Limited Phase II Environmental Site Assessment Report

726 East 12th Avenue
Anchorage, Alaska
Cooperative Agreement
Number: BF-01J39201

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Sign-off Sheet

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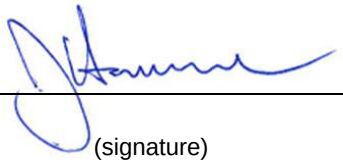
Prepared by 

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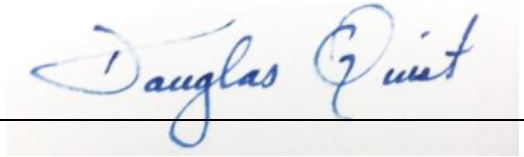
Reviewed by 

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Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
bgs	below ground surface
COC	chain-of-custody
COCs	contaminants of concern
CSM	conceptual site model
cVOCs	chlorinated volatile organic compounds
DQO	data quality objective
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
Geotek	GeoTek Alaska, Inc.
GRO	gasoline-range organics
mg/kg	milligrams per kilogram
MOA	Municipality of Anchorage, Alaska
NAPL	non-aqueous phase liquid
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NVLAP	National Voluntary Laboratory Accreditation Program
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
ppm	parts per million
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation Recovery Act
RECs	recognized environmental conditions
RSLs	EPA Residential and Industrial Soil Regional Screening Levels
SAP	Sampling and Analysis Plan
SIM	Selected Ion Monitoring
SOPs	standard operating procedures
Stantec	Stantec Consulting Services Inc.
TO	toxic organics
TLs	ADEC Soil Gas Residential and Industrial Target Levels
VEC	vapor encroachment condition
VOCs	volatile organic compounds

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has completed a Limited Phase II Environmental Site Assessment (ESA) for the property located at 726 East 12th Avenue in Anchorage, Alaska ("Property" or "Site"), on behalf of Municipality of Anchorage, Alaska ("MOA" or "Client"). The Limited Phase II ESA was funded through a U.S. Environmental Protection Agency (EPA) Brownfield Community-Wide Assessment Grant. Site eligibility for use of funding was approved by the EPA on June 8, 2018. The work described herein was completed in general accordance with the scope, methods, and requirements detailed in 1) Cooperative Agreement Number BF-01J39201; 2) the Quality Assurance Project Plan (QAPP) approved by the EPA on July 24, 2018 (Stantec, 2018a); and 3) the Sampling and Analysis Plan (SAP) approved by the EPA on August 27, 2018 (Stantec, 2018b).

2.0 SITE DESCRIPTION

The Property consists of an approximately 0.15-acre, rectangular parcel of land (Tax Parcel ID number 002-131-41-000) located in an area of mixed commercial and residential development (**Figure 1**). The Property comprises an asphalt-paved parking lot used by Light'n Up, Inc., an electrical contractor located on the west adjacent property. The Property is fenced with access through a locked gate fronting East 12th Avenue.

Information on past use of the Site was obtained by Stantec during completion of a Phase I ESA (Stantec, 2018c). Based on the review of historical aerial photographs and information obtained from the Property Owner as part of the Phase I ESA, an electrical substation was constructed at the Property in 1950 and operated by Chugach Electric Authority (CPA) until it was transferred to MOA Municipal Light and Power (ML&P) in 1984. The electrical substation was decommissioned in 2007.

Based on the results of the Phase I ESA, the following recognized environmental conditions (RECs) were identified for the Property (Stantec, 2018c):

REC #1: The former use of the Property as an electrical substation from 1950 to 2007 is considered a REC for the Property. Substations typically utilize electrical transformers, capacitors, and other electrical equipment that contain dielectric fluids. Based on the age of the substation, the dielectric fluids may have contained polychlorinated biphenyls (PCBs). Contaminants could have been released to the environment through leakage, spills, or improper housekeeping practices.

