			77.0-126

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378861-1 01/24/19 18:59 • (LCSD) R3378861-2 01/24/19 19:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	25.0	25.8	25.9	103	104	71.0-124			0.465	20
cis-1,2-Dichloroethene	25.0	28.2	27.8	113	111	73.0-120			1.51	20
trans-1,2-Dichloroethene	25.0	27.1	27.6	108	110	73.0-120			1.83	20
Tetrachloroethene	25.0	24.7	24.7	98.8	98.7	72.0-132			0.164	20
Trichloroethene	25.0	25.6	26.0	102	104	78.0-124			1.47	20
Vinyl chloride	25.0	27.9	28.1	112	112	67.0-131			0.529	20
(S) Toluene-d8				100	99.1	80.0-120				
(S) Dibromofluoromethane				102	102	75.0-120				
(S) 4-Bromofluorobenzene				92.5	93.3	77.0-126				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

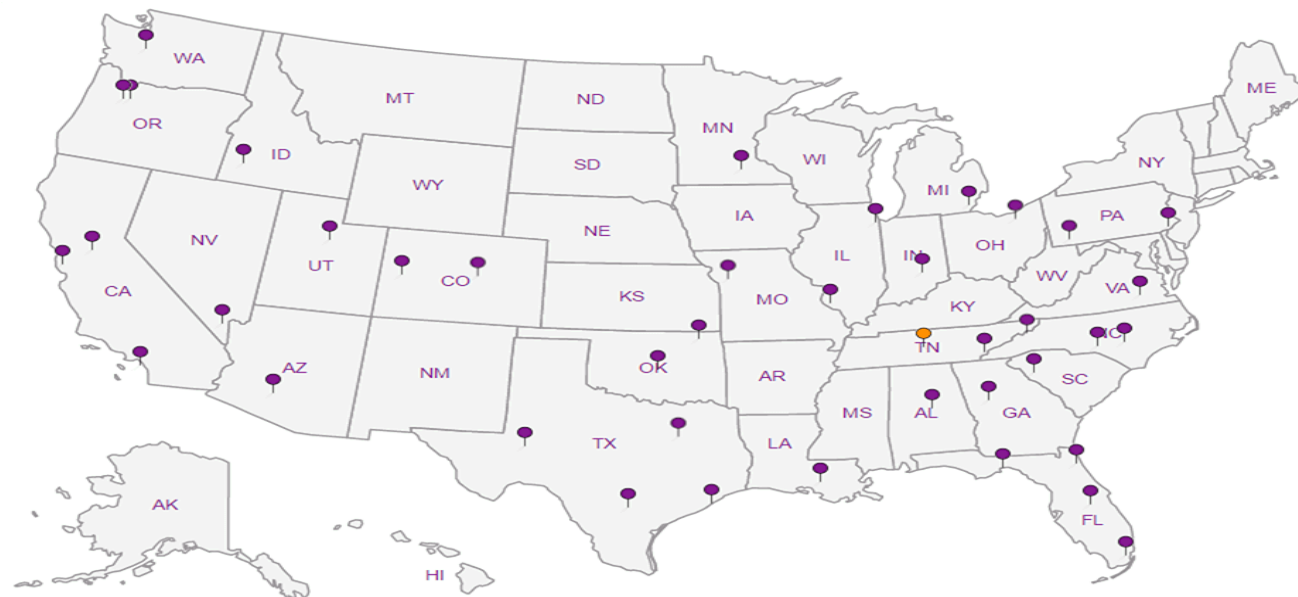
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



D242

L1063994

Project Manager: JLE 84

Project Name: Clement

Project Number: PECO-2018-01

Sampler Name: 1 GUILLOTTE

Analytical Lab:

Report To:

Page: 1 of 1

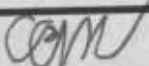
Analyze For:

[illegible]

4510 1660 4757 Total 12 3 containers received

Pace Analytical National Center for Testing & Innovation

Cooler Receipt Form

Client:	SDG#	L1063996		
Cooler Received/Opened On: 1/24/19	Temperature:	0.8		
Received By: Cole Medley				
Signature: 				
Receipt Check List		NP	Yes	No
COC Seal Present / Intact?				
COC Signed / Accurate?				
Bottles arrive intact?				
Correct bottles used?				
Sufficient volume sent?				
If Applicable				
VOA Zero headspace?				
Preservation Correct / Checked?				

April 30, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

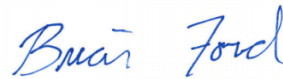
⁹ Sc

Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1093033
Samples Received: 04/26/2019
Project Number: PECO-2018-01
Description:

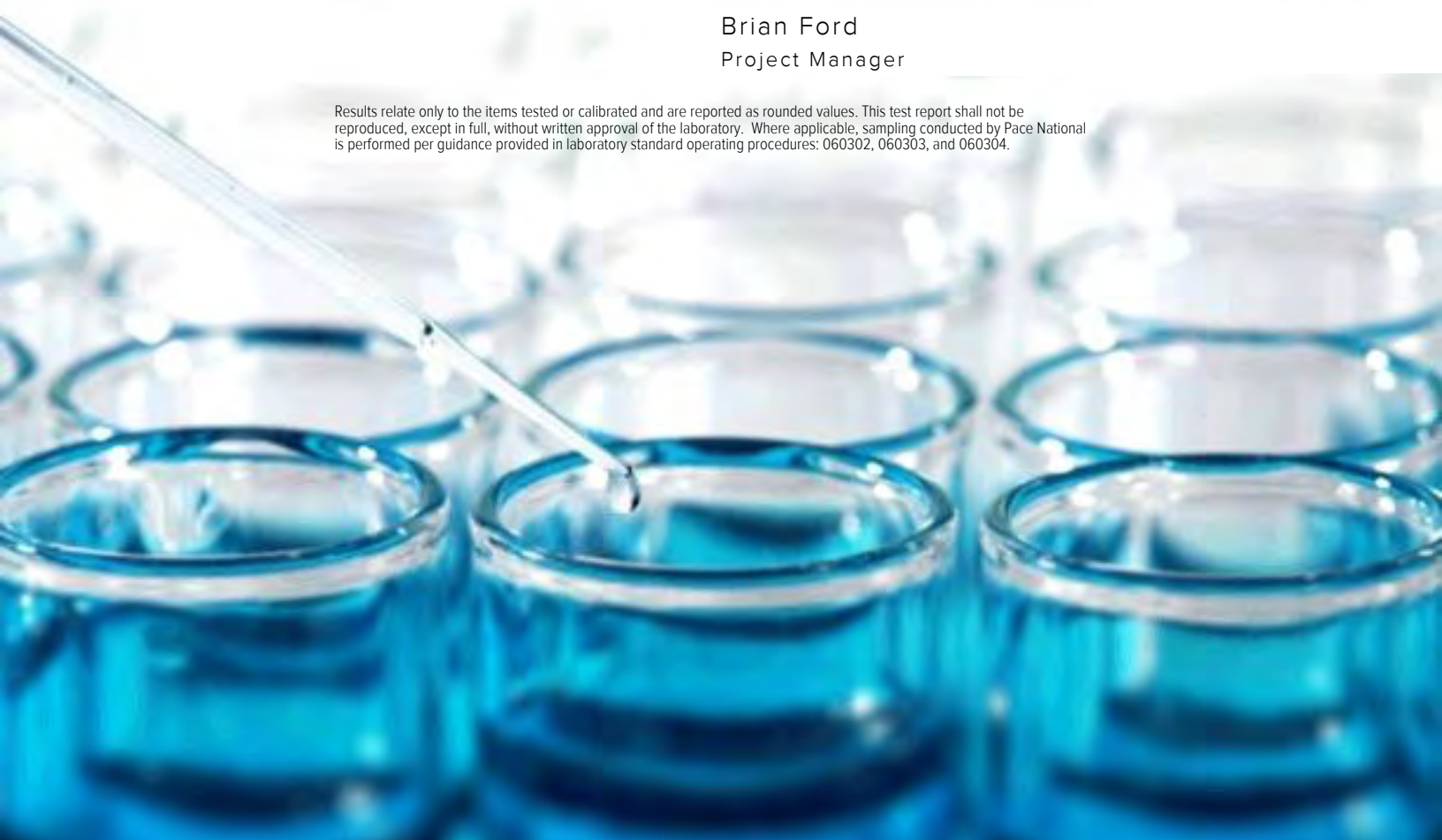
Report To: Jie Xu
600 Stewart Street
Suite 400
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

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SS-BC-4 L1093033-02	6	⁴ Cn
SS-BC-2 L1093033-03	7	⁵ Sr
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Volatile Organic Compounds (MS) by Method TO-15	8	⁶ Qc
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Al: Accreditations & Locations	11	
Sc: Sample Chain of Custody	12	⁸ Al
		⁹ Sc



SS-BC-3 L1093033-01 Air

				Collected by J.G	Collected date/time 04/25/19 09:41	Received date/time 04/26/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1272806	1	04/27/19 17:38	04/27/19 17:38	AMC	Mt. Juliet, TN

¹ Cp² Tc³ Ss

SS-BC-4 L1093033-02 Air

				Collected by J.G	Collected date/time 04/25/19 09:47	Received date/time 04/26/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1272806	1	04/27/19 18:22	04/27/19 18:22	AMC	Mt. Juliet, TN

⁴ Cn⁵ Sr

SS-BC-2 L1093033-03 Air

				Collected by J.G	Collected date/time 04/25/19 09:50	Received date/time 04/26/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1272806	1	04/27/19 19:05	04/27/19 19:05	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1273031	10	04/28/19 20:30	04/28/19 20:30	MBF	Mt. Juliet, TN

⁶ Qc⁷ Gl⁸ Al⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1272806
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1272806
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1272806
Tetrachloroethylene	127-18-4	166	0.200	1.36	17.0	115		1	WG1272806
Trichloroethylene	79-01-6	131	0.200	1.07	8.30	44.5		1	WG1272806
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1272806
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1272806

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1272806
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1272806
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1272806
Tetrachloroethylene	127-18-4	166	0.200	1.36	8.36	56.8		1	WG1272806
Trichloroethylene	79-01-6	131	0.200	1.07	0.514	2.76		1	WG1272806
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1272806
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		108				WG1272806

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1272806
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1272806
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1272806
Tetrachloroethylene	127-18-4	166	2.00	13.6	117	793		10	WG1273031
Trichloroethylene	79-01-6	131	0.200	1.07	13.0	69.7		1	WG1272806
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1272806
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		106				WG1272806
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.4				WG1273031

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3406119-2 04/27/19 09:37

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
Tetrachloroethylene	U		0.0497	0.200
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	86.7			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406119-1 04/27/19 08:57 • (LCSD) R3406119-3 04/27/19 10:17

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.65	4.25	97.4	113	70.0-130			15.0	25
1,1-Dichloroethene	3.75	4.09	4.01	109	107	70.0-130			1.97	25
trans-1,2-Dichloroethene	3.75	4.20	4.01	112	107	70.0-130			4.50	25
cis-1,2-Dichloroethene	3.75	4.09	4.06	109	108	70.0-130			0.822	25
Trichloroethylene	3.75	4.14	4.08	110	109	70.0-130			1.53	25
Tetrachloroethylene	3.75	4.20	4.21	112	112	70.0-130			0.404	25
(S) 1,4-Bromofluorobenzene				105	106	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3406236-3 04/28/19 09:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Tetrachloroethylene	U		0.0497	0.200
(S) 1,4-Bromofluorobenzene	93.9			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406236-1 04/28/19 08:33 • (LCSD) R3406236-2 04/28/19 09:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Tetrachloroethylene	3.75	4.26	4.34	113	116	70.0-130			1.99	25
(S) 1,4-Bromofluorobenzene				107	106	60.0-140				

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

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Abbreviations and Definitions

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RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
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Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
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Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
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Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

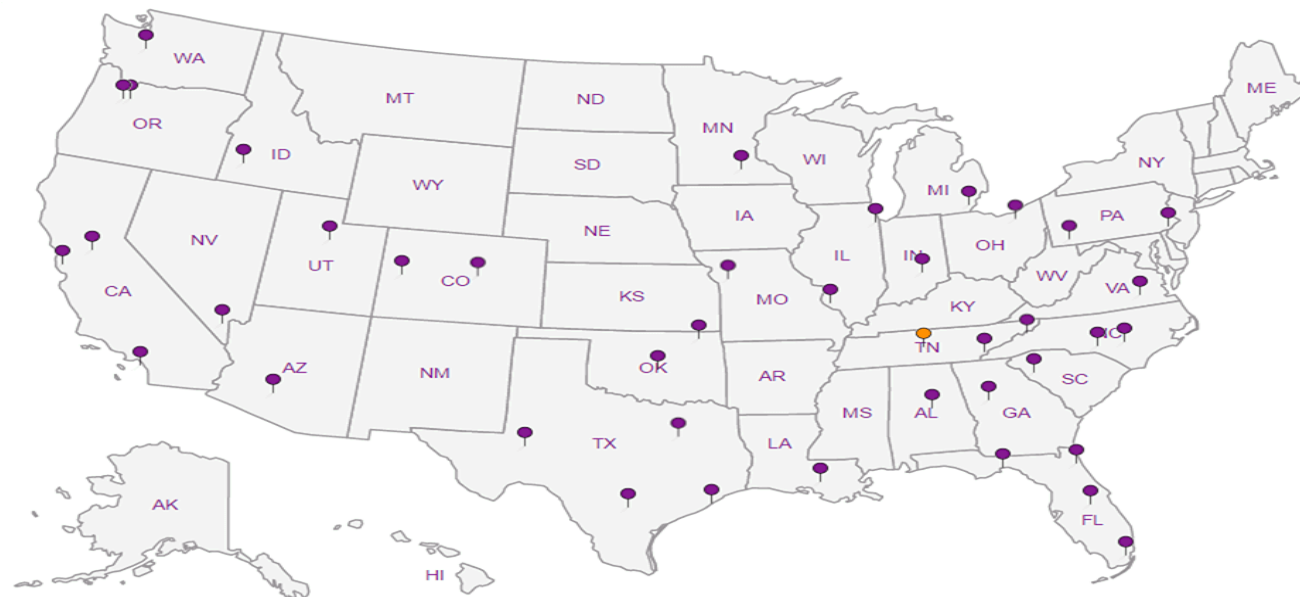
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.

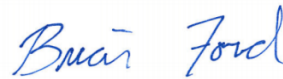


Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1208063
Samples Received: 04/11/2020
Project Number: PECO-2018
Description: Claremont

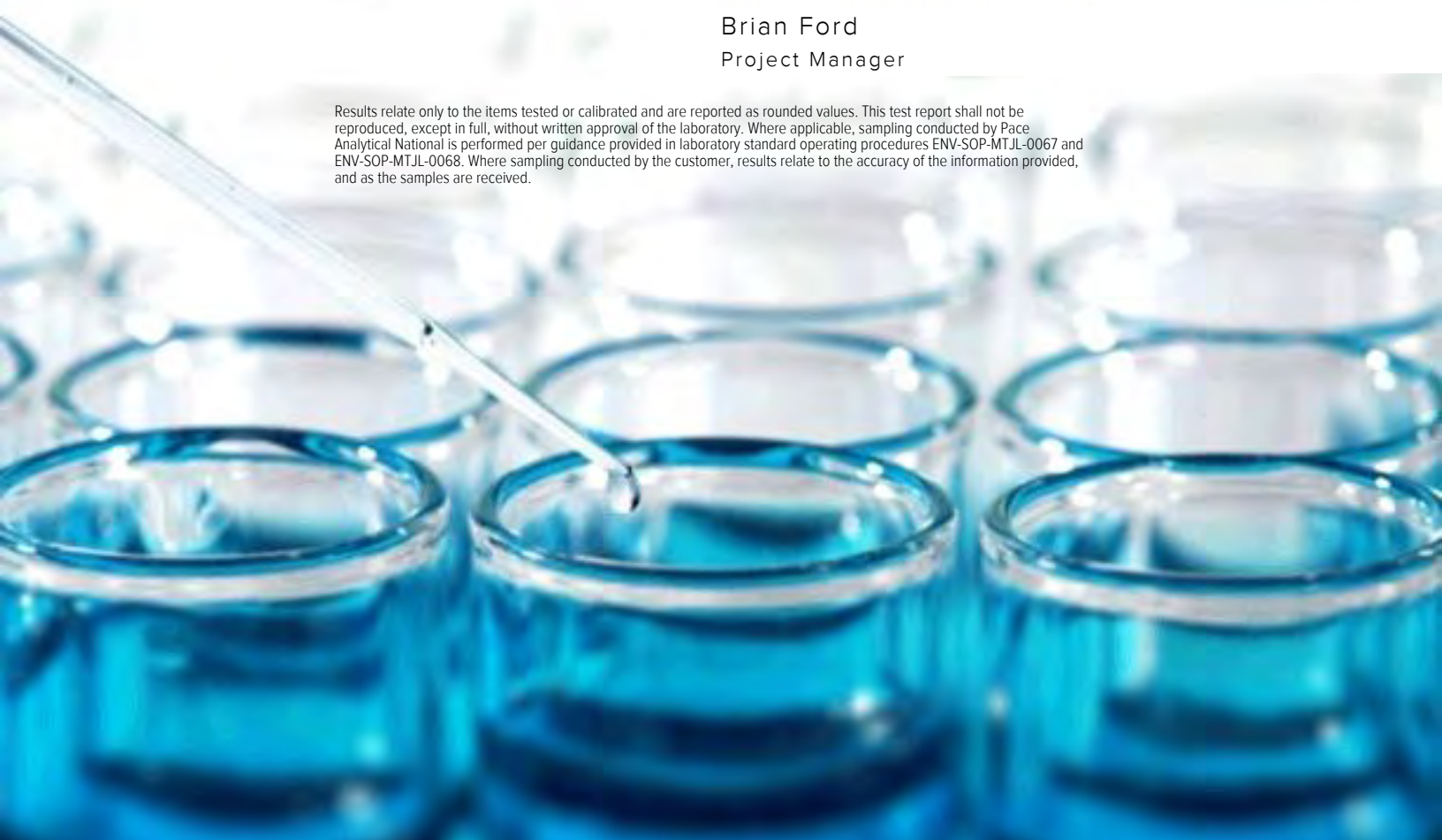
Report To: Jie Xu
600 Stewart St
Ste 400
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
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Cn: Case Narrative	4	
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SS-WB-4 L1208063-02	7	⁴ Cn
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SS-WB-3 L1208063-01 Air