REC #2: The west adjacent property (1209 Gambell Street) is a former retail gas station and vehicle maintenance facility. Environmental investigations conducted at the site between 1989 and 2011 indicate that releases from former underground storage tanks (USTs), associated piping, and dispensers impacted soil and groundwater at the site. Contaminants of concern at this site include diesel-range organics (DRO); benzene, ethylbenzene, toluene and xylenes (BTEX); 1,4-dichlorobenzene; tetrachloroethylene; and trichloroethylene. Remedial efforts at the site have included soil excavation, operation of a vapor extraction system (VES), and application of a soil amendment to enhance bioremediation. Site closure with institutional controls was granted in 2011 followed by decommissioning of the monitoring wells. Groundwater at this site was reportedly measured at depths ranging between approximately 22 to 25 feet below ground surface (bgs) with a reported flow to the west- southwest. Impacted soil was left in place at the southern portion of this site extending south into the alley and onto the adjoining property. The area of remaining impacted soil is approximately 65 feet to the west of the Property. Based on the historical uses of this property and presence of impacted soil, this site is considered a REC and vapor encroachment condition (VEC) for the Property.

REC #3: The east adjacent property (736 East 12th Ave) was observed to be an overgrown lot. During the Phase I ESA site visit, a 55-gallon drum on wheels, four 55-gallon drums stored on the ground, two derelict vehicles, and an aboveground storage tank (AST) were observed on the property. Historical records indicate that this parcel originally contained two dwellings. Based on the close proximity of the drums, derelict vehicles, and AST to the Property, this site is considered to a REC for the Property.

REC #4: The property immediately to the north across East 12th Avenue (729 E. 12thAvenue) has been occupied by an automobile body shop since approximately 1984. Many junked cars were observed on this site during the Phase I ESA site visit. Auto body shops typically use oil-based paints, thinners, and solvents, and junked cars represent a potential for release of petroleum products into the environment. Based on the topography, this site appears to be located

upgradient to the Property. The long-term presence of this adjacent, upgradient facility is considered a REC and a VEC for the Property.

3.0 PROJECT OBJECTIVES AND SCOPE OF WORK

The primary objective of this Limited Phase II ESA was to assess potential impacts to soil and groundwater from the three RECs identified for the Property. The field assessment activities described below were performed in accordance with the SAP (Stantec, 2018b) and standard operating procedures (SOPs) included in the QAPP (Stantec, 2018a). Deviations from the scope of work due to encountered site conditions are also identified below.

- Collection of soil samples at depths of 0 to 0.5 feet below ground surface (bgs) from three soil borings (GP-1 through GP-3) using direct-push technology for polynuclear aromatic hydrocarbons (PAHs), PCBs, and metals analysis.
- Collection of soil samples at a depth of 0 to 0.5 feet bgs and 3 feet bgs from one soil boring (GP-4) using direct-push technology for volatile organic compounds (VOCs), PAHs, and PCBs analysis.
- Collection of soil samples at depths of 0 to 0.5 feet, 6 to 10 feet, and 25 feet bgs, and installation of groundwater monitoring wells for collection of groundwater samples from five borings (GP-5 through GP-9) using direct-push technology. The third soil sample was collected only if evidence of contamination was observed based on field screening (e.g., staining, odor, elevated photoionization detector (PID) readings). Soil samples were analyzed for VOCs, PAHs, and diesel range organics (DRO), and groundwater samples were analyzed for VOCs.
  - Soil samples from just above the soil-groundwater interface (approximately 25 feet bgs) were not collected for analytical testing since no evidence of contamination was observed, except in boring GP-5 at 25 feet bgs where staining, a petroleum odor, and a PID reading of 182 parts per million (ppm) were observed.
  - Groundwater was initially encountered at depths of approximately 25 to 26 feet bgs; therefore, monitoring wells were installed to a maximum depth of 30 feet bgs.
- According to the approved SAP, soil samples from the vadose zone and groundwater may be collected based on the results of field screening. Because field screening did not indicate any obvious signs of impacts, these soil samples were not collected.
- Collection of soil vapor samples from soil vapor sampling points installed to a maximum depth of 5.5 feet bgs in five borings (GP-5 through GP-9) using direct-push technology for VOC analysis.
- Collection of soil vapor samples from soil vapor sampling points installed to a maximum depth of 5.5 feet bgs in
- Analytical methods used are identified in Section 4.3.

4.0 FIELD SAMPLING PROGRAM

4.1 PRELIMINARY FIELD ACTIVITIES

4.1.1 Health and Safety

A site-specific health and safety plan was prepared to describe field sampling activity safety protocols for Stantec employees engaged in the project. At the start of each day of field activities, a safety meeting was held, and safety protocols were reviewed.

4.1.2 Utility Clearance

Prior to conducting fieldwork, the Utility Notification Center was contacted to perform an underground utility locate for the Property. Additionally, GeoTek Alaska, Inc. (GeoTek), was contracted to mark any subsurface utilities or structures at the Property in close proximity to planned sampling locations. This work was completed on October 15, 2018, and fieldwork commenced on October 16, 2018. Boring GP-2 was relocated approximately 5 feet to the southwest and boring GP-4 approximately 1 foot to the north of the planned sampling locations. No underground conflicts were identified for the other planned sampling locations.

4.2 FIELD METHODS

4.2.1 Soil Sampling

GeoTek was contracted to perform the drilling services. GeoTek drilled borings GP-1 through GP-9 (see **Figure 2**) using Geoprobe 6010 and 8040 direct-push drill rigs. Borings GP-1 through GP-3 were drilled to depths of 0.5 feet bgs and boring GP-4 was drilled to a depth of 3 feet bgs for collection of soil samples, and borings GP-5 through GP-9 were drilled to a maximum depth of 30 feet bgs for collection soil samples and installation of temporary groundwater monitoring wells. Stantec observed and documented the field activities, screened soil samples for organic vapors using a PID, documented physical and visual characteristics of the soil for use in preparing geologic logs, and collected and prepared soil samples from select depth intervals for laboratory analysis. Calibration of the PID was performed in accordance with the manufacturer's instructions prior to use.

One soil sample was collected at 0.5 feet bgs from each boring, one sample was collected at 3 feet bgs from boring GP-4, and one sample was collected at 10 feet bgs from borings GP-5 through GP-9 for analytical testing. Additionally, one soil sample was collected at 25 feet bgs from boring GP-5 because the sample exhibited staining, a petroleum odor, and an elevated PID reading (182 ppm). No field indicators of contamination were observed in the other borings.

Following completion of the soil logging and sampling activities, borings GP-1 through GP-4 were backfilled with granular bentonite and the ground surface restored to match surrounding grade. Boring logs for borings GP-5 through GP-9 documenting soil conditions, PID screening results, and the depth intervals for soil samples submitted for laboratory analysis are provided in **Appendix A** and field notes are included as **Appendix B**.

4.2.2 Groundwater Sampling

Five temporary groundwater monitoring wells were installed in borings GP-5 through GP-9 using 1.5-inch inside diameter pre-pack wells with 0.010 slots and 20/40 mesh sand, and 2.5-inch outside diameter Schedule 40 polyvinyl chloride (PVC) risers. Well completion details are included on the boring logs provided in **Appendix A**.

Groundwater sampling was conducted at least 24 hours following installation and was performed by first purging the wells using a submersible pump operating at a low flow rate. Field measurements on the purge water were collected for temperature, pH, conductivity, oxidation-reduction potential, and dissolved oxygen at regular intervals until these parameters stabilized. One primary groundwater sample was collected from each temporary groundwater monitoring well. The groundwater sampling field data sheets are provided as **Appendix C**.

Following the completion of groundwater sampling activities, the pre-pack wells were withdrawn, and the boreholes backfilled with granular bentonite to the ground surface and the ground surface restored to match surrounding grade.

4.2.3 Soil Vapor Sampling

GeoTek installed five soil vapor sampling points, GP-5 through GP-9, using direct-push technology. The sampling points were drilled to a maximum depth of 5.5 feet bgs and set with 5-foot-long, 0.75-inch diameter screens and 0.75-inch diameter Schedule 40 polyvinyl chloride (PVC) risers.