				Collected by J Guillotte	Collected date/time 04/10/20 11:46	Received date/time 04/11/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1459738	1	04/13/20 14:00	04/13/20 14:00	MBF	Mt. Juliet, TN

SS-WB-4 L1208063-02 Air

				Collected by J Guillotte	Collected date/time 04/10/20 11:51	Received date/time 04/11/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1459738	1	04/13/20 14:37	04/13/20 14:37	MBF	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1460112	10	04/14/20 08:59	04/14/20 08:59	CAW	Mt. Juliet, TN

SS-BC-3 L1208063-03 Air

				Collected by J Guillotte	Collected date/time 04/10/20 10:36	Received date/time 04/11/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1459738	1	04/13/20 15:15	04/13/20 15:15	MBF	Mt. Juliet, TN

SS-BC-4 L1208063-04 Air

				Collected by J Guillotte	Collected date/time 04/10/20 10:41	Received date/time 04/11/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1459738	1	04/13/20 15:52	04/13/20 15:52	MBF	Mt. Juliet, TN

SS-BC-2 L1208063-05 Air

				Collected by J Guillotte	Collected date/time 04/10/20 10:41	Received date/time 04/11/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1459738	1	04/13/20 16:30	04/13/20 16:30	MBF	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1460112	10	04/14/20 09:39	04/14/20 09:39	CAW	Mt. Juliet, TN





All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.95	7.01		1	WG1459738
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1459738
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1459738
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1459738
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1459738
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1459738
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1459738
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1459738
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1459738
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1459738
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1459738
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1459738
Chloroform	67-66-3	119	0.200	0.973	0.380	1.85		1	WG1459738
Chloromethane	74-87-3	50.50	0.200	0.413	0.423	0.874		1	WG1459738
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1459738
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1459738
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1459738
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1459738
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1459738
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1459738
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1459738
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1459738
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1459738
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1459738
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1459738
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1459738
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1459738
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1459738
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1459738
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1459738
Ethanol	64-17-5	46.10	0.630	1.19	11.5	21.7		1	WG1459738
Ethylbenzene	100-41-4	106	0.200	0.867	5.52	23.9		1	WG1459738
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1459738
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.287	1.61		1	WG1459738
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.690	3.41		1	WG1459738
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1459738
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1459738
Heptane	142-82-5	100	0.200	0.818	0.519	2.12		1	WG1459738
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1459738
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1459738
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1459738
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1459738
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1459738
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1459738
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1459738
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1459738
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1459738
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1459738
2-Propanol	67-63-0	60.10	1.25	3.07	2.43	5.97		1	WG1459738
Propene	115-07-1	42.10	0.400	0.689	0.534	0.919		1	WG1459738
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1459738
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1459738
Tetrachloroethylene	127-18-4	166	0.200	1.36	13.0	88.3		1	WG1459738
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1459738
Toluene	108-88-3	92.10	0.200	0.753	1.84	6.93		1	WG1459738
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1459738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 04/10/20 11:46

L1208063

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1459738
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1459738
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1459738
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.353	1.73		1	WG1459738
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1459738
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1459738
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1459738
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1459738
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1459738
m&p-Xylene	1330-20-7	106	0.400	1.73	27.8	121		1	WG1459738
o-Xylene	95-47-6	106	0.200	0.867	5.77	25.0		1	WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1459738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

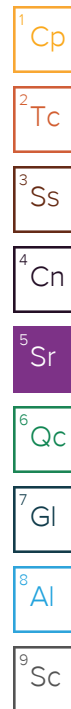
8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.74	6.51		1	WG1459738
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1459738
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1459738
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1459738
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1459738
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1459738
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1459738
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1459738
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1459738
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1459738
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1459738
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1459738
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1459738
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1459738
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1459738
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1459738
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1459738
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1459738
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1459738
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1459738
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1459738
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1459738
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1459738
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1459738
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1459738
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1459738
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1459738
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1459738
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1459738
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1459738
Ethanol	64-17-5	46.10	0.630	1.19	17.4	32.8		1	WG1459738
Ethylbenzene	100-41-4	106	0.200	0.867	83.9	364		1	WG1459738
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.393	1.93		1	WG1459738
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.301	1.69		1	WG1459738
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.590	2.92		1	WG1459738
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1459738
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1459738
Heptane	142-82-5	100	0.200	0.818	5.81	23.8		1	WG1459738
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1459738
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1459738
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.717	3.52		1	WG1459738
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.406	1.41		1	WG1459738
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1459738
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1459738
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1459738
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1459738
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1459738
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1459738
2-Propanol	67-63-0	60.10	1.25	3.07	4.47	11.0		1	WG1459738
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1459738
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1459738
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1459738
Tetrachloroethylene	127-18-4	166	0.200	1.36	14.7	99.8		1	WG1459738
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1459738
Toluene	108-88-3	92.10	0.200	0.753	2.75	10.4		1	WG1459738
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1459738





Collected date/time: 04/10/20 11:51

L1208063

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1459738
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1459738
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1459738
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.282	1.38		1	WG1459738
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1459738
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1459738
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1459738
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1459738
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1459738
m&p-Xylene	1330-20-7	106	4.00	17.3	392	1700		10	WG1460112
o-Xylene	95-47-6	106	0.200	0.867	81.3	352		1	WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		107				WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.8				WG1460112

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.24	14.8		1	WG1459738
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1459738
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1459738
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1459738
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1459738
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1459738
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1459738
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1459738
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1459738
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1459738
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1459738
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1459738
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1459738
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1459738
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1459738
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1459738
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1459738
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1459738
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1459738
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1459738
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1459738
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1459738
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1459738
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1459738
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1459738
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1459738
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1459738
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1459738
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1459738
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1459738
Ethanol	64-17-5	46.10	0.630	1.19	13.8	26.0		1	WG1459738
Ethylbenzene	100-41-4	106	0.200	0.867	5.33	23.1		1	WG1459738
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.262	1.29		1	WG1459738
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.328	1.84		1	WG1459738
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.912	4.51		1	WG1459738
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1459738
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1459738
Heptane	142-82-5	100	0.200	0.818	0.463	1.89		1	WG1459738
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1459738
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1459738
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.425	2.09		1	WG1459738
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1459738
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1459738
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1459738
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1459738
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1459738
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1459738
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1459738
2-Propanol	67-63-0	60.10	1.25	3.07	5.83	14.3		1	WG1459738
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1459738
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1459738
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1459738
Tetrachloroethylene	127-18-4	166	0.200	1.36	66.4	451		1	WG1459738
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1459738
Toluene	108-88-3	92.10	0.200	0.753	3.26	12.3		1	WG1459738
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1459738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1459738
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1459738
Trichloroethylene	79-01-6	131	0.200	1.07	5.28	28.3		1	WG1459738
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.377	1.85		1	WG1459738
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1459738
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1459738
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1459738
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1459738
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1459738
m&p-Xylene	1330-20-7	106	0.400	1.73	25.9	112		1	WG1459738
o-Xylene	95-47-6	106	0.200	0.867	5.99	26.0		1	WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		112				WG1459738

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.37	5.63		1	WG1459738
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1459738
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1459738
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1459738
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1459738
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1459738
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1459738
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1459738
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1459738
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1459738
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1459738
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1459738
Chloroform	67-66-3	119	0.200	0.973	4.70	22.9		1	WG1459738
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1459738
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1459738
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1459738
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1459738
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1459738
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1459738
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1459738
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1459738
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1459738
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1459738
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1459738
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1459738
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1459738
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1459738
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1459738
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1459738
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1459738
Ethanol	64-17-5	46.10	0.630	1.19	9.25	17.4		1	WG1459738
Ethylbenzene	100-41-4	106	0.200	0.867	3.60	15.6		1	WG1459738
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1459738
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.326	1.83		1	WG1459738
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.623	3.08		1	WG1459738
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1459738
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1459738
Heptane	142-82-5	100	0.200	0.818	0.278	1.14		1	WG1459738
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1459738
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1459738
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1459738
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1459738
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1459738
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1459738
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1459738
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1459738
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1459738
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1459738
2-Propanol	67-63-0	60.10	1.25	3.07	3.69	9.07		1	WG1459738
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1459738
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1459738
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1459738
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.62	11.0		1	WG1459738
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1459738
Toluene	108-88-3	92.10	0.200	0.753	2.43	9.15		1	WG1459738
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1459738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1459738
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1459738
Trichloroethylene	79-01-6	131	0.200	1.07	0.306	1.64		1	WG1459738
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.245	1.20		1	WG1459738
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1459738
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1459738
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1459738
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1459738
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1459738
m&p-Xylene	1330-20-7	106	0.400	1.73	17.5	75.9		1	WG1459738
o-Xylene	95-47-6	106	0.200	0.867	4.34	18.8		1	WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1459738

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.37	12.8		1	WG1459738
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1459738
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1459738
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1459738
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1459738
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1459738
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1459738
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1459738
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1459738
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1459738
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1459738
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1459738
Chloroform	67-66-3	119	0.200	0.973	1.11	5.40		1	WG1459738
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1459738
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1459738
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1459738
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1459738
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1459738
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1459738
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1459738
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1459738
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1459738
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1459738
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1459738
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1459738
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1459738
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1459738
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1459738
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1459738
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1459738
Ethanol	64-17-5	46.10	0.630	1.19	14.1	26.6		1	WG1459738
Ethylbenzene	100-41-4	106	0.200	0.867	15.2	65.9		1	WG1459738
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.367	1.80		1	WG1459738
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.279	1.57		1	WG1459738
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.779	3.85		1	WG1459738
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1459738
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1459738
Heptane	142-82-5	100	0.200	0.818	2.74	11.2		1	WG1459738
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1459738
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1459738
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1459738
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1459738
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1459738
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1459738
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1459738
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1459738
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1459738
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1459738
2-Propanol	67-63-0	60.10	1.25	3.07	7.56	18.6		1	WG1459738
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1459738
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1459738
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1459738
Tetrachloroethylene	127-18-4	166	2.00	13.6	154	1050		10	WG1460112
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1459738
Toluene	108-88-3	92.10	0.200	0.753	3.65	13.7		1	WG1459738
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1459738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1459738
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1459738
Trichloroethylene	79-01-6	131	0.200	1.07	5.39	28.9		1	WG1459738
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.391	1.92		1	WG1459738
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1459738
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1459738
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1459738
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1459738
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1459738
m&p-Xylene	1330-20-7	106	0.400	1.73	75.0	325		1	WG1459738
o-Xylene	95-47-6	106	0.200	0.867	12.9	55.9		1	WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1459738
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		92.9				WG1460112

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

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Method Blank (MB)

(MB) R3518305-3 04/13/20 06:49

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3518305-3 04/13/20 06:49

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	92.7			60.0-140

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3518305-1 04/13/20 05:31 • (LCSD) R3518305-2 04/13/20 06:09

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.51	4.28	120	114	55.0-148			5.23	25
Propene	3.75	4.17	4.07	111	109	64.0-144			2.43	25
Dichlorodifluoromethane	3.75	4.33	4.18	115	111	64.0-139			3.53	25
1,2-Dichlorotetrafluoroethane	3.75	4.30	4.32	115	115	70.0-130			0.464	25
Chloromethane	3.75	4.60	4.38	123	117	70.0-130			4.90	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3518305-1 04/13/20 05:31 • (LCSD) R3518305-2 04/13/20 06:09

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	4.62	4.24	123	113	70.0-130			8.58	25
1,3-Butadiene	3.75	4.47	4.60	119	123	70.0-130			2.87	25
Bromomethane	3.75	4.30	4.09	115	109	70.0-130			5.01	25
Chloroethane	3.75	4.45	4.45	119	119	70.0-130			0.000	25
Trichlorofluoromethane	3.75	4.27	4.15	114	111	70.0-130			2.85	25
1,1,2-Trichlorotrifluoroethane	3.75	4.18	4.19	111	112	70.0-130			0.239	25
1,1-Dichloroethene	3.75	4.26	4.14	114	110	70.0-130			2.86	25
1,1-Dichloroethane	3.75	4.36	4.41	116	118	70.0-130			1.14	25
Acetone	3.75	4.51	4.59	120	122	70.0-130			1.76	25
2-Propanol	3.75	4.17	4.37	111	117	70.0-139			4.68	25
Carbon disulfide	3.75	4.21	4.17	112	111	70.0-130			0.955	25
Methylene Chloride	3.75	4.20	4.19	112	112	70.0-130			0.238	25
MTBE	3.75	4.10	4.06	109	108	70.0-130			0.980	25
trans-1,2-Dichloroethene	3.75	4.28	4.22	114	113	70.0-130			1.41	25
n-Hexane	3.75	4.55	4.48	121	119	70.0-130			1.55	25
Vinyl acetate	3.75	4.46	4.25	119	113	70.0-130			4.82	25
Methyl Ethyl Ketone	3.75	4.02	3.99	107	106	70.0-130			0.749	25
cis-1,2-Dichloroethene	3.75	4.00	4.01	107	107	70.0-130			0.250	25
Chloroform	3.75	4.17	4.13	111	110	70.0-130			0.964	25
Cyclohexane	3.75	4.13	4.14	110	110	70.0-130			0.242	25
1,1,1-Trichloroethane	3.75	4.10	4.17	109	111	70.0-130			1.69	25
Carbon tetrachloride	3.75	4.09	4.16	109	111	70.0-130			1.70	25
Benzene	3.75	4.14	4.31	110	115	70.0-130			4.02	25
1,2-Dichloroethane	3.75	3.98	4.06	106	108	70.0-130			1.99	25
Heptane	3.75	4.35	4.21	116	112	70.0-130			3.27	25
Trichloroethylene	3.75	4.21	4.17	112	111	70.0-130			0.955	25
1,2-Dichloropropane	3.75	4.53	4.13	121	110	70.0-130			9.24	25
1,4-Dioxane	3.75	3.84	4.05	102	108	70.0-140			5.32	25
Bromodichloromethane	3.75	3.98	3.98	106	106	70.0-130			0.000	25
cis-1,3-Dichloropropene	3.75	4.03	4.10	107	109	70.0-130			1.72	25
4-Methyl-2-pentanone (MIBK)	3.75	4.11	4.17	110	111	70.0-139			1.45	25
Toluene	3.75	4.04	4.13	108	110	70.0-130			2.20	25
trans-1,3-Dichloropropene	3.75	3.81	3.94	102	105	70.0-130			3.35	25
1,1,2-Trichloroethane	3.75	3.95	4.07	105	109	70.0-130			2.99	25
Tetrachloroethylene	3.75	4.07	4.10	109	109	70.0-130			0.734	25
Methyl Butyl Ketone	3.75	4.32	4.46	115	119	70.0-149			3.19	25
Dibromochloromethane	3.75	3.99	4.04	106	108	70.0-130			1.25	25
1,2-Dibromoethane	3.75	4.07	3.99	109	106	70.0-130			1.99	25
Chlorobenzene	3.75	4.04	4.04	108	108	70.0-130			0.000	25
Ethylbenzene	3.75	4.21	4.15	112	111	70.0-130			1.44	25

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3518305-1 04/13/20 05:31 • (LCSD) R3518305-2 04/13/20 06:09

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	8.50	8.30	113	111	70.0-130			2.38	25
o-Xylene	3.75	4.14	4.14	110	110	70.0-130			0.000	25
Styrene	3.75	4.24	4.19	113	112	70.0-130			1.19	25
Bromoform	3.75	4.05	4.00	108	107	70.0-130			1.24	25
1,1,2,2-Tetrachloroethane	3.75	4.16	4.10	111	109	70.0-130			1.45	25
4-Ethyltoluene	3.75	4.30	4.21	115	112	70.0-130			2.12	25
1,3,5-Trimethylbenzene	3.75	4.24	4.16	113	111	70.0-130			1.90	25
1,2,4-Trimethylbenzene	3.75	4.34	4.20	116	112	70.0-130			3.28	25
1,3-Dichlorobenzene	3.75	4.21	4.07	112	109	70.0-130			3.38	25
1,4-Dichlorobenzene	3.75	4.34	4.33	116	115	70.0-130			0.231	25
Benzyl Chloride	3.75	4.38	4.40	117	117	70.0-152			0.456	25
1,2-Dichlorobenzene	3.75	4.13	4.17	110	111	70.0-130			0.964	25
1,2,4-Trichlorobenzene	3.75	4.31	4.19	115	112	70.0-160			2.82	25
Hexachloro-1,3-butadiene	3.75	3.95	3.93	105	105	70.0-151			0.508	25
Naphthalene	3.75	4.40	4.19	117	112	70.0-159			4.89	25
Allyl Chloride	3.75	4.04	4.29	108	114	70.0-130			6.00	25
2-Chlorotoluene	3.75	4.19	4.04	112	108	70.0-130			3.65	25
Methyl Methacrylate	3.75	4.01	3.94	107	105	70.0-130			1.76	25
Tetrahydrofuran	3.75	4.09	4.10	109	109	70.0-137			0.244	25
2,2,4-Trimethylpentane	3.75	4.41	4.31	118	115	70.0-130			2.29	25
Vinyl Bromide	3.75	4.40	4.25	117	113	70.0-130			3.47	25
Isopropylbenzene	3.75	4.32	4.27	115	114	70.0-130			1.16	25
(S) 1,4-Bromofluorobenzene				102	102	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3518547-3 04/14/20 07:16