Prior to purging or sampling at each sampling point, a shut-in test was performed to check for leaks in the sampling system. The shut-in test was performed by evacuating the system to about 60 inches of water column. The vacuum was maintained for at least one minute at each sampling point. Following the shut-in test, three liters were purged to ensure that samples are representative of subsurface vapors. Each sampling point was checked for leaks by covering the surface seal with an enclosure containing at least 10% helium. A helium detector was used to screen soil vapor during purging, and to screen soil vapor immediately prior to sample collection after all sample tubing connections had been made. The concentration of helium in the purge sample was not greater than 5% of the shroud concentration; therefore, no ambient air leakage was observed. Leak test results are documented in the field notes (**Appendix B**) on PDF pages 49 – 54 of this report.

Sample collection was accomplished by connecting the sample point tubing to a 1-liter Summa canister equipped with a flow controller that regulates the flow rate into the canister at less than or equal to 200 milliliters per minute. The canister valve was closed when the vacuum gage on the canister read approximately 1 to 2 inches of mercury.

Following the completion of soil vapor sampling activities, the sampling materials were withdrawn, and the boreholes backfilled with granular bentonite to the ground surface and the ground surface restored to match surrounding grade.

4.2.4 Sample Identification and Handling

Samples were transferred directly into laboratory-supplied containers labeled with a unique sample identification, the sample collection time and date, and the requested analyses. Sample containers were checked for integrity and proper lid closure to prevent leakage and then were placed in re-sealable polyethylene bags. Sample containers were packaged into a cooler packed with ice and inert fill materials to cushion the containers during transport to the laboratory. Chain-of-custody (COC) procedures were followed for tracking the possession and handling of samples from the time of field collection through laboratory receipt. The COC record was completed and signed by the sampler after sample collection.

4.2.5 Quality Control Sampling

The following quality control samples were collected and analyzed to provide information on precision, accuracy, representativeness, comparability, and completeness of the data generated:

- One duplicate soil sample and one duplicate groundwater sample were collected at the same time and location, to the extent possible, using the same sampling techniques as the parent samples, and were analyzed for the same analytical methods requested for the parent samples.
- Three trip blanks were prepared by the lab and were kept with the investigative samples throughout the sampling event. Two trip blanks accompanied the soil samples and one trip blank accompanied the groundwater samples, and each were analyzed for VOCs.

4.3 LABORATORY ANALYTICAL METHODS

The samples collected for laboratory analysis were picked up by courier and shipped to the Pace Analytical laboratory in Mt. Juliet, Tennessee. The certified laboratory reports are provided as **Appendix D**. The following analytical methods were used by the laboratory:

- Metals by EPA Methods 6010C and 7470A/7471A;
- PCBs by EPA Method 8082A;
- DRO by Method AK102;
- PAHs by EPA Method 8270D-Selected Ion Monitoring (SIM); and
- VOCs by EPA Method 8260C and TO-15.

5.0 FIELD INVESTIGATION RESULTS

5.1 SUBSURFACE CONDITIONS

In general, soil at the sampled borings to a maximum depth of approximately 32 feet bgs was composed of sand and gravel underlain with silt beginning at approximately 27 feet bgs. No field indicators of contamination were observed in soil samples except in the sample from boring GP-5 at 25 feet bgs, which exhibited staining, a petroleum odor, and an elevated PID reading of 182 ppm.

Groundwater was measured in the temporary wells at depths ranging from 24.43 to 25.46 feet bgs. The water levels were measured at least 24 hours after installation of the wells but prior to purging and were assumed to be stable readings representative of the static water table surface. The inferred shallow groundwater flow direction is to the west-northwest. No field indicators of contamination were observed in groundwater samples except the sample from GP-5, which exhibited a petroleum odor and a sheen on its purge water.

5.2 ANALYTICAL RESULTS

5.2.1 Screening Criteria

The measured constituent concentrations in the samples were compared to the following reference standards:

- For soil samples, the EPA Residential and Industrial Soil Regional Screening Levels (RSLs) (2018) and the Alaska Department of Environmental Conservation (ADEC) Human Health Cleanup Levels for soil (under 40-inch zone) (Tables B1 and B2 of 18 Alaska Administrative Code [AAC] 75 Article 3) (ADEC, 2018a).
- For groundwater samples, the ADEC Human Health Cleanup Levels for groundwater (Table C of 18 AAC 75 Article 3) (ADEC, 2018b).
- For soil vapor samples, the ADEC Soil Gas Residential and Commercial Target Levels (TLs) as stated in the ADEC Vapor Intrusion Guidance for Contaminated Sites (ADEC, 2017b).

In instances where analytes were reported by the laboratory as not detected, but the laboratory reported limit of quantitation (LOQ) (aka reporting limit [RL]) was greater than the ADEC cleanup levels, a value of two times the detection limit (DL) (aka method detection limit [MDL]) was used for comparison. This is consistent with the ADEC guidance document regarding treatment of non-detect values (ADEC, 2017c). In those instances where non-detected analytes, whose values were adjusted to two times the DL, were above the ADEC cleanup levels, their cells are highlighted in Tables 1 and 2 to indicate the exceedance(s).

Analytical data and reference standards are summarized on **Tables 1, 2 and 3**, and the data for constituents detected at concentrations that exceed the screening levels in one or more samples are shown on **Figure 3**.

5.2.2 Soil

Sixteen primary soil samples were collected from nine locations at the Property (GP-1 through GP-9). Samples from each location were analyzed for the following compounds:

- Three primary soil samples collected from borings GP-1 through GP-3 were analyzed for metals, PCBs, and PAHs.
- Two primary soil samples collected from boring GP-4 were analyzed for PCBs, PAHs, and VOCs.
- Eleven primary soil samples collected from boring GP-5 through GP-9 were analyzed for DRO, PAHs, and VOCs.

The analytical data are presented in **Table 1**, and the detected concentrations that exceed screening criteria and respective sample locations are shown on **Figure 3**. The data are summarized below.

Metals

- Arsenic was detected in two of the three primary samples where it was analyzed at concentrations of 2.73 milligrams per kilogram (mg/kg) and 3.98 mg/kg, which exceed the EPA Residential and Industrial RSLs of 0.68 mg/kg and 3 mg/kg, respectively, and the ADEC cleanup level of 0.20 mg/kg.
- Barium, cadmium, chromium, lead, and mercury were detected in the soil samples but at concentrations less than the EPA RSLs and ADEC cleanup levels.

PCBs

- One PCB mixture (Aroclor 1260) was detected in one of the five primary soil samples at a concentration less than the EPA RSLs and ADEC cleanup level established for PCBs.

DRO

- DRO was detected in four of the eleven primary samples where it was analyzed at concentrations less than the ADEC cleanup levels.
- The laboratory method detection limit for the sample collected in boring GP-9 at 0.5 feet bgs was greater than ADEC cleanup level.

PAHs

- Several PAHs were detected in eight of the 16 primary samples where it was analyzed.
- The measured concentrations of benzo(a)pyrene (0.153 mg/kg) in the sample from boring GP-4 at 3 feet bgs exceeds the EPA Residential RSL (0.11 mg/kg) but is less than the ADEC cleanup level (1.5 mg/kg). All other measured concentrations were less than the EPA RSLs (where established) and ADEC cleanup levels.

VOCs

- Several VOCs were detected in the 13 primary samples where it was analyzed.
- The measured concentration of 1,1,2-trichloroethane exceeds the ADEC cleanup level of 0.0014 mg/kg in two primary samples and one duplicate sample: The primary sample and duplicate sample (0.106 mg/kg and 0.0128 mg/kg, respectively) from GP-5 at 0.5 feet bgs and the concentration of 0.170 mg/kg in the sample from boring GP-5 at 25 feet bgs. These concentrations also exceed the EPA Residential RSL of 0.15 mg/kg.
- The measured concentration of naphthalene (0.239 mg/kg) in the soil sample from GP-5 at 25 feet bgs exceeds the ADEC cleanup level of 0.038 mg/kg.
- No other detected concentrations exceed the EPA RSLs and ADEC cleanup levels (where established).
- The laboratory method detection limit for 1,2-dibromo-3-chloropropane, ethylene dibromide, dibromochloromethane, hexachlorobutadiene, 1,1,2-Trichloroethane, 1,2,3-trichloropropane and vinyl chloride exceed the EPA Residential RSLs and ADEC cleanup levels.