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Tetrachloroethylene	U		0.0497	0.200
m&p-Xylene	U		0.0946	0.400
(S) 1,4-Bromofluorobenzene	92.8			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3518547-1 04/14/20 05:51 • (LCSD) R3518547-2 04/14/20 06:34

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Tetrachloroethylene	3.75	4.30	4.37	115	117	70.0-130			1.61	25
m&p-Xylene	7.50	8.88	8.96	118	119	70.0-130			0.897	25
(S) 1,4-Bromofluorobenzene				96.9	97.4	60.0-140				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

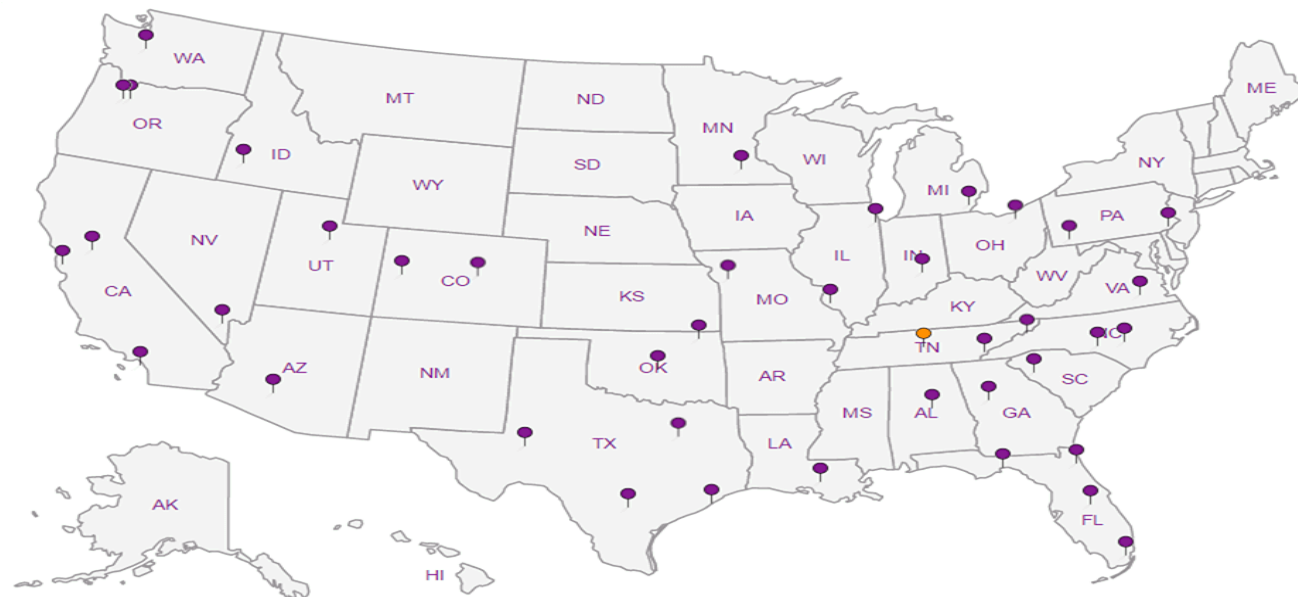
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Apex Companies, LLC - Portland, OR 600 Stewart St Ste 400 Seattle WA 98101 Report to: Jie Xu						Billing Information: Accounts Payable 3015 SW First Ave. Portland, OR 97201-4707						Pres Chk		Analysis / Container / Preservative										Chain of Custody Page 1 of 1	
						Email To: jfoxwell@apexc.com;kelsi.evans@apexc.com;ji																		 Pace Analytical® National Center for Testing & Innovation	
Project Description: CLAREMONT				City/State Collected: EVERETT, WA		Please Circle: PT MT CT ET																12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Phone: 503-924-4704 Fax: 503-943-6357				Client Project # PECO_2018		Lab Project # ASHCREPOR-CLAREMONT																SDG # L1708063			
Collected by (print): J GUILLOTTE				Site/Facility ID #		P.O. #																G196			
Collected by (signature): [Signature]				Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #																Acctnum: ASHCREPOR			
Immediately Packed on Ice N ☒ Y ☐						Date Results Needed																Template: T165203			
						No. of Cntrs																Prelogin: P763502			
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time															PB: CS6-03/20/20					
																		Shipped Via: FedEX Standard							
																		Remarks Sample # (lab only)							
SS-WB-3	G	Air	-	4/10/2020	1146	1															CAN# 5066	-C1			
SS-WB-4		Air	-		1151	1															60713	-02			
SS-BC-3		Air	-		1036	1															OK CAN# 8784	-C3			
SS-BC-4		Air	-		1041	1															8757	-C4			
SS-BC-2		"	-		1041	1															9291	-C5			
						TO-15 Summa VOCs																			
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____						Remarks: pH _____ Temp _____ Flow _____ Other _____														Samples returned via: ☐ UPS ☐ FedEx ☐ Courier _____					
						Tracking #																			
Relinquished by: (Signature) [Signature]				Date: 4/10/2020		Time: 1315		Received by: (Signature)				Trip Blank Received: Yes ☒ No ☐ HCL / MeOH TBR				COC Seal Present/Intact: NP ☐ Y ☒ N ☐ COC Signed/Accurate: ☒ Y ☐ N ☐ Bottles arrive intact: ☒ Y ☐ N ☐ Correct bottles used: ☒ Y ☐ N ☐ Sufficient volume sent: ☒ Y ☐ N ☐ If Applicable VOA Zero Headspace: ☐ Y ☒ N ☐ Preservation Correct/Checked: ☐ Y ☒ N ☐ RAD Screen <0.5 mR/hr: ☐ Y ☒ N ☐									
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)				Temp: 61.5 °C Bottles Received: 5				If preservation required by Login: Date/Time									
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature) [Signature]				Date: 4/11/20 Time: 8:30				Hold: Condition: NCF ☒									

ANALYTICAL REPORT

September 09, 2020

Revised Report

Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1251184
Samples Received: 08/15/2020
Project Number: PECO-2020
Description: Claremont

Report To: Jie Xu
600 Stewart St
Ste 400
Seattle, WA 98101

Entire Report Reviewed By:



Jordan N Zito
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc





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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SS-BC-2 L1251184-01 Air

				Collected by J Guillotte	Collected date/time 08/14/20 08:43	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 11:11	08/21/20 11:11	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1531340	10	08/24/20 18:17	08/24/20 18:17	CAW	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

SS-BC-3 L1251184-02 Air

				Collected by J Guillotte	Collected date/time 08/14/20 09:05	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 11:51	08/21/20 11:51	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1531340	10	08/24/20 18:58	08/24/20 18:58	CAW	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

SS-BC-4 L1251184-03 Air

				Collected by J Guillotte	Collected date/time 08/14/20 08:39	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 12:30	08/21/20 12:30	CAW	Mt. Juliet, TN

⁷ Gl

⁸ Al

SS-BC-5 L1251184-04 Air

				Collected by J Guillotte	Collected date/time 08/14/20 08:54	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 13:10	08/21/20 13:10	CAW	Mt. Juliet, TN

⁹ Sc

SS-BC-6 L1251184-05 Air

				Collected by J Guillotte	Collected date/time 08/14/20 08:57	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 13:51	08/21/20 13:51	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1531340	10	08/24/20 19:39	08/24/20 19:39	CAW	Mt. Juliet, TN

SS-PM-2 L1251184-06 Air

				Collected by J Guillotte	Collected date/time 08/14/20 12:26	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 14:31	08/21/20 14:31	CAW	Mt. Juliet, TN

SS-TZ-2 L1251184-07 Air

				Collected by J Guillotte	Collected date/time 08/14/20 13:06	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 15:11	08/21/20 15:11	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1531440	5	08/25/20 02:25	08/25/20 02:25	DAH	Mt. Juliet, TN

SS-TZ-3 L1251184-08 Air

				Collected by J Guillotte	Collected date/time 08/14/20 12:37	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 15:51	08/21/20 15:51	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1531340	10	08/24/20 20:19	08/24/20 20:19	CAW	Mt. Juliet, TN

ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO-2020

SDG:

L1251184

DATE/TIME:

09/09/20 12:29

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SS-HN-2 L1251184-09 Air

				Collected by J Guillotte	Collected date/time 08/14/20 09:39	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 16:31	08/21/20 16:31	CAW	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

SS-WB-2 L1251184-10 Air

				Collected by J Guillotte	Collected date/time 08/14/20 10:07	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 17:10	08/21/20 17:10	CAW	Mt. Juliet, TN

⁴ Cn

⁵ Sr

SS-WB-3 L1251184-11 Air

				Collected by J Guillotte	Collected date/time 08/14/20 09:55	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 17:51	08/21/20 17:51	CAW	Mt. Juliet, TN

⁶ Qc

⁷ Gl

SS-WB-4 L1251184-12 Air

				Collected by J Guillotte	Collected date/time 08/14/20 10:00	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 18:32	08/21/20 18:32	CAW	Mt. Juliet, TN

⁸ Al

⁹ Sc

SS-WB-5 L1251184-13 Air

				Collected by J Guillotte	Collected date/time 08/14/20 10:15	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 19:11	08/21/20 19:11	CAW	Mt. Juliet, TN

SS-WB-6 L1251184-14 Air

				Collected by J Guillotte	Collected date/time 08/14/20 10:11	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 19:52	08/21/20 19:52	CAW	Mt. Juliet, TN

SS-JM-2 L1251184-15 Air

				Collected by J Guillotte	Collected date/time 08/14/20 11:40	Received date/time 08/15/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1530044	1	08/21/20 20:33	08/21/20 20:33	CAW	Mt. Juliet, TN

ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO-2020

SDG:

L1251184

DATE/TIME:

09/09/20 12:29

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jordan N Zito
Project Manager

Report Revision History

Level II Report - Version 1: 08/25/20 17:03





Collected date/time: 08/14/20 08:43

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	31.5	74.9		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	0.247	0.789		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	1.49	7.25		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	0.214	0.442		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	0.270	1.07		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	30.3	57.1		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.419	2.35		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.660	3.26		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.211	0.733		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	7.70	22.7		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	2.11	3.63		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	2.00	13.6	268	1820		10	WG1531340
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.760	2.86		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/14/20 08:43

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	7.00	37.5		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.445	1.93		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		88.5				WG1531340

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.54	3.66		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	0.501	2.44		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	14.8	27.9		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.258	1.45		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.752	3.72		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	2.00	13.6	63.8	433		10	WG1531340
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.208	0.784		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	3.27	17.5		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		86.7				WG1531340

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

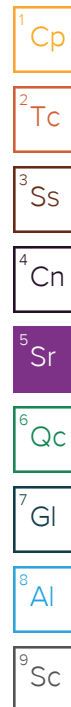
8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.48	3.52		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	3.77	18.3		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	10.7	20.2		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.229	1.29		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.534	2.64		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	4.16	28.2		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Collected date/time: 08/14/20 08:39

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	0.900	4.82		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.8				WG1530044

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

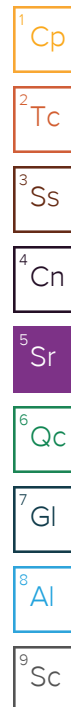
8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	3.39	8.06		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	40.4	76.2		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.244	1.37		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.728	3.60		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	56.9	386		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	1.21	4.56		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	1.92	10.3		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.234	1.09		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.537	2.33		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1530044

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

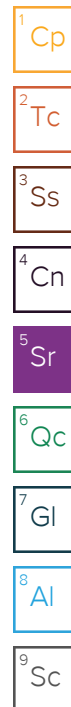
9

Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.34	5.56		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	15.0	28.3		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.339	1.91		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.39	6.87		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	2.00	13.6	94.9	644		10	WG1531340
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.458	1.73		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	2.32	12.4		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		88.9				WG1531340

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

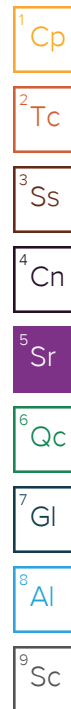
8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	24.3	57.7		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	0.794	3.86		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	358	675	E	1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	0.208	0.902		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.225	1.26		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.946	4.68		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	5.65	13.9		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	47.6	323		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.477	1.80		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.714	3.10		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	0.231	1.00		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1530044

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	6.25	14.9	ND	ND		5	WG1531440
Allyl chloride	107-05-1	76.53	1.00	3.13	ND	ND		5	WG1531440
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	1.00	3.88	ND	ND		5	WG1531440
1,3-Butadiene	106-99-0	54.10	10.0	22.1	ND	ND		5	WG1531440
Carbon disulfide	75-15-0	76.10	1.00	3.11	ND	ND		5	WG1531440
Carbon tetrachloride	56-23-5	154	1.00	6.30	ND	ND		5	WG1531440
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	1.00	2.64	ND	ND		5	WG1531440
Chloroform	67-66-3	119	1.00	4.87	ND	ND		5	WG1531440
Chloromethane	74-87-3	50.50	1.00	2.07	ND	ND		5	WG1531440
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	1.00	3.44	ND	ND		5	WG1531440
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	1.00	4.01	ND	ND		5	WG1531440
1,1-Dichloroethene	75-35-4	96.90	1.00	3.96	ND	ND		5	WG1531440
cis-1,2-Dichloroethene	156-59-2	96.90	1.00	3.96	ND	ND		5	WG1531440
trans-1,2-Dichloroethene	156-60-5	96.90	1.00	3.96	ND	ND		5	WG1531440
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	3.15	5.94	24.1	45.4		5	WG1531440
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	1.00	5.62	ND	ND		5	WG1531440
Dichlorodifluoromethane	75-71-8	120.92	1.00	4.95	1.45	7.17		5	WG1531440
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	1.00	7.66	ND	ND		5	WG1531440
1,2-Dichlorotetrafluoroethane	76-14-2	171	1.00	6.99	ND	ND		5	WG1531440
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	3.15	11.1	ND	ND		5	WG1531440
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	1.00	3.47	ND	ND		5	WG1531440
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	6.25	18.4	ND	ND		5	WG1531440
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	1.00	3.60	ND	ND		5	WG1531440
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	6.25	15.4	ND	ND		5	WG1531440
Propene	115-07-1	42.10	2.00	3.44	ND	ND		5	WG1531440
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	13.6	92.3		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	1.00	2.95	ND	ND		5	WG1531440
Toluene	108-88-3	92.10	0.200	0.753	0.494	1.86		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	1.00	5.44	ND	ND		5	WG1531440
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	0.333	1.78		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	1.00	4.67	ND	ND		5	WG1531440
Vinyl chloride	75-01-4	62.50	1.00	2.56	ND	ND		5	WG1531440
Vinyl Bromide	593-60-2	106.95	1.00	4.37	ND	ND		5	WG1531440
Vinyl acetate	108-05-4	86.10	1.00	3.52	ND	ND		5	WG1531440
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1531440

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

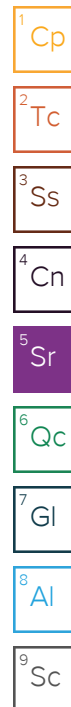
8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.55	10.8		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	36.6	69.0		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.316	1.78		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.42	7.02		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	2.00	13.6	84.4	573		10	WG1531340
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.705	2.66		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	0.236	1.26		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.441	1.91		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		88.0				WG1531340

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	129	307	E	1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	6.79	33.0		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	46.5	87.7		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.269	1.51		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.11	5.49		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	3.83	15.7		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	47.7	324		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	1.07	4.03		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	0.231	1.24		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1530044

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.62	15.7		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	0.267	0.853		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	0.394	0.814		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	33.1	62.4		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.250	1.40		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.680	3.36		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	0.260	1.06		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.355	1.23		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	1.26	3.10		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	56.3	382		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	1.91	7.19		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/14/20 10:07

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.425	1.99		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.567	2.46		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.1				WG1530044

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

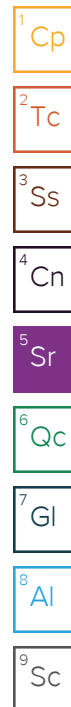
⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.85	6.77		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	0.343	1.67		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	6.51	12.3		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.274	1.54		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.642	3.18		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	58.8	399		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Collected date/time: 08/14/20 09:55

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1530044

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.48	10.6		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	1.64	7.98		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	12.2	23.0		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.271	1.52		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.574	2.84		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	67.3	457		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/14/20 10:00

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.3				WG1530044

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.67	13.5		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	0.262	0.837		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	0.245	1.19		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	32.0	60.3		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.349	1.96		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.606	3.00		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.37	4.76		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	5.11	12.6		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	20.5	139		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	1.93	7.27		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/14/20 10:15

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	1.49	7.98		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	0.417	1.81		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1530044

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

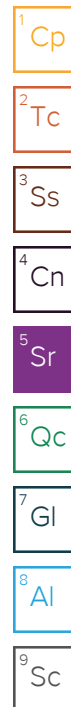
8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.00	14.3		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	0.217	0.879		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	0.209	0.838		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	16.2	30.5		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.251	1.41		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.628	3.11		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.233	0.954		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	28.4	193		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.486	1.83		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044