5.2.3 Groundwater

Five primary groundwater samples were collected from five borings (GP-5 through GP-9). The samples were analyzed for VOCs. The analytical data are presented in **Table 2** and summarized below.

VOCs

- Two VOCs (chloroform and p-isopropyltoluene) were detected in the primary groundwater samples. No other VOCs were detected in the five primary samples.

- Chloroform was detected in four of the five primary samples at a concentration less than ADEC cleanup level.
- P-isopropyltoluene was detected in one primary sample, but ADEC has not established a cleanup level for this compound.
- The laboratory method detection limit for ethylene dibromide, naphthalene, 1,1,2-trichloroethane, 1,2,3-tricholoropropane, and vinyl chloride in all five primary samples exceed the ADEC cleanup levels.

5.2.4 Soil Vapor

Five soil vapor samples were collected from five borings (GP-8 through GP-12). The samples were analyzed for VOCs. The analytical data are presented in **Table 3** and summarized below.

VOCs

- Several VOCs were detected in the five primary samples, but at concentrations less than ADEC TLs.
- The laboratory method detection limit for ethylene dibromide, hexachlorobutadiene, and 1,1,2-trichloroethane exceeds the ADEC TLs.

5.3 DATA VALIDATION RESULTS

QA/QC procedures were incorporated into both field and laboratory protocols in accordance with the QAPP. The data quality objective (DQO) for this investigation was for the analytical data to be reproducible and of an acceptable quality to allow for comparison with the applicable guidelines/standards summarized in Section 5.2.1. The data quality review is presented as **Appendix E** and the Laboratory Data Review Checklist is included as **Appendix F**. Based on the data quality review, the results indicate that the dataset is acceptable and usable for the purposes of this investigation.

6.0 PRELIMINARY CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) is a representation of the physical, chemical, and biological processes that control the transport, migration, and actual and potential impacts of contamination (in soil, air, groundwater, surface water or sediments) to sensitive receptors. The following CSM is based on the 2018 Phase I ESA and information collected during this investigation, as described above.

6.1 CONTAMINANTS OF CONCERN

Potential contaminant sources are likely related to the past use of the Property as an electrical substation constructed in 1962 and decommissioned in 1990. Based on the 2018 Phase I ESA completed for the Property, potential contaminant sources include the following:

- Potential for leaks/drips or spills of dielectric fluids (oils) from electrical transformers, capacitors and other electrical equipment at the Property.
- Beginning in approximately 1983, the south adjoining property was operated as a car wash and retail gasoline station under the name Ride n' Shine, Gerik Inc. and currently as CPR Automotive. Site investigations at this property identified releases of petroleum hydrocarbons and VOCs to soil and groundwater.
- The apparent use of the Property by CPR to store automobiles, a used-oil tank, and a large pile of tires. These uses may have resulted in leaks or spills or petroleum hydrocarbons, metals and PAHs.

6.2 CONTAMINANT FATE AND TRANSPORT

As noted above, contaminants of concern (COCs) include petroleum, solvents, metals, and PAHs. Petroleum, including PAHs, may be readily degraded in the environment through volatilization, microbial activity, and other naturally-occurring physical and geochemical processes. These contaminants can dissolve in groundwater to varying degrees depending on their individual solubility characteristics. Solubility also affects adsorption and desorption on soils and volatility from aquatic systems, as well as a contaminant's transformation by hydrolysis, photolysis, oxidation, reduction, and biodegradation in water. More soluble compounds (such as benzene) are more likely than less soluble compounds (such as naphthalene) to leach from soil due to precipitation events and enter the groundwater. These contaminants may also volatilize from soil and groundwater into the atmosphere, and therefore can increase vapor intrusion risks. When present as a non-aqueous phase liquid (NAPL), most petroleum compounds' specific gravity of less than 1.0 makes them float on the capillary fringe of the water table where they can act as a continuing source of dissolved contamination to the underlying groundwater. Once dissolved in groundwater, petroleum dispersion can occur through its migration with the advective flow of groundwater. At the time of this investigation, groundwater flow was measured to the west at a maximum horizontal hydraulic gradient of approximately 0.003 feet per foot).