Collected date/time: 08/14/20 10:11

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1530044

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.03	14.3		1	WG1530044
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1530044
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1530044
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1530044
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1530044
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1530044
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1530044
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1530044
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1530044
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1530044
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1530044
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1530044
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1530044
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1530044
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1530044
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1530044
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1530044
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1530044
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1530044
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1530044
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1530044
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1530044
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1530044
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1530044
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1530044
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1530044
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1530044
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1530044
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1530044
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1530044
Ethanol	64-17-5	46.10	0.630	1.19	34.5	65.0		1	WG1530044
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1530044
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1530044
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.265	1.49		1	WG1530044
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.06	5.24		1	WG1530044
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1530044
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1530044
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1530044
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1530044
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1530044
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1530044
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1530044
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1530044
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1530044
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1530044
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.394	1.61		1	WG1530044
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1530044
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1530044
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1530044
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1530044
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1530044
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1530044
Tetrachloroethylene	127-18-4	166	0.200	1.36	91.1	619		1	WG1530044
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1530044
Toluene	108-88-3	92.10	0.200	0.753	0.241	0.908		1	WG1530044
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1530044

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/14/20 11:40

L1251184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1530044
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1530044
Trichloroethylene	79-01-6	131	0.200	1.07	0.647	3.47		1	WG1530044
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1530044
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1530044
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1530044
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1530044
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1530044
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1530044
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1530044
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1530044
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1530044

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3563053-3 08/21/20 09:41

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3563053-3 08/21/20 09:41

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	99.1			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3563053-1 08/21/20 08:24 • (LCSD) R3563053-2 08/21/20 09:03

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.58	3.68	95.5	98.1	55.0-148			2.75	25
Propene	3.75	3.40	3.49	90.7	93.1	64.0-144			2.61	25
Dichlorodifluoromethane	3.75	3.71	3.85	98.9	103	64.0-139			3.70	25
1,2-Dichlorotetrafluoroethane	3.75	3.72	3.86	99.2	103	70.0-130			3.69	25
Chloromethane	3.75	3.74	3.82	99.7	102	70.0-130			2.12	25

[L1251184-01,02,03,04,05,06,07,08,09,10,11,12,13,14,15](#)

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3563053-1 08/21/20 08:24 • (LCSD) R3563053-2 08/21/20 09:03

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Vinyl chloride	3.75	3.59	3.77	95.7	101	70.0-130			4.89	25
1,3-Butadiene	3.75	3.38	3.63	90.1	96.8	70.0-130			7.13	25
Bromomethane	3.75	3.55	3.71	94.7	98.9	70.0-130			4.41	25
Chloroethane	3.75	3.64	3.77	97.1	101	70.0-130			3.51	25
Trichlorofluoromethane	3.75	3.69	3.77	98.4	101	70.0-130			2.14	25
1,1,2-Trichlorotrifluoroethane	3.75	3.68	3.82	98.1	102	70.0-130			3.73	25
1,1-Dichloroethene	3.75	3.72	3.83	99.2	102	70.0-130			2.91	25
1,1-Dichloroethane	3.75	3.69	3.79	98.4	101	70.0-130			2.67	25
Acetone	3.75	3.65	3.77	97.3	101	70.0-130			3.23	25
2-Propanol	3.75	3.71	3.82	98.9	102	70.0-139			2.92	25
Carbon disulfide	3.75	3.74	3.86	99.7	103	70.0-130			3.16	25
Methylene Chloride	3.75	3.61	3.69	96.3	98.4	70.0-130			2.19	25
MTBE	3.75	3.78	3.90	101	104	70.0-130			3.13	25
trans-1,2-Dichloroethene	3.75	3.73	3.85	99.5	103	70.0-130			3.17	25
n-Hexane	3.75	3.79	3.84	101	102	70.0-130			1.31	25
Vinyl acetate	3.75	3.73	3.81	99.5	102	70.0-130			2.12	25
Methyl Ethyl Ketone	3.75	3.75	3.94	100	105	70.0-130			4.94	25
cis-1,2-Dichloroethene	3.75	3.71	3.85	98.9	103	70.0-130			3.70	25
Chloroform	3.75	3.67	3.74	97.9	99.7	70.0-130			1.89	25
Cyclohexane	3.75	3.77	3.84	101	102	70.0-130			1.84	25
1,1,1-Trichloroethane	3.75	3.63	3.73	96.8	99.5	70.0-130			2.72	25
Carbon tetrachloride	3.75	3.72	3.76	99.2	100	70.0-130			1.07	25
Benzene	3.75	3.58	3.71	95.5	98.9	70.0-130			3.57	25
1,2-Dichloroethane	3.75	3.57	3.67	95.2	97.9	70.0-130			2.76	25
Heptane	3.75	3.57	3.66	95.2	97.6	70.0-130			2.49	25
Trichloroethylene	3.75	3.58	3.69	95.5	98.4	70.0-130			3.03	25
1,2-Dichloropropane	3.75	3.59	3.68	95.7	98.1	70.0-130			2.48	25
1,4-Dioxane	3.75	3.64	3.80	97.1	101	70.0-140			4.30	25
Bromodichloromethane	3.75	3.56	3.67	94.9	97.9	70.0-130			3.04	25
cis-1,3-Dichloropropene	3.75	3.55	3.70	94.7	98.7	70.0-130			4.14	25
4-Methyl-2-pentanone (MIBK)	3.75	3.58	3.69	95.5	98.4	70.0-139			3.03	25
Toluene	3.75	3.61	3.71	96.3	98.9	70.0-130			2.73	25
trans-1,3-Dichloropropene	3.75	3.57	3.65	95.2	97.3	70.0-130			2.22	25
1,1,2-Trichloroethane	3.75	3.58	3.68	95.5	98.1	70.0-130			2.75	25
Tetrachloroethylene	3.75	3.46	3.57	92.3	95.2	70.0-130			3.13	25
Methyl Butyl Ketone	3.75	3.58	3.70	95.5	98.7	70.0-149			3.30	25
Dibromochloromethane	3.75	3.53	3.64	94.1	97.1	70.0-130			3.07	25
1,2-Dibromoethane	3.75	3.58	3.71	95.5	98.9	70.0-130			3.57	25
Chlorobenzene	3.75	3.58	3.69	95.5	98.4	70.0-130			3.03	25
Ethylbenzene	3.75	3.74	3.87	99.7	103	70.0-130			3.42	25

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3563053-1 08/21/20 08:24 • (LCSD) R3563053-2 08/21/20 09:03

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
m&p-Xylene	7.50	7.56	7.75	101	103	70.0-130			2.48	25
o-Xylene	3.75	3.68	3.76	98.1	100	70.0-130			2.15	25
Styrene	3.75	3.82	3.89	102	104	70.0-130			1.82	25
Bromoform	3.75	3.53	3.59	94.1	95.7	70.0-130			1.69	25
1,1,2,2-Tetrachloroethane	3.75	3.68	3.67	98.1	97.9	70.0-130			0.272	25
4-Ethyltoluene	3.75	3.70	3.83	98.7	102	70.0-130			3.45	25
1,3,5-Trimethylbenzene	3.75	3.80	3.92	101	105	70.0-130			3.11	25
1,2,4-Trimethylbenzene	3.75	3.76	3.86	100	103	70.0-130			2.62	25
1,3-Dichlorobenzene	3.75	3.55	3.62	94.7	96.5	70.0-130			1.95	25
1,4-Dichlorobenzene	3.75	3.62	3.69	96.5	98.4	70.0-130			1.92	25
Benzyl Chloride	3.75	3.49	3.58	93.1	95.5	70.0-152			2.55	25
1,2-Dichlorobenzene	3.75	3.56	3.63	94.9	96.8	70.0-130			1.95	25
1,2,4-Trichlorobenzene	3.75	3.65	3.67	97.3	97.9	70.0-160			0.546	25
Hexachloro-1,3-butadiene	3.75	3.48	3.49	92.8	93.1	70.0-151			0.287	25
Naphthalene	3.75	3.68	3.77	98.1	101	70.0-159			2.42	25
Allyl Chloride	3.75	3.40	3.56	90.7	94.9	70.0-130			4.60	25
2-Chlorotoluene	3.75	3.68	3.79	98.1	101	70.0-130			2.95	25
Methyl Methacrylate	3.75	3.63	3.69	96.8	98.4	70.0-130			1.64	25
Tetrahydrofuran	3.75	3.67	3.78	97.9	101	70.0-137			2.95	25
2,2,4-Trimethylpentane	3.75	3.82	3.93	102	105	70.0-130			2.84	25
Vinyl Bromide	3.75	3.69	3.70	98.4	98.7	70.0-130			0.271	25
Isopropylbenzene	3.75	3.78	3.87	101	103	70.0-130			2.35	25
(S) 1,4-Bromofluorobenzene				100	99.7	60.0-140				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3563386-3 08/24/20 09:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Tetrachloroethylene	U		0.0814	0.200
(S) 1,4-Bromofluorobenzene	86.2			60.0-140

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3563386-1 08/24/20 08:34 • (LCSD) R3563386-2 08/24/20 09:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Tetrachloroethylene	3.75	3.25	3.41	86.7	90.9	70.0-130			4.80	25
(S) 1,4-Bromofluorobenzene				112	89.6	60.0-140				



Method Blank (MB)

(MB) R3563205-3 08/24/20 12:29

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
Cyclohexane	U		0.0753	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
n-Hexane	U		0.206	0.630
Methylene Chloride	U		0.0979	0.200
2-Butanone (MEK)	U		0.0814	1.25
MTBE	U		0.0647	0.200
2-Propanol	U		0.264	1.25
Propene	0.137	U	0.0932	0.400
Tetrahydrofuran	U		0.0734	0.200
1,1,1-Trichloroethane	U		0.0736	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	101			60.0-140

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3563205-1 08/24/20 10:11 • (LCSD) R3563205-2 08/24/20 11:45

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.18	4.31	111	115	55.0-148			3.06	25
Propene	3.75	4.29	4.48	114	119	64.0-144			4.33	25
Dichlorodifluoromethane	3.75	4.53	4.59	121	122	64.0-139			1.32	25
1,2-Dichlorotetrafluoroethane	3.75	4.52	4.58	121	122	70.0-130			1.32	25
Chloromethane	3.75	4.66	4.84	124	129	70.0-130			3.79	25
Vinyl chloride	3.75	4.71	4.82	126	129	70.0-130			2.31	25
1,3-Butadiene	3.75	4.23	4.41	113	118	70.0-130			4.17	25
Bromomethane	3.75	4.81	4.63	128	123	70.0-130			3.81	25
Chloroethane	3.75	4.36	4.43	116	118	70.0-130			1.59	25
Trichlorofluoromethane	3.75	4.36	4.40	116	117	70.0-130			0.913	25
1,1,2-Trichlorotrifluoroethane	3.75	4.34	4.37	116	117	70.0-130			0.689	25
1,1-Dichloroethene	3.75	4.39	4.45	117	119	70.0-130			1.36	25
1,1-Dichloroethane	3.75	4.41	4.56	118	122	70.0-130			3.34	25
Acetone	3.75	4.42	4.50	118	120	70.0-130			1.79	25
2-Propanol	3.75	4.33	4.51	115	120	70.0-139			4.07	25
Carbon disulfide	3.75	4.39	4.47	117	119	70.0-130			1.81	25
Methylene Chloride	3.75	4.49	4.63	120	123	70.0-130			3.07	25
MTBE	3.75	4.40	4.48	117	119	70.0-130			1.80	25
trans-1,2-Dichloroethene	3.75	4.34	4.43	116	118	70.0-130			2.05	25
n-Hexane	3.75	4.37	4.44	117	118	70.0-130			1.59	25
Vinyl acetate	3.75	4.30	4.61	115	123	70.0-130			6.96	25
Methyl Ethyl Ketone	3.75	4.37	4.45	117	119	70.0-130			1.81	25
cis-1,2-Dichloroethene	3.75	4.40	4.39	117	117	70.0-130			0.228	25
Chloroform	3.75	4.26	4.32	114	115	70.0-130			1.40	25
Cyclohexane	3.75	4.35	4.27	116	114	70.0-130			1.86	25
1,1,1-Trichloroethane	3.75	4.23	4.34	113	116	70.0-130			2.57	25
Carbon tetrachloride	3.75	4.18	4.26	111	114	70.0-130			1.90	25
Allyl Chloride	3.75	4.35	4.30	116	115	70.0-130			1.16	25
Tetrahydrofuran	3.75	4.41	4.48	118	119	70.0-137			1.57	25
2,2,4-Trimethylpentane	3.75	4.37	4.47	117	119	70.0-130			2.26	25
Vinyl Bromide	3.75	4.31	4.37	115	117	70.0-130			1.38	25
(S) 1,4-Bromofluorobenzene				99.4	99.8	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

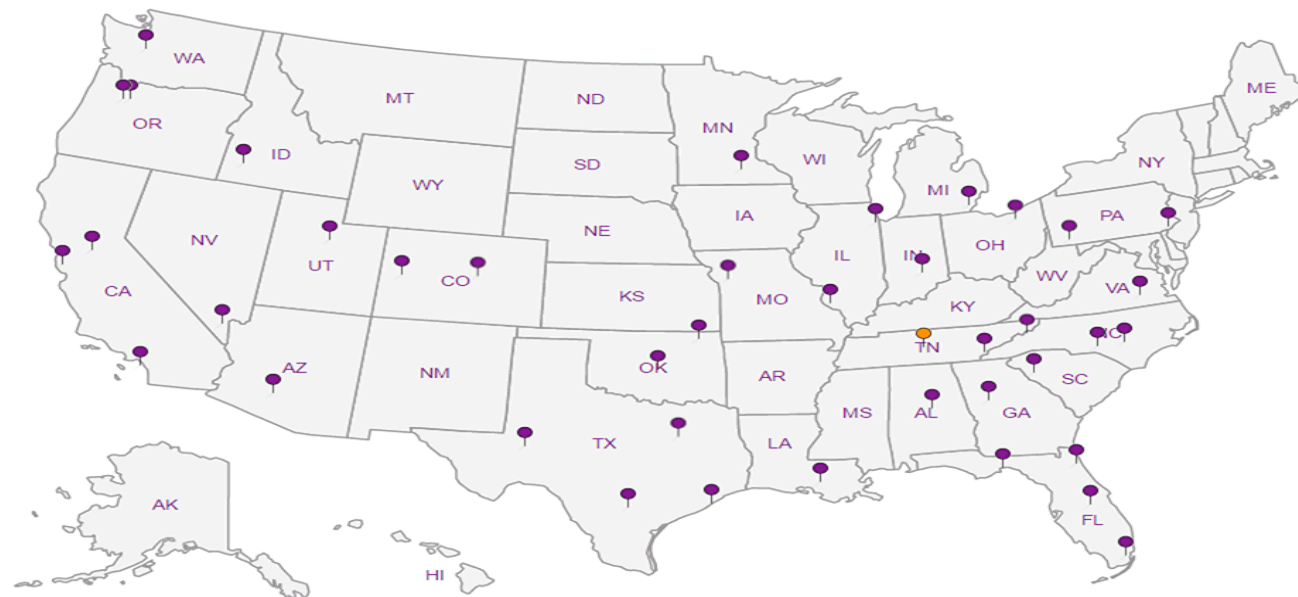
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Apex Companies, LLC - Portland, OR

600 Stewart St
Ste 400
Seattle WA 98101

Report to:
Jie Xu

Billing Information:

Accounts Payable
3015 SW First Ave.
Portland, OR 97201-4707

Email To:
jfoxwell@apexcos.com; kelsi.evans@apexcos.co

Project Description:

CLAREMONT

City/State

Collected: EVERETT, WA

Please Circle:

PT MT CT ET

Phone: 503-924-4704

Client Project #

PECO-2020

Lab Project #

ASHCREPOR-CLAREMONT

Collected by (print):

J GUILLOTTE

Site/Facility ID #

P.O. #

PECO_2018-01

Collected by (signature):

Rush? (Lab MUST Be Notified)

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Immediately
Packed on Ice N ☒ Y ___

No. of Cntrs

VOCs TO-15 Summa

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative	Chain of Custody
SS-BC-2	G	Air	-	8/14/22	0843	1		
SS-BC-3		Air	-		0905	1		
SS-BC-4		Air	-		0859	1		
SS-BC-5		Air	-		0854	1		
SS-BC-6		Air	-		0857	1		
SS-BN-2 SS-PM-2		Air	-		1224	1		
SS-WB-2 SS-TB-2		Air	-		1306	1		
SS-WB-3 SS-TB-3		Air	-		1237	1		
SS-WB-4		Air	-					
SS-WB-5		Air	-					

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH ____ Temp ____

Flow ____ Other ____

Samples returned via:

___ UPS ___ FedEx ___ Courier

Tracking #

1411 1762 7092, 3925, 3447, 3936

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N
RAD Screen <0.5 mR/hr: ☒ Y ☐ N

Relinquished by: (Signature)

Date:

8/14/22

Time:

1400

Received by: (Signature)

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C

Bottles Received: 15

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

8/15/22 9:00

Hold:

Condition:

NCF ☒ OK

Apex Companies, LLC - Portland, OR

600 Stewart St
Ste 400
Seattle WA 98101

Report to:
Jie Xu

Project Description:
CLAREMONT

Phone: 503-924-4704

Collected by (print):
J WILLIAMS

Collected by (signature):

Immediately
Packed on Ice N ☒ Y ☐

Billing Information:

Accounts Payable
3015 SW First Ave.
Portland, OR 97201-4707

Email To:
jfoxwell@apexcos.com;kelsi.evans@apexcos.com

City/State
Collected: EVANET, WA

Please Circle:
PT MT CT ET

Client Project #

PECO-2020

Lab Project #

ASHCREPOR-CLAREMONT

Site/Facility ID #

P.O. #

PECO_2018-01

Rush? (Lab MUST Be Notified)

☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Date Results Needed

No.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

VOCs TO-15 Summa

SS-BN-2

G

Air

-

8/14/2020

0939

1

SS-WB-2

1

Air

-

1007

1

SS-WB-3

1

Air

-

0955

1

SS-WB-4

1

Air

-

1020

1

SS-WB-5

1

Air

-

1015

1

SS-WB-6

1

Air

-

1011

1

SS-DM-2

1

11

-

1140

1

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

☐ UPS ☐ FedEx ☐ Courier

Tracking #

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N
RAD Screen <0.5 mR/hr: ☒ Y ☐ N

Relinquished by: (Signature)

Date:

8/14/2020

Time:

1400

Received by: (Signature)

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received: 15

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 8/13/20 Time: 5:00

Hold:

Condition:
NCF / OK

Chain of Custody Page 2 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # C125184

Table #

Acctnum: ASHCREPOR

Template: T171960

Prelogin: P789368

PM: 110 - Brian Ford

PB: CS6 08/13/20

Shipped Via: FedEx Saver

Remarks

Sample # (lab only)

CH# 10852

-09

1133

-10

8515

-71

10559

-72

6903

-73

8535

-74

12094

-75

From: [Jordan Zito](#)
To: [Jordan Zito](#)
Subject: Name change_Claremont
Date: Wednesday, September 9, 2020 11:59:23 AM

From: Jie Xu <Jie.Xu@apexcoss.com>
Sent: Tuesday, September 8, 2020 4:51 PM
To: Brian Ford <BFord@pacenational.com>
Cc: Kelsi Evans <Kelsi.Evans@apexcoss.com>
Subject: Name change_Claremont

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Brian,

The sample ID "SS-BN-2" should be ""SS-HN-2". Can you please help provide an update report?