Chlorinated solvents or chlorinated volatile organic compounds (cVOCs) are widely used industrial chemicals and as a result are common contaminants at industrial and other hazardous waste sites. These compounds tend to be heavier than water (specific gravity > 1.0) and as a result tend to sink in soil or groundwater under the influence of gravity until a denser layer is reached that causes the cVOC to pool and start moving horizontally. When present as a NAPL, they can act as a continuing source of dissolved phase contamination to groundwater deep in the aquifer. CVOCs are persistent in the environment and as a result tend to be less amenable to natural attenuation than petroleum compounds. These contaminants may also volatilize from soil and groundwater into the atmosphere, and therefore

can increase vapor intrusion risks. Once dissolved in groundwater, cVOC dispersion can occur through its migration with the advective flow of groundwater (inferred to be west and/or south).

Since metals are elemental contaminants, they cannot be degraded; they can only be dispersed or transformed. Dispersion occurs through migration of dissolved metals with the advective flow of groundwater. Transformation between more or less mobile forms of metals can be affected by redox potential. In addition, since these COCs are positively charged, they will be more likely to bind to soils with higher cation exchange capacities (such as clays or organic materials). Being non-volatile, they do not represent a vapor intrusion risk.

PCBs tend to be persistent in the environment and the extent to which they can be broken down is dependent on the number of chlorine atoms it contains. They can be broken down by direct or indirect sunlight, or by microorganisms. In soil, PCBs are mostly broken down by microorganisms, which are dependent on available nutrients, temperature and types of microorganisms' present. PCBs are hydrophobic and not prone to being dissolved in groundwater but can be transported by groundwater depending upon the conditions. PCBs may also volatilize into the atmosphere and may increase vapor intrusion risks. PCB air exposure is most often associated with energized PCB-containing electrical equipment and building materials such as caulks or sealants.

6.3 POTENTIAL RECEPTORS

The Property consists of approximately 3.67 acres of land on an irregular-shaped parcel located in a mixed-use (residential, commercial, and light industrial) area. The Property is generally flat with a boarded-up residential structure located on a rise in the southeastern corner of the Property and Fish Creek, a channelized stream running south-southwest along the northwestern margin of the Property. Area properties are serviced by the Anchorage Water and & Wastewater Utility municipal water supply, whose source is Eklutna Lake, located in the mountains of Chugach State Park.

During the investigation, groundwater at the Property was measured at depths ranging between 4.97 to 9.09 feet bgs. Potential receptors may include utility workers or future construction workers who conduct excavations that intersect the water table.

6.4 POTENTIAL EXPOSURE PATHWAYS

The potential contaminate migration and exposure pathways for receptors regarding impacted soil and groundwater considered as part of this assessment are discussed below. The narrative includes descriptions of site-specific considerations that increase or decrease the viability of each pathway at the Property. Note that this is a preliminary CSM and reflects only the known document COCS and should be revised as additional site assessment is conducted to address data gaps regarding the nature and extent of impacted media. **Figure 4** provides a visual representation of the CSM for each of the media addressed in the following subsections.

6.4.1 Soil – Direct Contact

Direct contact with impacted soil comprises the incidental ingestion, dermal contact and fugitive dust inhalation exposure routes. Low levels of VOCs were detected in site soils, therefore both exposure routes are complete for site visitors, trespassers and future on-site construction workers. Additionally, uptake of metals to biota is a potential complete exposure route. It should be noted that a complete pathway does not result in unacceptable risk at the Property.

6.4.2 Groundwater

ADEC guidance stipulates that ingestion of groundwater be considered a potentially complete exposure pathway, unless a ground use determination is completed in accordance with 18 AAC 75.350 and that determination finds that the groundwater is not “reasonably expected potential future source of drinking water.” As a result, ingestion and inhalation of VOCs in groundwater are potentially complete exposure pathways for current site users, trespassers and future site users/occupants.

A drinking water well search indicates that nearest active potable water wells are located approximately 1,556 feet to the southwest of the Property boundary at the Golden Nugget RV Park. A cluster of three water wells are also located approximately 1,970 feet to the north/northeast of the Property at Totem Trailer Town.