Thanks,
Jie



ENR Top 30 All-Environmental Firm



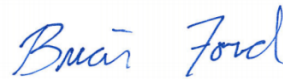
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Apex Companies, LLC - Portland, OR

Sample Delivery Group: L1253747
Samples Received: 08/23/2020
Project Number: PECO_2020
Description: Claremont Village

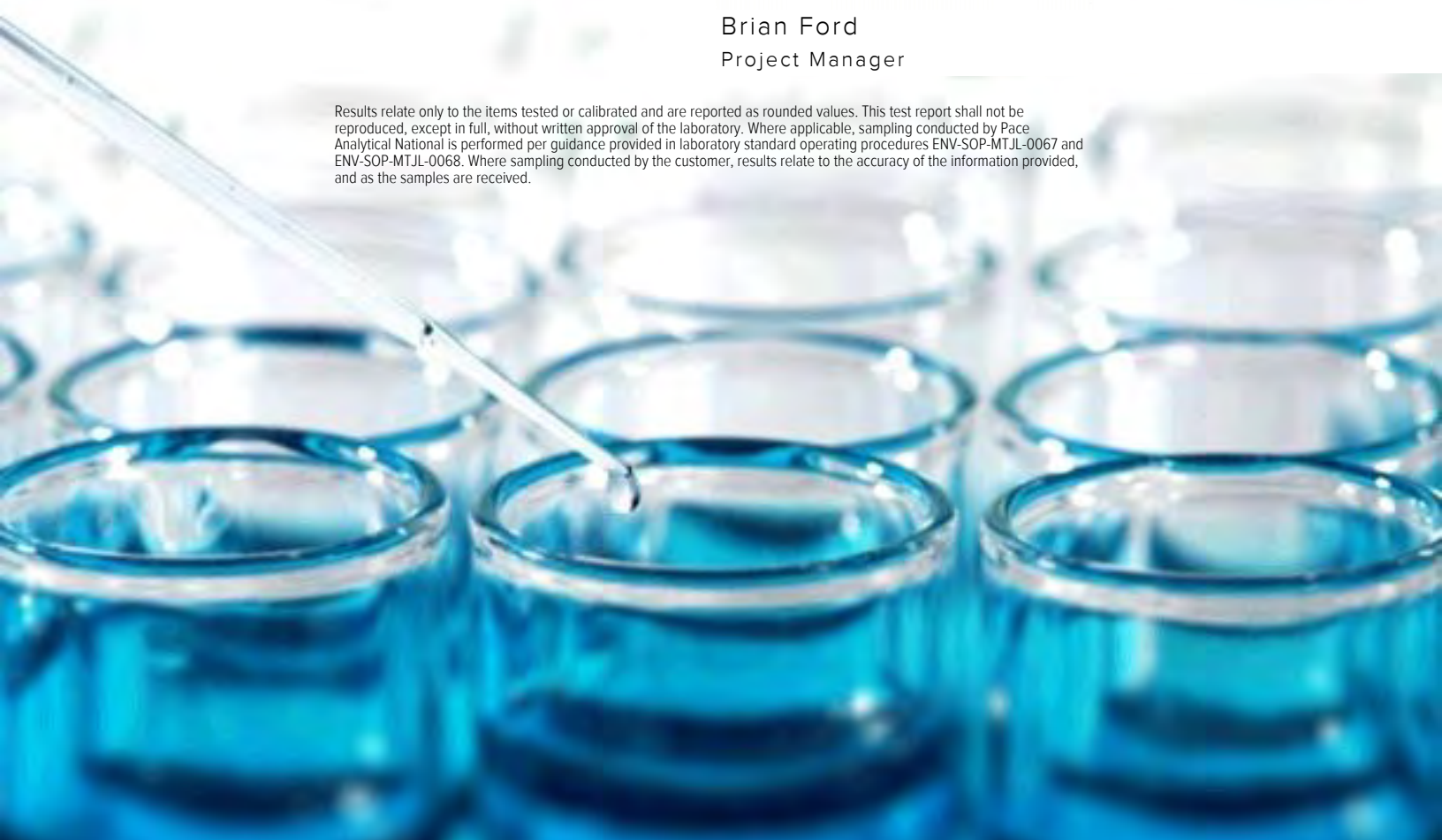
Report To: Jie Xu
600 Stewart St
Ste 400
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SS-BC-2 L1253747-01 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:04	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 12:19	08/27/20 12:19	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	50	08/28/20 12:25	08/28/20 12:25	DAH	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

SS-BC-3 L1253747-02 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:08	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 12:58	08/27/20 12:58	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	10	08/28/20 11:06	08/28/20 11:06	DAH	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

SS-BC-4 L1253747-03 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:01	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 17:24	08/27/20 17:24	DAH	Mt. Juliet, TN

⁷ Gl

⁸ Al

SS-BC-5 L1253747-04 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:14	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 18:03	08/27/20 18:03	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	10	08/28/20 11:46	08/28/20 11:46	DAH	Mt. Juliet, TN

⁹ Sc

SS-BC-6 L1253747-05 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:11	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 18:43	08/27/20 18:43	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	5	08/28/20 11:03	08/28/20 11:03	DAH	Mt. Juliet, TN

SS-PM-2 L1253747-06 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 11:49	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 19:21	08/27/20 19:21	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	50	08/28/20 13:05	08/28/20 13:05	DAH	Mt. Juliet, TN

SS-TZ-2 L1253747-07 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 11:39	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 20:00	08/27/20 20:00	DAH	Mt. Juliet, TN

ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO_2020

SDG:

L1253747

DATE/TIME:

08/31/20 10:26

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SS-TZ-3 L1253747-08 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 11:44	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	5	08/28/20 11:44	08/28/20 11:44	DAH	Mt. Juliet, TN

SS-HN-2 L1253747-09 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 09:57	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 21:17	08/27/20 21:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	10	08/28/20 13:45	08/28/20 13:45	DAH	Mt. Juliet, TN

SS-WB-2 L1253747-10 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 10:25	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 21:56	08/27/20 21:56	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	5	08/28/20 12:25	08/28/20 12:25	DAH	Mt. Juliet, TN

SS-WB-3 L1253747-11 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 10:52	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/27/20 22:36	08/27/20 22:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	1	08/28/20 13:09	08/28/20 13:09	DAH	Mt. Juliet, TN

SS-WB-4 L1253747-12 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 10:41	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	5	08/28/20 13:49	08/28/20 13:49	DAH	Mt. Juliet, TN

SS-WB-5 L1253747-13 Air

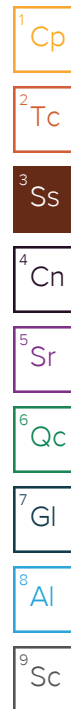
				Collected by J. Guillotte	Collected date/time 08/21/20 10:59	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	1	08/28/20 14:32	08/28/20 14:32	DAH	Mt. Juliet, TN

SS-WB-6 L1253747-14 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 10:53	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/28/20 00:35	08/28/20 00:35	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534118	1	08/28/20 15:15	08/28/20 15:15	DAH	Mt. Juliet, TN

SS-JM-2 L1253747-15 Air

				Collected by J. Guillotte	Collected date/time 08/21/20 11:25	Received date/time 08/23/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1533449	1	08/28/20 01:15	08/28/20 01:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1534120	10	08/28/20 14:25	08/28/20 14:25	DAH	Mt. Juliet, TN



ACCOUNT:

Apex Companies, LLC - Portland, OR

PROJECT:

PECO_2020

SDG:

L1253747

DATE/TIME:

08/31/20 10:26

PAGE:

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

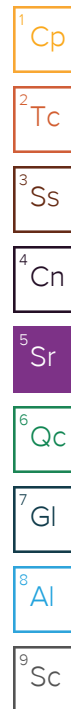
⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	ND	ND		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	2.15	10.5		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	7.98	15.0		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.364	2.05		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.44	7.12		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	10.0	67.9	270	1830		50	WG1534120
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449



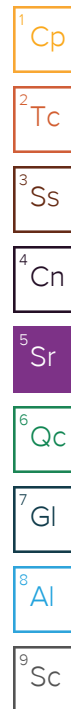


Collected date/time: 08/21/20 09:04

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	11.2	60.0		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.3				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		75.3				WG1534120





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.49	3.54		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	1.06	5.16		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	13.1	24.7		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.413	2.32		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.90	9.40		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	2.00	13.6	137	930		10	WG1534120
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/21/20 09:08

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.236	1.28		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	5.19	27.8		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.8				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		73.6				WG1534120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	3.66	8.70		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	5.96	29.0		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	0.294	1.77		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	0.818	1.54		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.363	2.04		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.19	5.89		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.01	3.51		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	0.200	1.36	31.7	215		1	WG1533449
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	1.16	4.37		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	0.711	3.81		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.6				WG1533449

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.30	12.6		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.539	1.11		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	44.2	83.3		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.456	2.56		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	2.00	9.89		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	5.18	12.7		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	2.00	13.6	76.9	522		10	WG1534120
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

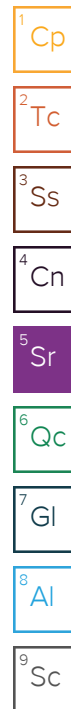


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Volatile Organic Compounds (MS) by Method TO-15

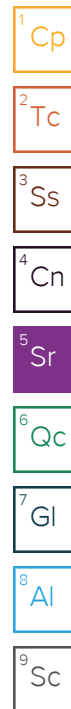
Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	4.81	25.8		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		106				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		69.3				WG1534120





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.48	5.89		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	1.00	3.19	ND	ND		5	WG1534118
Benzyl Chloride	100-44-7	127	1.00	5.19	ND	ND		5	WG1534118
Bromodichloromethane	75-27-4	164	1.00	6.71	ND	ND		5	WG1534118
Bromoform	75-25-2	253	3.00	31.0	ND	ND		5	WG1534118
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	1.00	4.62	ND	ND		5	WG1534118
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	1.00	5.15	ND	ND		5	WG1534118
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	1.00	8.51	ND	ND		5	WG1534118
1,2-Dibromoethane	106-93-4	188	1.00	7.69	ND	ND		5	WG1534118
1,2-Dichlorobenzene	95-50-1	147	1.00	6.01	ND	ND		5	WG1534118
1,3-Dichlorobenzene	541-73-1	147	1.00	6.01	ND	ND		5	WG1534118
1,4-Dichlorobenzene	106-46-7	147	1.00	6.01	ND	ND		5	WG1534118
1,2-Dichloroethane	107-06-2	99	1.00	4.05	ND	ND		5	WG1534118
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	1.00	4.62	ND	ND		5	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	1.00	4.54	ND	ND		5	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	1.00	4.54	ND	ND		5	WG1534118
1,4-Dioxane	123-91-1	88.10	1.00	3.60	ND	ND		5	WG1534118
Ethanol	64-17-5	46.10	0.630	1.19	30.0	56.6		1	WG1533449
Ethylbenzene	100-41-4	106	1.00	4.34	ND	ND		5	WG1534118
4-Ethyltoluene	622-96-8	120	1.00	4.91	ND	ND		5	WG1534118
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.477	2.68		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	2.17	10.7		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	1.00	4.09	ND	ND		5	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	3.15	33.6	ND	ND		5	WG1534118
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	1.00	4.92	ND	ND		5	WG1534118
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	6.25	25.6	ND	ND		5	WG1534118
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	6.25	25.6	ND	ND		5	WG1534118
Methyl methacrylate	80-62-6	100.12	1.00	4.09	ND	ND		5	WG1534118
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	3.15	16.5	ND	ND		5	WG1534118
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	1.00	4.25	ND	ND		5	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	1.00	6.87	ND	ND		5	WG1534118
Tetrachloroethylene	127-18-4	166	1.00	6.79	107	726		5	WG1534118
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	1.00	3.77	ND	ND		5	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	3.15	23.3	ND	ND		5	WG1534118





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Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.231	1.26		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	1.00	5.44	ND	ND		5	WG1534118
Trichloroethylene	79-01-6	131	1.00	5.36	2.81	15.1		5	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	1.00	4.91	ND	ND		5	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	1.00	4.91	ND	ND		5	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	2.00	8.67	ND	ND		5	WG1534118
o-Xylene	95-47-6	106	1.00	4.34	ND	ND		5	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.5				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.9				WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	16.5	39.2		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	0.996	4.85		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.358	0.739		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	31.5	59.4	972	1830		50	WG1534120
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.382	2.15		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.53	7.57		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	3.68	9.05		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	0.200	1.36	49.4	335		1	WG1533449
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	1.36	5.12		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	0.470	2.04		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.2				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		75.8				WG1534120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

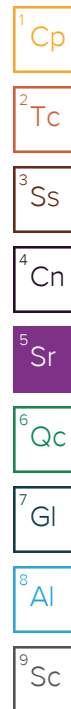
8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.48	5.89		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	35.3	66.6		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	1.10	6.18		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	2.61	12.9		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.203	0.831		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	0.406	0.699	B	1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	0.200	1.36	24.6	167		1	WG1533449
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		104				WG1533449

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	6.25	14.9	11.9	28.3		5	WG1534118
Allyl chloride	107-05-1	76.53	1.00	3.13	ND	ND		5	WG1534118
Benzene	71-43-2	78.10	1.00	3.19	ND	ND		5	WG1534118
Benzyl Chloride	100-44-7	127	1.00	5.19	ND	ND		5	WG1534118
Bromodichloromethane	75-27-4	164	1.00	6.71	ND	ND		5	WG1534118
Bromoform	75-25-2	253	3.00	31.0	ND	ND		5	WG1534118
Bromomethane	74-83-9	94.90	1.00	3.88	ND	ND		5	WG1534118
1,3-Butadiene	106-99-0	54.10	10.0	22.1	ND	ND		5	WG1534118
Carbon disulfide	75-15-0	76.10	1.00	3.11	ND	ND		5	WG1534118
Carbon tetrachloride	56-23-5	154	1.00	6.30	ND	ND		5	WG1534118
Chlorobenzene	108-90-7	113	1.00	4.62	ND	ND		5	WG1534118
Chloroethane	75-00-3	64.50	1.00	2.64	ND	ND		5	WG1534118
Chloroform	67-66-3	119	1.00	4.87	ND	ND		5	WG1534118
Chloromethane	74-87-3	50.50	1.00	2.07	ND	ND		5	WG1534118
2-Chlorotoluene	95-49-8	126	1.00	5.15	ND	ND		5	WG1534118
Cyclohexane	110-82-7	84.20	1.00	3.44	ND	ND		5	WG1534118
Dibromochloromethane	124-48-1	208	1.00	8.51	ND	ND		5	WG1534118
1,2-Dibromoethane	106-93-4	188	1.00	7.69	ND	ND		5	WG1534118
1,2-Dichlorobenzene	95-50-1	147	1.00	6.01	ND	ND		5	WG1534118
1,3-Dichlorobenzene	541-73-1	147	1.00	6.01	ND	ND		5	WG1534118
1,4-Dichlorobenzene	106-46-7	147	1.00	6.01	ND	ND		5	WG1534118
1,2-Dichloroethane	107-06-2	99	1.00	4.05	ND	ND		5	WG1534118
1,1-Dichloroethane	75-34-3	98	1.00	4.01	ND	ND		5	WG1534118
1,1-Dichloroethene	75-35-4	96.90	1.00	3.96	ND	ND		5	WG1534118
cis-1,2-Dichloroethene	156-59-2	96.90	1.00	3.96	ND	ND		5	WG1534118
trans-1,2-Dichloroethene	156-60-5	96.90	1.00	3.96	ND	ND		5	WG1534118
1,2-Dichloropropane	78-87-5	113	1.00	4.62	ND	ND		5	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	1.00	4.54	ND	ND		5	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	1.00	4.54	ND	ND		5	WG1534118
1,4-Dioxane	123-91-1	88.10	1.00	3.60	ND	ND		5	WG1534118
Ethanol	64-17-5	46.10	3.15	5.94	15.2	28.7		5	WG1534118
Ethylbenzene	100-41-4	106	1.00	4.34	ND	ND		5	WG1534118
4-Ethyltoluene	622-96-8	120	1.00	4.91	ND	ND		5	WG1534118
Trichlorofluoromethane	75-69-4	137.40	1.00	5.62	ND	ND		5	WG1534118
Dichlorodifluoromethane	75-71-8	120.92	1.00	4.95	1.59	7.86		5	WG1534118
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	1.00	7.66	ND	ND		5	WG1534118
1,2-Dichlorotetrafluoroethane	76-14-2	171	1.00	6.99	ND	ND		5	WG1534118
Heptane	142-82-5	100	1.00	4.09	ND	ND		5	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	3.15	33.6	ND	ND		5	WG1534118
n-Hexane	110-54-3	86.20	3.15	11.1	ND	ND		5	WG1534118
Isopropylbenzene	98-82-8	120.20	1.00	4.92	ND	ND		5	WG1534118
Methylene Chloride	75-09-2	84.90	1.00	3.47	ND	ND		5	WG1534118
Methyl Butyl Ketone	591-78-6	100	6.25	25.6	ND	ND		5	WG1534118
2-Butanone (MEK)	78-93-3	72.10	6.25	18.4	ND	ND		5	WG1534118
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	6.25	25.6	ND	ND		5	WG1534118
Methyl methacrylate	80-62-6	100.12	1.00	4.09	3.77	15.4		5	WG1534118
MTBE	1634-04-4	88.10	1.00	3.60	ND	ND		5	WG1534118
Naphthalene	91-20-3	128	3.15	16.5	ND	ND		5	WG1534118
2-Propanol	67-63-0	60.10	6.25	15.4	ND	ND		5	WG1534118
Propene	115-07-1	42.10	2.00	3.44	ND	ND		5	WG1534118
Styrene	100-42-5	104	1.00	4.25	ND	ND		5	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	1.00	6.87	ND	ND		5	WG1534118
Tetrachloroethylene	127-18-4	166	1.00	6.79	92.8	630		5	WG1534118
Tetrahydrofuran	109-99-9	72.10	1.00	2.95	ND	ND		5	WG1534118
Toluene	108-88-3	92.10	1.00	3.77	ND	ND		5	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	3.15	23.3	ND	ND		5	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/21/20 11:44

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	1.00	5.44	ND	ND		5	WG1534118
1,1,2-Trichloroethane	79-00-5	133	1.00	5.44	ND	ND		5	WG1534118
Trichloroethylene	79-01-6	131	1.00	5.36	ND	ND		5	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	1.00	4.91	ND	ND		5	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	1.00	4.91	ND	ND		5	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	1.00	4.67	ND	ND		5	WG1534118
Vinyl chloride	75-01-4	62.50	1.00	2.56	ND	ND		5	WG1534118
Vinyl Bromide	593-60-2	106.95	1.00	4.37	ND	ND		5	WG1534118
Vinyl acetate	108-05-4	86.10	1.00	3.52	ND	ND		5	WG1534118
m&p-Xylene	1330-20-7	106	2.00	8.67	ND	ND		5	WG1534118
o-Xylene	95-47-6	106	1.00	4.34	ND	ND		5	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.4				WG1534118

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	12.5	29.7	235	558		10	WG1534120
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	0.678	2.17		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	3.04	14.8		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.619	1.28		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	75.5	142		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	0.364	1.58		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.293	1.65		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.07	5.29		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.23	4.27		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	2.00	8.19	92.4	378		10	WG1534120
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	22.6	55.6		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	0.200	1.36	25.2	171		1	WG1533449
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	3.83	14.4		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

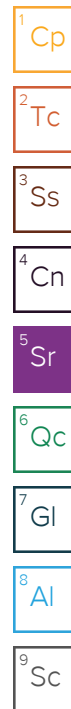
8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	1.74	6.13		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	0.858	3.72		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	0.306	1.33		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.2				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		68.7				WG1534120





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	15.7	37.3		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	1.00	3.19	ND	ND		5	WG1534118
Benzyl Chloride	100-44-7	127	1.00	5.19	ND	ND		5	WG1534118
Bromodichloromethane	75-27-4	164	1.00	6.71	ND	ND		5	WG1534118
Bromoform	75-25-2	253	3.00	31.0	ND	ND		5	WG1534118
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	1.00	4.62	ND	ND		5	WG1534118
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.385	0.795		1	WG1533449
2-Chlorotoluene	95-49-8	126	1.00	5.15	ND	ND		5	WG1534118
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	1.00	8.51	ND	ND		5	WG1534118
1,2-Dibromoethane	106-93-4	188	1.00	7.69	ND	ND		5	WG1534118
1,2-Dichlorobenzene	95-50-1	147	1.00	6.01	ND	ND		5	WG1534118
1,3-Dichlorobenzene	541-73-1	147	1.00	6.01	ND	ND		5	WG1534118
1,4-Dichlorobenzene	106-46-7	147	1.00	6.01	ND	ND		5	WG1534118
1,2-Dichloroethane	107-06-2	99	1.00	4.05	ND	ND		5	WG1534118
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	1.00	4.62	ND	ND		5	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	1.00	4.54	ND	ND		5	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	1.00	4.54	ND	ND		5	WG1534118
1,4-Dioxane	123-91-1	88.10	1.00	3.60	ND	ND		5	WG1534118
Ethanol	64-17-5	46.10	0.630	1.19	69.0	130		1	WG1533449
Ethylbenzene	100-41-4	106	1.00	4.34	ND	ND		5	WG1534118
4-Ethyltoluene	622-96-8	120	1.00	4.91	ND	ND		5	WG1534118
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.390	2.19		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.36	6.73		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	1.00	4.09	ND	ND		5	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	3.15	33.6	ND	ND		5	WG1534118
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	1.00	4.92	ND	ND		5	WG1534118
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.05	3.65		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	6.25	25.6	ND	ND		5	WG1534118
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	6.25	25.6	ND	ND		5	WG1534118
Methyl methacrylate	80-62-6	100.12	1.00	4.09	4.80	19.7		5	WG1534118
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	3.15	16.5	ND	ND		5	WG1534118
2-Propanol	67-63-0	60.10	1.25	3.07	5.38	13.2		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	1.00	4.25	ND	ND		5	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	1.00	6.87	ND	ND		5	WG1534118
Tetrachloroethylene	127-18-4	166	1.00	6.79	77.1	523		5	WG1534118
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	1.00	3.77	1.54	5.80		5	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	3.15	23.3	ND	ND		5	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/21/20 10:25

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	1.00	5.44	ND	ND		5	WG1534118
Trichloroethylene	79-01-6	131	1.00	5.36	ND	ND		5	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	1.00	4.91	ND	ND		5	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	1.00	4.91	ND	ND		5	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	0.423	1.49		1	WG1533449
m&p-Xylene	1330-20-7	106	2.00	8.67	ND	ND		5	WG1534118
o-Xylene	95-47-6	106	1.00	4.34	ND	ND		5	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.3				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.9				WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.12	14.5		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1534118
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1534118
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1534118
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1534118
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1534118
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	0.513	2.50		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1534118
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1534118
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1534118
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1534118
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1534118
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1534118
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1534118
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1534118
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1534118
Ethanol	64-17-5	46.10	0.630	1.19	22.8	43.0		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1534118
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1534118
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.372	2.09		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.03	5.09		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1534118
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1534118
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.533	1.85		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1534118
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1534118
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.551	2.26		1	WG1534118
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1534118
2-Propanol	67-63-0	60.10	1.25	3.07	2.83	6.96		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1534118
Tetrachloroethylene	127-18-4	166	0.200	1.36	57.1	388		1	WG1534118
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	1.48	5.57		1	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

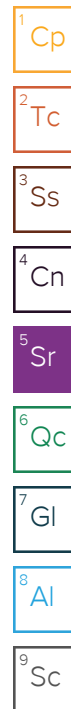


Collected date/time: 08/21/20 10:52

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1534118
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	0.445	1.93		1	WG1534118
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.8				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.0				WG1534118





Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	6.25	14.9	ND	ND		5	WG1534118
Allyl chloride	107-05-1	76.53	1.00	3.13	ND	ND		5	WG1534118
Benzene	71-43-2	78.10	1.00	3.19	ND	ND		5	WG1534118
Benzyl Chloride	100-44-7	127	1.00	5.19	ND	ND		5	WG1534118
Bromodichloromethane	75-27-4	164	1.00	6.71	ND	ND		5	WG1534118
Bromoform	75-25-2	253	3.00	31.0	ND	ND		5	WG1534118
Bromomethane	74-83-9	94.90	1.00	3.88	ND	ND		5	WG1534118
1,3-Butadiene	106-99-0	54.10	10.0	22.1	ND	ND		5	WG1534118
Carbon disulfide	75-15-0	76.10	1.00	3.11	ND	ND		5	WG1534118
Carbon tetrachloride	56-23-5	154	1.00	6.30	ND	ND		5	WG1534118
Chlorobenzene	108-90-7	113	1.00	4.62	ND	ND		5	WG1534118
Chloroethane	75-00-3	64.50	1.00	2.64	ND	ND		5	WG1534118
Chloroform	67-66-3	119	1.00	4.87	ND	ND		5	WG1534118
Chloromethane	74-87-3	50.50	1.00	2.07	ND	ND		5	WG1534118
2-Chlorotoluene	95-49-8	126	1.00	5.15	ND	ND		5	WG1534118
Cyclohexane	110-82-7	84.20	1.00	3.44	ND	ND		5	WG1534118
Dibromochloromethane	124-48-1	208	1.00	8.51	ND	ND		5	WG1534118
1,2-Dibromoethane	106-93-4	188	1.00	7.69	ND	ND		5	WG1534118
1,2-Dichlorobenzene	95-50-1	147	1.00	6.01	ND	ND		5	WG1534118
1,3-Dichlorobenzene	541-73-1	147	1.00	6.01	ND	ND		5	WG1534118
1,4-Dichlorobenzene	106-46-7	147	1.00	6.01	ND	ND		5	WG1534118
1,2-Dichloroethane	107-06-2	99	1.00	4.05	ND	ND		5	WG1534118
1,1-Dichloroethane	75-34-3	98	1.00	4.01	ND	ND		5	WG1534118
1,1-Dichloroethene	75-35-4	96.90	1.00	3.96	ND	ND		5	WG1534118
cis-1,2-Dichloroethene	156-59-2	96.90	1.00	3.96	ND	ND		5	WG1534118
trans-1,2-Dichloroethene	156-60-5	96.90	1.00	3.96	ND	ND		5	WG1534118
1,2-Dichloropropane	78-87-5	113	1.00	4.62	ND	ND		5	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	1.00	4.54	ND	ND		5	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	1.00	4.54	ND	ND		5	WG1534118
1,4-Dioxane	123-91-1	88.10	1.00	3.60	ND	ND		5	WG1534118
Ethanol	64-17-5	46.10	3.15	5.94	29.4	55.4		5	WG1534118
Ethylbenzene	100-41-4	106	1.00	4.34	ND	ND		5	WG1534118
4-Ethyltoluene	622-96-8	120	1.00	4.91	ND	ND		5	WG1534118
Trichlorofluoromethane	75-69-4	137.40	1.00	5.62	ND	ND		5	WG1534118
Dichlorodifluoromethane	75-71-8	120.92	1.00	4.95	ND	ND		5	WG1534118
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	1.00	7.66	ND	ND		5	WG1534118
1,2-Dichlorotetrafluoroethane	76-14-2	171	1.00	6.99	ND	ND		5	WG1534118
Heptane	142-82-5	100	1.00	4.09	ND	ND		5	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	3.15	33.6	ND	ND		5	WG1534118
n-Hexane	110-54-3	86.20	3.15	11.1	ND	ND		5	WG1534118
Isopropylbenzene	98-82-8	120.20	1.00	4.92	ND	ND		5	WG1534118
Methylene Chloride	75-09-2	84.90	1.00	3.47	18.5	64.2		5	WG1534118
Methyl Butyl Ketone	591-78-6	100	6.25	25.6	ND	ND		5	WG1534118
2-Butanone (MEK)	78-93-3	72.10	6.25	18.4	ND	ND		5	WG1534118
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	6.25	25.6	ND	ND		5	WG1534118
Methyl methacrylate	80-62-6	100.12	1.00	4.09	ND	ND		5	WG1534118
MTBE	1634-04-4	88.10	1.00	3.60	ND	ND		5	WG1534118
Naphthalene	91-20-3	128	3.15	16.5	ND	ND		5	WG1534118
2-Propanol	67-63-0	60.10	6.25	15.4	ND	ND		5	WG1534118
Propene	115-07-1	42.10	2.00	3.44	ND	ND		5	WG1534118
Styrene	100-42-5	104	1.00	4.25	ND	ND		5	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	1.00	6.87	ND	ND		5	WG1534118
Tetrachloroethylene	127-18-4	166	1.00	6.79	55.0	373		5	WG1534118
Tetrahydrofuran	109-99-9	72.10	1.00	2.95	ND	ND		5	WG1534118
Toluene	108-88-3	92.10	1.00	3.77	1.86	7.01		5	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	3.15	23.3	ND	ND		5	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/21/20 10:41

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	1.00	5.44	ND	ND		5	WG1534118
1,1,2-Trichloroethane	79-00-5	133	1.00	5.44	ND	ND		5	WG1534118
Trichloroethylene	79-01-6	131	1.00	5.36	ND	ND		5	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	1.00	4.91	ND	ND		5	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	1.00	4.91	ND	ND		5	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	1.00	4.67	ND	ND		5	WG1534118
Vinyl chloride	75-01-4	62.50	1.00	2.56	ND	ND		5	WG1534118
Vinyl Bromide	593-60-2	106.95	1.00	4.37	ND	ND		5	WG1534118
Vinyl acetate	108-05-4	86.10	1.00	3.52	ND	ND		5	WG1534118
m&p-Xylene	1330-20-7	106	2.00	8.67	ND	ND		5	WG1534118
o-Xylene	95-47-6	106	1.00	4.34	ND	ND		5	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.9				WG1534118

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.67	11.1		1	WG1534118
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1534118
Benzene	71-43-2	78.10	0.200	0.639	0.205	0.655		1	WG1534118
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1534118
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1534118
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1534118
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1534118
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1534118
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1534118
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1534118
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1534118
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1534118
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1534118
Chloromethane	74-87-3	50.50	0.200	0.413	0.271	0.560		1	WG1534118
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1534118
Cyclohexane	110-82-7	84.20	0.200	0.689	0.343	1.18		1	WG1534118
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1534118
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1534118
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1534118
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1534118
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1534118
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1534118
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1534118
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1534118
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1534118
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1534118
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1534118
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1534118
Ethanol	64-17-5	46.10	0.630	1.19	27.9	52.6		1	WG1534118
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1534118
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1534118
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.474	2.66		1	WG1534118
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.752	3.72		1	WG1534118
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1534118
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1534118
Heptane	142-82-5	100	0.200	0.818	0.577	2.36		1	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1534118
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1534118
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1534118
Methylene Chloride	75-09-2	84.90	0.200	0.694	16.1	55.9		1	WG1534118
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1534118
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1534118
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1534118
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1534118
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1534118
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1534118
2-Propanol	67-63-0	60.10	1.25	3.07	1.89	4.65		1	WG1534118
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1534118
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1534118
Tetrachloroethylene	127-18-4	166	0.200	1.36	25.1	170		1	WG1534118
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1534118
Toluene	108-88-3	92.10	0.200	0.753	1.99	7.50		1	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1534118
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1534118
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.263	1.23		1	WG1534118
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1534118
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1534118
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1534118
m&p-Xylene	1330-20-7	106	0.400	1.73	1.01	4.38		1	WG1534118
o-Xylene	95-47-6	106	0.200	0.867	0.206	0.893		1	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.1				WG1534118

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.12	12.2		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1534118
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1534118
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1534118
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1534118
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1534118
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.289	0.597		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1534118
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1534118
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1534118
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1534118
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1534118
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1534118
1,2-Dichloroethane	107-06-2	99	0.200	0.810	0.254	1.03		1	WG1534118
1,1-Dichloroethane	75-34-3	98	0.200	0.802	0.230	0.922		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1534118
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1534118
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1534118
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1534118
Ethanol	64-17-5	46.10	0.630	1.19	17.4	32.8		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1534118
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1534118
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.395	2.22		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.898	4.44		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	0.230	0.941		1	WG1534118
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1534118
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1534118
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1534118
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1534118
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.444	1.82		1	WG1534118
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1534118
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1534118
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1534118
Tetrachloroethylene	127-18-4	166	0.200	1.36	38.1	259		1	WG1534118
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1534118
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1534118
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1534118
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1534118
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1534118
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	0.490	2.12		1	WG1534118
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1534118
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.1				WG1534118

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.03	9.58		1	WG1533449
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1533449
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1533449
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1533449
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1533449
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1533449
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1533449
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1533449
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1533449
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1533449
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1533449
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1533449
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1533449
Chloromethane	74-87-3	50.50	0.200	0.413	0.263	0.543		1	WG1533449
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1533449
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1533449
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1533449
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1533449
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1533449
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1533449
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1533449
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1533449
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1533449
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1533449
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1533449
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1533449
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1533449
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1533449
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1533449
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1533449
Ethanol	64-17-5	46.10	0.630	1.19	26.5	50.0		1	WG1533449
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1533449
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1533449
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.386	2.17		1	WG1533449
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.26	6.23		1	WG1533449
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1533449
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1533449
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1533449
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1533449
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1533449
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1533449
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1533449
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1533449
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1533449
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1533449
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.356	1.46		1	WG1533449
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1533449
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1533449
2-Propanol	67-63-0	60.10	1.25	3.07	1.41	3.47		1	WG1533449
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1533449
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1533449
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1533449
Tetrachloroethylene	127-18-4	166	2.00	13.6	74.5	506		10	WG1534120
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1533449
Toluene	108-88-3	92.10	0.200	0.753	0.784	2.95		1	WG1533449
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1533449

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

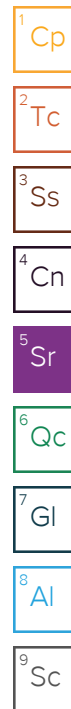


Collected date/time: 08/21/20 11:25

L1253747

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.206	1.12		1	WG1533449
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1533449
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1533449
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1533449
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1533449
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1533449
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1533449
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1533449
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1533449
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1533449
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.8				WG1533449
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		69.6				WG1534120



Method Blank (MB)

(MB) R3564543-1 08/27/20 09:54

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3564543-1 08/27/20 09:54

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.267	U	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	93.6			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564543-2 08/27/20 10:48 • (LCSD) R3564543-3 08/27/20 11:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.57	4.38	122	117	55.0-148			4.25	25
Propene	3.75	4.51	4.31	120	115	64.0-144			4.54	25
Dichlorodifluoromethane	3.75	4.66	4.53	124	121	64.0-139			2.83	25
1,2-Dichlorotetrafluoroethane	3.75	4.53	4.40	121	117	70.0-130			2.91	25
Chloromethane	3.75	4.55	4.55	121	121	70.0-130			0.000	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564543-2 08/27/20 10:48 • (LCSD) R3564543-3 08/27/20 11:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	4.53	4.49	121	120	70.0-130			0.887	25
1,3-Butadiene	3.75	4.64	4.54	124	121	70.0-130			2.18	25
Bromomethane	3.75	4.59	4.52	122	121	70.0-130			1.54	25
Chloroethane	3.75	4.55	4.62	121	123	70.0-130			1.53	25
Trichlorofluoromethane	3.75	4.57	4.53	122	121	70.0-130			0.879	25
1,1,2-Trichlorotrifluoroethane	3.75	4.60	4.44	123	118	70.0-130			3.54	25
1,1-Dichloroethene	3.75	3.82	4.67	102	125	70.0-130			20.0	25
1,1-Dichloroethane	3.75	4.38	4.40	117	117	70.0-130			0.456	25
Acetone	3.75	4.20	4.17	112	111	70.0-130			0.717	25
2-Propanol	3.75	4.67	4.49	125	120	70.0-139			3.93	25
Carbon disulfide	3.75	4.35	4.31	116	115	70.0-130			0.924	25
Methylene Chloride	3.75	4.47	4.43	119	118	70.0-130			0.899	25
MTBE	3.75	4.26	4.22	114	113	70.0-130			0.943	25
trans-1,2-Dichloroethene	3.75	4.45	4.43	119	118	70.0-130			0.450	25
n-Hexane	3.75	4.51	4.44	120	118	70.0-130			1.56	25
Vinyl acetate	3.75	3.38	3.54	90.1	94.4	70.0-130			4.62	25
Methyl Ethyl Ketone	3.75	4.40	4.39	117	117	70.0-130			0.228	25
cis-1,2-Dichloroethene	3.75	3.98	4.02	106	107	70.0-130			1.00	25
Chloroform	3.75	4.38	4.35	117	116	70.0-130			0.687	25
Cyclohexane	3.75	4.33	4.32	115	115	70.0-130			0.231	25
1,1,1-Trichloroethane	3.75	4.34	4.36	116	116	70.0-130			0.460	25
Carbon tetrachloride	3.75	4.34	4.41	116	118	70.0-130			1.60	25
Benzene	3.75	4.24	4.30	113	115	70.0-130			1.41	25
1,2-Dichloroethane	3.75	4.40	4.38	117	117	70.0-130			0.456	25
Heptane	3.75	3.66	3.95	97.6	105	70.0-130			7.62	25
Trichloroethylene	3.75	4.22	4.34	113	116	70.0-130			2.80	25
1,2-Dichloropropane	3.75	4.31	4.41	115	118	70.0-130			2.29	25
1,4-Dioxane	3.75	4.08	4.28	109	114	70.0-140			4.78	25
Bromodichloromethane	3.75	4.29	4.38	114	117	70.0-130			2.08	25
cis-1,3-Dichloropropene	3.75	4.24	4.31	113	115	70.0-130			1.64	25
4-Methyl-2-pentanone (MIBK)	3.75	4.68	4.80	125	128	70.0-139			2.53	25
Toluene	3.75	4.24	4.37	113	117	70.0-130			3.02	25
trans-1,3-Dichloropropene	3.75	4.21	4.25	112	113	70.0-130			0.946	25
1,1,2-Trichloroethane	3.75	4.16	4.35	111	116	70.0-130			4.47	25
Tetrachloroethylene	3.75	4.07	4.26	109	114	70.0-130			4.56	25
Methyl Butyl Ketone	3.75	4.60	4.77	123	127	70.0-149			3.63	25
Dibromochloromethane	3.75	4.08	4.14	109	110	70.0-130			1.46	25
1,2-Dibromoethane	3.75	4.10	4.22	109	113	70.0-130			2.88	25
Chlorobenzene	3.75	4.07	4.19	109	112	70.0-130			2.91	25
Ethylbenzene	3.75	4.31	4.39	115	117	70.0-130			1.84	25

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564543-2 08/27/20 10:48 • (LCSD) R3564543-3 08/27/20 11:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
m&p-Xylene	7.50	8.84	8.93	118	119	70.0-130			1.01	25
o-Xylene	3.75	4.30	4.36	115	116	70.0-130			1.39	25
Styrene	3.75	4.31	4.30	115	115	70.0-130			0.232	25
Bromoform	3.75	4.08	4.10	109	109	70.0-130			0.489	25
1,1,2,2-Tetrachloroethane	3.75	4.45	4.51	119	120	70.0-130			1.34	25
4-Ethyltoluene	3.75	4.49	4.57	120	122	70.0-130			1.77	25
1,3,5-Trimethylbenzene	3.75	4.37	4.48	117	119	70.0-130			2.49	25
1,2,4-Trimethylbenzene	3.75	4.41	4.47	118	119	70.0-130			1.35	25
1,3-Dichlorobenzene	3.75	4.22	4.34	113	116	70.0-130			2.80	25
1,4-Dichlorobenzene	3.75	4.07	4.17	109	111	70.0-130			2.43	25
Benzyl Chloride	3.75	4.02	4.10	107	109	70.0-152			1.97	25
1,2-Dichlorobenzene	3.75	4.35	4.36	116	116	70.0-130			0.230	25
1,2,4-Trichlorobenzene	3.75	3.98	4.08	106	109	70.0-160			2.48	25
Hexachloro-1,3-butadiene	3.75	4.32	4.53	115	121	70.0-151			4.75	25
Naphthalene	3.75	4.38	4.45	117	119	70.0-159			1.59	25
Allyl Chloride	3.75	4.50	4.42	120	118	70.0-130			1.79	25
2-Chlorotoluene	3.75	4.29	4.33	114	115	70.0-130			0.928	25
Methyl Methacrylate	3.75	4.01	4.23	107	113	70.0-130			5.34	25
Tetrahydrofuran	3.75	4.54	4.53	121	121	70.0-137			0.221	25
2,2,4-Trimethylpentane	3.75	4.43	4.39	118	117	70.0-130			0.907	25
Vinyl Bromide	3.75	4.57	4.54	122	121	70.0-130			0.659	25
Isopropylbenzene	3.75	4.31	4.33	115	115	70.0-130			0.463	25
(S) 1,4-Bromofluorobenzene				96.7	98.3	60.0-140				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3564980-3 08/28/20 10:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

[L1253747-05,08,10,11,12,13,14](#)

Method Blank (MB)

(MB) R3564980-3 08/28/20 10:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.143	U	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	97.0			60.0-140

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564980-1 08/28/20 08:43 • (LCSD) R3564980-2 08/28/20 09:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.78	3.66	101	97.6	55.0-148			3.23	25
Propene	3.75	3.64	3.74	97.1	99.7	64.0-144			2.71	25
Dichlorodifluoromethane	3.75	4.06	4.12	108	110	64.0-139			1.47	25
1,2-Dichlorotetrafluoroethane	3.75	4.13	4.14	110	110	70.0-130			0.242	25
Chloromethane	3.75	3.77	3.92	101	105	70.0-130			3.90	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564980-1 08/28/20 08:43 • (LCSD) R3564980-2 08/28/20 09:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	4.03	4.02	107	107	70.0-130			0.248	25
1,3-Butadiene	3.75	3.53	3.54	94.1	94.4	70.0-130			0.283	25
Bromomethane	3.75	3.98	3.95	106	105	70.0-130			0.757	25
Chloroethane	3.75	3.77	3.80	101	101	70.0-130			0.793	25
Trichlorofluoromethane	3.75	4.10	4.17	109	111	70.0-130			1.69	25
1,1,2-Trichlorotrifluoroethane	3.75	4.16	4.12	111	110	70.0-130			0.966	25
1,1-Dichloroethene	3.75	4.04	4.09	108	109	70.0-130			1.23	25
1,1-Dichloroethane	3.75	4.01	4.02	107	107	70.0-130			0.249	25
Acetone	3.75	3.85	3.92	103	105	70.0-130			1.80	25
2-Propanol	3.75	3.88	3.90	103	104	70.0-139			0.514	25
Carbon disulfide	3.75	4.06	4.03	108	107	70.0-130			0.742	25
Methylene Chloride	3.75	3.97	3.89	106	104	70.0-130			2.04	25
MTBE	3.75	3.93	4.01	105	107	70.0-130			2.02	25
trans-1,2-Dichloroethene	3.75	4.01	4.01	107	107	70.0-130			0.000	25
n-Hexane	3.75	3.82	3.84	102	102	70.0-130			0.522	25
Vinyl acetate	3.75	3.49	3.44	93.1	91.7	70.0-130			1.44	25
Methyl Ethyl Ketone	3.75	3.85	3.92	103	105	70.0-130			1.80	25
cis-1,2-Dichloroethene	3.75	3.98	3.97	106	106	70.0-130			0.252	25
Chloroform	3.75	3.90	3.94	104	105	70.0-130			1.02	25
Cyclohexane	3.75	3.90	3.88	104	103	70.0-130			0.514	25
1,1,1-Trichloroethane	3.75	3.87	3.96	103	106	70.0-130			2.30	25
Carbon tetrachloride	3.75	3.94	3.97	105	106	70.0-130			0.759	25
Benzene	3.75	4.10	4.13	109	110	70.0-130			0.729	25
1,2-Dichloroethane	3.75	4.05	3.96	108	106	70.0-130			2.25	25
Heptane	3.75	3.41	3.24	90.9	86.4	70.0-130			5.11	25
Trichloroethylene	3.75	3.94	3.96	105	106	70.0-130			0.506	25
1,2-Dichloropropane	3.75	3.99	4.00	106	107	70.0-130			0.250	25
1,4-Dioxane	3.75	3.96	3.94	106	105	70.0-140			0.506	25
Bromodichloromethane	3.75	3.86	3.91	103	104	70.0-130			1.29	25
cis-1,3-Dichloropropene	3.75	3.92	3.95	105	105	70.0-130			0.762	25
4-Methyl-2-pentanone (MIBK)	3.75	3.88	3.96	103	106	70.0-139			2.04	25
Toluene	3.75	4.03	4.10	107	109	70.0-130			1.72	25
trans-1,3-Dichloropropene	3.75	3.95	3.91	105	104	70.0-130			1.02	25
1,1,2-Trichloroethane	3.75	3.88	4.00	103	107	70.0-130			3.05	25
Tetrachloroethylene	3.75	4.07	4.07	109	109	70.0-130			0.000	25
Methyl Butyl Ketone	3.75	3.83	3.86	102	103	70.0-149			0.780	25
Dibromochloromethane	3.75	3.98	4.01	106	107	70.0-130			0.751	25
1,2-Dibromoethane	3.75	4.07	4.20	109	112	70.0-130			3.14	25
Chlorobenzene	3.75	4.11	4.15	110	111	70.0-130			0.969	25
Ethylbenzene	3.75	4.04	4.14	108	110	70.0-130			2.44	25

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564980-1 08/28/20 08:43 • (LCSD) R3564980-2 08/28/20 09:26

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	8.12	8.29	108	111	70.0-130			2.07	25
o-Xylene	3.75	4.03	4.10	107	109	70.0-130			1.72	25
Styrene	3.75	3.98	4.04	106	108	70.0-130			1.50	25
Bromoform	3.75	3.83	3.89	102	104	70.0-130			1.55	25
1,1,2,2-Tetrachloroethane	3.75	4.03	4.13	107	110	70.0-130			2.45	25
4-Ethyltoluene	3.75	4.17	4.22	111	113	70.0-130			1.19	25
1,3,5-Trimethylbenzene	3.75	4.03	4.12	107	110	70.0-130			2.21	25
1,2,4-Trimethylbenzene	3.75	4.09	4.16	109	111	70.0-130			1.70	25
1,3-Dichlorobenzene	3.75	4.14	4.25	110	113	70.0-130			2.62	25
1,4-Dichlorobenzene	3.75	4.22	4.33	113	115	70.0-130			2.57	25
Benzyl Chloride	3.75	3.95	3.97	105	106	70.0-152			0.505	25
1,2-Dichlorobenzene	3.75	4.19	4.25	112	113	70.0-130			1.42	25
1,2,4-Trichlorobenzene	3.75	4.33	4.41	115	118	70.0-160			1.83	25
Hexachloro-1,3-butadiene	3.75	4.30	4.44	115	118	70.0-151			3.20	25
Naphthalene	3.75	4.30	4.39	115	117	70.0-159			2.07	25
Allyl Chloride	3.75	3.39	3.64	90.4	97.1	70.0-130			7.11	25
2-Chlorotoluene	3.75	4.10	4.20	109	112	70.0-130			2.41	25
Methyl Methacrylate	3.75	3.93	4.06	105	108	70.0-130			3.25	25
Tetrahydrofuran	3.75	3.92	3.95	105	105	70.0-137			0.762	25
2,2,4-Trimethylpentane	3.75	3.95	4.00	105	107	70.0-130			1.26	25
Vinyl Bromide	3.75	3.98	4.07	106	109	70.0-130			2.24	25
Isopropylbenzene	3.75	4.06	4.14	108	110	70.0-130			1.95	25
(S) 1,4-Bromofluorobenzene				98.6	99.2	60.0-140				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3564988-3 08/28/20 10:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Acetone	U		0.584	1.25
Methyl Methacrylate	U		0.0876	0.200
Tetrachloroethylene	U		0.0814	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	74.1			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3564988-1 08/28/20 08:46 • (LCSD) R3564988-2 08/28/20 09:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Ethanol	3.75	3.40	3.50	90.7	93.3	55.0-148			2.90	25
Acetone	3.75	3.19	3.25	85.1	86.7	70.0-130			1.86	25
Tetrachloroethylene	3.75	3.91	3.91	104	104	70.0-130			0.000	25
Methyl Methacrylate	3.75	3.15	3.11	84.0	82.9	70.0-130			1.28	25
(S) 1,4-Bromofluorobenzene				84.1	84.2	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

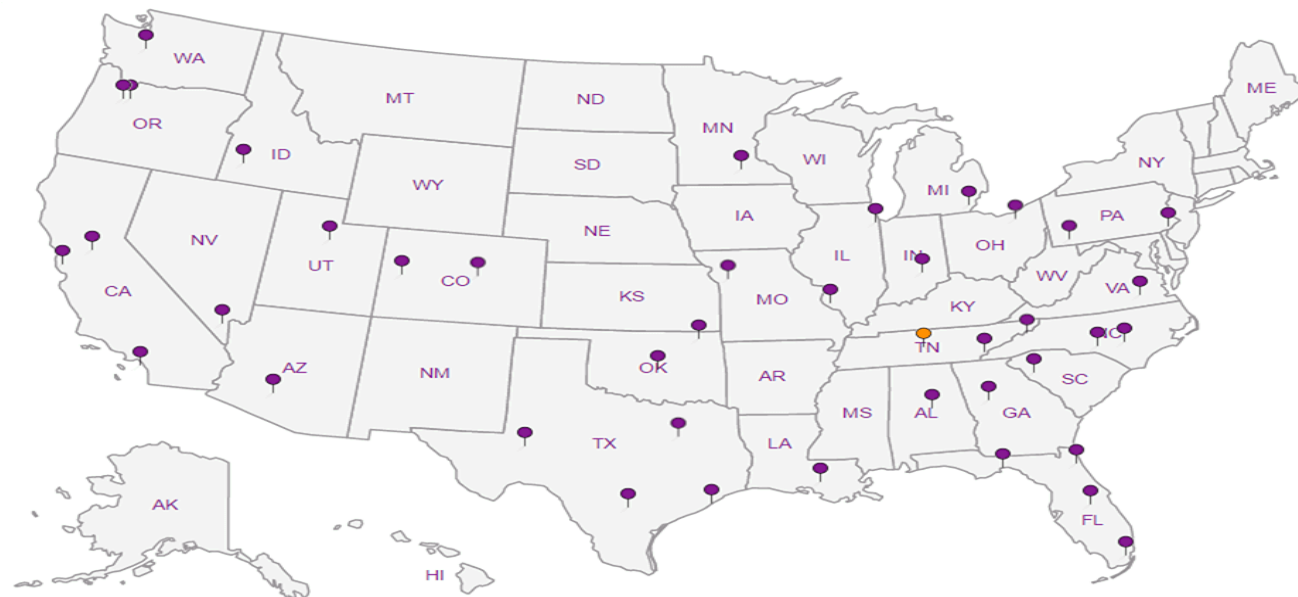
Third Party Federal Accreditations

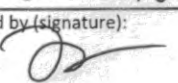
A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Apex Companies, LLC - Portland, OR 600 Stewart St Ste 400 Seattle WA 98101		Billing Information: Accounts Payable 3015 SW First Ave. Portland, OR 97201-4707		Pres Chk		Analysis / Container / Preservative										Chain of Custody Page <u>1</u> of <u>2</u>			
		Email To: jfoxwell@apexc.com;kelsi.evans@apexc.com		 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859															
Report to: Jie Xu		Project Description: CLAREMONT VILLAGE		City/State Collected: EVERETT, WA		Please Circle: PT MT CT ET		VOCs TO-15 Summa										SDG # 1253797 D034	
Phone: 503-924-4704		Client Project # PECO-2020		Lab Project # ASHCREPOR-CLAREMONT		P.O. # PECO_2020-01												Acctnum: ASHCREPOR Template: T171960	
Collected by (print): J GUILLOTTE		Site/Facility ID #		Quote #		Prelogin: P791392 PM: 110 - Brian Ford												PB: CSG-08/13/10	
Collected by (signature): 		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Date Results Needed		No. of Cntrs												Shipped Via: FedEX Ground	
Immediately Packed on Ice ☒ N ☐ Y																			
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time											Remarks	Sample # (lab only)	
SS-BC-2		G	Air	-	8/21/2022	0904	1											CMU # 9837	-01
SS-BC-3			Air	-		0908	1											8903	-08
SS-BC-4			Air	-		0901	1											8840	-03
SS-BC-5			Air	-		0914	1											8823	-04
SS-BC-6			Air	-		0911	1											9972	-05
SS-PM-2			Air	-		1149	1											8591	-06
SS-TZ-2			Air	-		1139	1											10649	-07
SS-TZ-3			Air	-		1144	1											5272	-08
			Air																
			Air																

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via:
☐ UPS ☐ FedEx ☐ Courier

Tracking # **141117631809**

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP ☐ Y ☐ N

COC Signed/Accurate: ☒ Y ☐ N

Bottles arrive intact: ☒ Y ☐ N

Correct bottles used: ☒ Y ☐ N

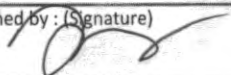
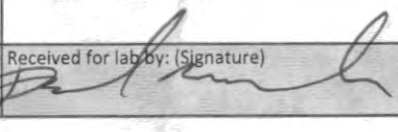
Sufficient volume sent: ☒ Y ☐ N

If Applicable

VOA Zero Headspace: ☐ Y ☒ N

Preservation Correct/Checked: ☐ Y ☒ N

RAD Screen <0.5 mR/hr: ☒ Y ☐ N

Relinquished by: (Signature) 	Date: 8/21/2022	Time: 1400	Received by: (Signature) 	Trip Blank Received: Yes ☒ No ☐	HCL / MeOH TBR	Temp: 15 °C	Bottles Received: 15	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK	

Apex Companies, LLC - Portland, OR 600 Stewart St Ste 400 Seattle WA 98101				Billing Information:				Chain of Custody	
				Accounts Payable 3015 SW First Ave. Portland, OR 97201-4707				Page 2 of 2	
Report to: Jie Xu				Email To: jfoxwell@apexc.com;kelsi.evans@apexc.co				 Pace Analytical® National Center for Testing & Innovation 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Project Description: CLAREMONT				City/State Collected: EVERETT, WA		Please Circle: PT MT CT ET			
Phone: 503-924-4704		Client Project # PECO_2020		Lab Project # ASHCREPOR-CLAREMONT				SDG # 1253747	
Collected by (print): J GUILLER		Site/Facility ID #		P.O. # PECO_2020-01				Table #	
Collected by (signature): 		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #				Acctnum: ASHCREPOR	
Immediately Packed on Ice N ☒ Y ☐				Date Results Needed		No. of Cntrs		Template: T171960	
								Prelogin: P791392	
								PM: 110 - Brian Ford	
								PB: 156081320	
								Shipped Via: FedEx Ground	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Remarks		
SS-HN-2	G	Air	-	8/21/22	0957	1	COTN # 6128 -09		
SS-WB-2		Air	-		1025	1	7307 -10		
SS-WB-3		Air	-		1052	1	10759 7059 -11		
SS-WB-4		Air	-		1041	1	6912 -12		
SS-WB-5		Air	-		1059	1	12121 -13		
SS-WB-6		Air	-		HHS 1053	1	9916 934 m -14		
SS-JW-2			-		1125	1	9311 -15		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other Remarks: pH _____ Temp _____ Flow _____ Other _____ Samples returned via: ☐ UPS ☐ FedEx ☐ Courier Tracking # 141117631809									
Relinquished by : (Signature)		Date: 8/21/2020	Time: 1400	Received by: (Signature)		Trip Blank Received: Yes ☒ No ☐		Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N COC Signed/Accurate: ☒ Y ☐ N Bottles arrive intact: ☒ Y ☐ N Correct bottles used: ☒ Y ☐ N Sufficient volume sent: ☒ Y ☐ N If Applicable VOA Zero Headspace: ☐ Y ☒ N Preservation Correct/Checked: ☐ Y ☒ N RAD Screen <0.5 mR/hr: ☒ Y ☐ N	
Relinquished by : (Signature)		Date:	Time:	Received by: (Signature)		Temp: 15°C Bottles Received: 15		If preservation required by Login: Date/Time	
Relinquished by : (Signature)		Date:	Time:	Received for lab by: (Signature)		Date: 08/22/2020 Time: 0900		Hold: Condition: NCF / OK	

Appendix D

Air2D Model Results

30.48	-670.56	-0.347324E+00	0.991936E-02	-0.347466E+00
60.96	-670.56	-0.172461E+00	0.982720E-02	-0.172741E+00
91.44	-670.56	-0.114035E+00	0.970854E-02	-0.114448E+00
121.92	-670.56	-0.846695E-01	0.955867E-02	-0.852074E-01
152.40	-670.56	-0.669220E-01	0.937862E-02	-0.675759E-01
182.88	-670.56	-0.549918E-01	0.917125E-02	-0.557513E-01
213.36	-670.56	-0.463930E-01	0.894062E-02	-0.472466E-01
243.84	-670.56	-0.398885E-01	0.869111E-02	-0.408244E-01
274.32	-670.56	-0.347846E-01	0.842616E-02	-0.357907E-01
304.80	-670.56	-0.306702E-01	0.815058E-02	-0.317348E-01
335.28	-670.56	-0.272817E-01	0.786747E-02	-0.283934E-01
365.76	-670.56	-0.244427E-01	0.758011E-02	-0.255911E-01
396.24	-670.56	-0.220307E-01	0.729137E-02	-0.232059E-01
426.72	-670.56	-0.199577E-01	0.700362E-02	-0.211509E-01
457.20	-670.56	-0.181588E-01	0.671888E-02	-0.193619E-01
487.68	-670.56	-0.165847E-01	0.643874E-02	-0.177907E-01
518.16	-670.56	-0.151978E-01	0.616451E-02	-0.164004E-01
548.64	-670.56	-0.139680E-01	0.589721E-02	-0.151618E-01
579.12	-670.56	-0.128713E-01	0.563760E-02	-0.140518E-01
609.60	-670.56	-0.118894E-01	0.538625E-02	-0.130526E-01
640.08	-670.56	-0.110061E-01	0.514344E-02	-0.121486E-01
670.56	-670.56	-0.102083E-01	0.490947E-02	-0.113275E-01
701.04	-670.56	-0.948537E-02	0.468426E-02	-0.105790E-01
731.52	-670.56	-0.882809E-02	0.446823E-02	-0.989446E-02
762.00	-670.56	-0.822880E-02	0.426107E-02	-0.926660E-02
792.48	-670.56	-0.768093E-02	0.406263E-02	-0.868917E-02
822.96	-670.56	-0.717882E-02	0.387277E-02	-0.815682E-02
853.44	-670.56	-0.671760E-02	0.369126E-02	-0.766496E-02
883.92	-670.56	-0.629306E-02	0.351788E-02	-0.720958E-02
914.40	-670.56	-0.590150E-02	0.335237E-02	-0.678720E-02
944.88	-670.56	-0.553971E-02	0.319445E-02	-0.639475E-02
975.36	-670.56	-0.520483E-02	0.304385E-02	-0.602954E-02
1005.84	-670.56	-0.489440E-02	0.290028E-02	-0.568918E-02
1036.32	-670.56	-0.460616E-02	0.276347E-02	-0.537155E-02
1066.80	-670.56	-0.433817E-02	0.263313E-02	-0.507475E-02
1097.28	-670.56	-0.408867E-02	0.250899E-02	-0.479711E-02
1127.76	-670.56	-0.385610E-02	0.239077E-02	-0.453710E-02
1158.24	-670.56	-0.363906E-02	0.227821E-02	-0.429336E-02
1188.72	-670.56	-0.343628E-02	0.217104E-02	-0.406465E-02
1219.20	-670.56	-0.324662E-02	0.206903E-02	-0.384986E-02
1249.68	-670.56	-0.306907E-02	0.197192E-02	-0.364797E-02
1280.16	-670.56	-0.290269E-02	0.187949E-02	-0.345805E-02
1310.64	-670.56	-0.274665E-02	0.179152E-02	-0.327927E-02
1341.12	-670.56	-0.260018E-02	0.170778E-02	-0.311086E-02
1371.60	-670.56	-0.246258E-02	0.162809E-02	-0.295211E-02
1402.08	-670.56	-0.233321E-02	0.155223E-02	-0.280237E-02
1432.56	-670.56	-0.221151E-02	0.148002E-02	-0.266106E-02
1463.04	-670.56	-0.209693E-02	0.141129E-02	-0.252762E-02
1493.52	-670.56	-0.198900E-02	0.134586E-02	-0.240155E-02
1524.00	-670.56	-0.188725E-02	0.128357E-02	-0.228238E-02
1554.48	-670.56	-0.179129E-02	0.122426E-02	-0.216969E-02
1584.96	-670.56	-0.170073E-02	0.116780E-02	-0.206307E-02
1615.44	-670.56	-0.161523E-02	0.111404E-02	-0.196215E-02

1645.92	-670.56	-0.153445E-02	0.106284E-02	-0.186660E-02
1676.40	-670.56	-0.145811E-02	0.101408E-02	-0.177608E-02
1706.88	-670.56	-0.138593E-02	0.967644E-03	-0.169030E-02
1737.36	-670.56	-0.131764E-02	0.923410E-03	-0.160900E-02
1767.84	-670.56	-0.125302E-02	0.881274E-03	-0.153189E-02
1798.32	-670.56	-0.119184E-02	0.841131E-03	-0.145876E-02
1828.80	-670.56	-0.113389E-02	0.802883E-03	-0.138936E-02
1859.28	-670.56	-0.107899E-02	0.766439E-03	-0.132350E-02
1889.76	-670.56	-0.102695E-02	0.731708E-03	-0.126096E-02
1920.24	-670.56	-0.977617E-03	0.698608E-03	-0.120158E-02
1950.72	-670.56	-0.930826E-03	0.667059E-03	-0.114517E-02
1981.20	-670.56	-0.886435E-03	0.636985E-03	-0.109157E-02
2011.68	-670.56	-0.844309E-03	0.608314E-03	-0.104063E-02
2042.16	-670.56	-0.804320E-03	0.580979E-03	-0.992203E-03
2072.64	-670.56	-0.766349E-03	0.554914E-03	-0.946161E-03
2103.12	-670.56	-0.730286E-03	0.530059E-03	-0.902375E-03
2133.60	-670.56	-0.696025E-03	0.506354E-03	-0.860724E-03
2164.08	-670.56	-0.663469E-03	0.483745E-03	-0.821097E-03
2194.56	-670.56	-0.632525E-03	0.462179E-03	-0.783388E-03
2225.04	-670.56	-0.603108E-03	0.441605E-03	-0.747498E-03
2255.52	-670.56	-0.575135E-03	0.421976E-03	-0.713333E-03
2286.00	-670.56	-0.548530E-03	0.403248E-03	-0.680804E-03
2316.48	-670.56	-0.523221E-03	0.385377E-03	-0.649827E-03
2346.96	-670.56	-0.499140E-03	0.368322E-03	-0.620324E-03
2377.44	-670.56	-0.476223E-03	0.352045E-03	-0.592220E-03
2407.92	-670.56	-0.454411E-03	0.336509E-03	-0.565444E-03
2438.40	-670.56	-0.433645E-03	0.321678E-03	-0.539931E-03
2468.88	-670.56	-0.413873E-03	0.307521E-03	-0.515616E-03
2499.36	-670.56	-0.395044E-03	0.294004E-03	-0.492441E-03
2529.84	-670.56	-0.377109E-03	0.281099E-03	-0.470349E-03
2560.32	-670.56	-0.360025E-03	0.268775E-03	-0.449286E-03
2590.80	-670.56	-0.343747E-03	0.257007E-03	-0.429203E-03
2621.28	-670.56	-0.328236E-03	0.245768E-03	-0.410050E-03
2651.76	-670.56	-0.313454E-03	0.235034E-03	-0.391783E-03
2682.24	-670.56	-0.299364E-03	0.224781E-03	-0.374359E-03
2712.72	-670.56	-0.285932E-03	0.214986E-03	-0.357737E-03
2743.20	-670.56	-0.273125E-03	0.205630E-03	-0.341879E-03
2773.68	-670.56	-0.260914E-03	0.196690E-03	-0.326746E-03
2804.16	-670.56	-0.249268E-03	0.188150E-03	-0.312306E-03
2834.64	-670.56	-0.238161E-03	0.179989E-03	-0.298524E-03
2865.12	-670.56	-0.227566E-03	0.172190E-03	-0.285370E-03
2895.60	-670.56	-0.217459E-03	0.164737E-03	-0.272813E-03
2926.08	-670.56	-0.207816E-03	0.157615E-03	-0.260825E-03
2956.56	-670.56	-0.198614E-03	0.150807E-03	-0.249380E-03
2987.04	-670.56	-0.189833E-03	0.144301E-03	-0.238452E-03
3017.52	-670.56	-0.181453E-03	0.138081E-03	-0.228016E-03

VOLUMETRIC FLOW SIGN CONVENTION :

NEGATIVE HORIZONTAL FLOW => FLOW TOWARDS WELL

POSITIVE HORIZONTAL FLOW => FLOW AWAY FROM WELL

NEGATIVE VERTICAL FLOW => FLOW UPWARDS

POSITIVE VERTICAL FLOW => FLOW DOWNWARDS

MID-DEPTH OF WELL FROM SURFACE = -685.800 cm

RADIUS OF FILTER-SOIL INTERFACE = 5.081 cm

PRESSURE IN WELL = 0.977 atm

VOLUMETRIC FLOW THROUGH WELL = -0.7164E+05 cm³/sec

MASS FLOW THROUGH WELL = -82.401 g/sec

+VE REPRESENTS INJECTION

-VE REPRESENTS WITHDRAWAL

SUMMARY OF UNITS USED IN SIMULATION

LENGTH UNIT SYSTEM : cm

VOLUME UNIT SYSTEM : cm³

TIME UNIT SYSTEM : sec

PRESSURE UNIT SYSTEM : atm

TEMPERATURE UNIT SYSTEM : degC

MASS UNIT SYSTEM : g

PERMEABILITY UNIT SYSTEM : cm²

PROJECT : CLAREMONT SVE
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SCOPE : RESULTS OF FULL-SCALE PERMEABILITY TESTS
TEST DATE : 07/30/2018
WELL NUMBER : SVE-1

1. MODEL INPUT SUMMARY

MODEL DOMAIN : THICKNESS = 1219.200 cm
: ESTIMATED PERMEABILITY = 0.100E-06 cm²
: ESTIMATED ANISOTROPY RATIO = 1.00
WELL DEPTH (HANTUSH d) : TOP OF SCREEN = 152.40 cm
WELL DEPTH (HANTUSH l) : BOTTOM OF SCREEN = 1219.20 cm
WELL RADIUS : EFFECTIVE RADIUS = 5.08 cm
AIR FLOW DIRECTION : VAPOR EXTRACTION

2. MODEL OUTPUT SUMMARY

AIR TEMP degC	SOIL TEMP degC	ATMOS. PRESS. atm	SYSTEM PRESS. atm	FLOW METER TYPE	SCALE READING -- cm ³ /sec	PREVAIL. FLOW cm ³ /sec	ACTUAL FLOW
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25.00	15.00	1.000	0.983	NONE	--	--	70014.800
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MASS FLOW g/sec	HORIZON. PERM. cm ²	VERTICAL PERM. cm ²	LEAKAGE RATIO(k/b) cm ² /cm	ANISOTPY RATIO (kr/kz)	MEAN OF ERROR IN PRESS.	STD DEV OF ERROR IN PRESS.
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82.401	0.418E-06	0.418E-06	0.000E+00	1.000	0.213-313	0.205-305
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