6.4.3 Air

Volatile COCs have the potential to impact receptors through outdoor inhalation. The presence of volatile COC concentrations in soil within the top 15 feet bgs creates a potentially complete outdoor exposure pathway for site visitors or trespassers. As there are no occupied structures at the Property, the indoor exposure pathway is considered incomplete. However, future land use changes at the Property (i.e. commercial, residential) will likely complete this pathway and require additional evaluation.

7.0 CONCLUSIONS

Stantec completed this Limited Phase II ESA with the primary objective of assessing potential impacts to soil, groundwater, and soil vapor from the RECs identified for the Property. The data results are summarized below.

7.1 SUMMARY OF SOIL ANALYTICAL DATA

- In general, soil at the sampled borings to a maximum depth of approximately 32 feet bgs were composed of sand and gravel underlain with silt beginning at approximately 27 feet bgs. No field indicators of contamination were observed in soil samples except in the sample from boring GP-5 at 25 feet bgs, which exhibited staining, a petroleum odor, and an elevated PID reading of 182 ppm.
- Metals, PCBs, DRO, and PAHs were not detected in soil samples at concentrations that exceed ADEC cleanup levels.
- Arsenic was detected in two soil samples at concentrations that exceed the ADEC cleanup level of 0.20 mg/kg
- The measured 1,1,2-trichloroethane concentration of 0.303 mg/kg from sample DP05 at 2 to 3 feet bgs exceeds the ADEC cleanup level of 0.0014 mg/kg.
- The measured concentration of 1,1,2-trichloroethane exceeds the ADEC cleanup level of 0.0014 mg/kg in two primary soil samples from GP-5 at 0.5 feet bgs and 0.170 mg/kg in the sample from boring GP-5 at 25 feet bgs.
- The measured concentration of naphthalene (0.239 mg/kg) in the soil sample from GP-5 at 25 feet bgs exceeds the ADEC cleanup level of 0.038 mg/kg.

7.1.1 Conclusions and Recommendations for Soil Analytical Data

- For REC #1 (historical use of the Property as an electrical substation), the data results do not indicate any significant leaks or spills from electrical equipment. The presence of PCBs and PAHs were confirmed in a few soil samples, but at concentrations that are less than the ADEC cleanup levels (where established).
- For RECs #2 (former leaking USTs at west adjacent property), the data results confirm the presence of petroleum and petroleum-related compounds in near surface soil samples across the Property and in the deep sample in boring GP-5, but at concentrations less than the ADEC cleanup levels. The pattern is consistent with that which would be associated with historical undocumented releases or leaks to the ground surface of petroleum compounds from vehicles and, in boring GP-5, likely to be attributable to the adjacent property's former leaking USTs.
- For RECs #3 and 4 (east and north adjacent properties), the data results do not indicate the migration of contaminants from off-site sources at concentrations that exceed ADEC cleanup levels in soil.
- The data for constituents for which concentrations exceed ADEC cleanup levels are reportable to ADEC.

7.2 SUMMARY OF GROUNDWATER ANALYTICAL DATA

- Groundwater was measured in the temporary wells at depths ranging from 24.43 to 25.46 feet bgs. The inferred shallow groundwater flow direction is to the west-northwest.
- No field indicators of contamination were observed in groundwater samples except the sample from GP-5, which exhibited a petroleum odor and a sheen on its purge water.
- VOCs were not detected in groundwater samples at concentrations that exceed ADEC cleanup levels.

7.2.1 Conclusions and Recommendations for Groundwater Analytical Data

- For RECs #3 and 4 (east and north adjacent properties), the data results do not indicate the migration of contaminants from off-site sources at concentrations that exceed ADEC cleanup levels in groundwater.

7.3 SUMMARY OF SOIL VAPOR ANALYTICAL DATA

- VOCs were not detected in soil vapor samples at concentrations that exceed ADEC TLs.

7.3.1 Conclusions and Recommendations for Soil Vapor Analytical Data

- For RECs #3 and 4 (east and north adjacent properties), the data results do not indicate the migration of contaminants from off-site sources at concentrations that exceed ADEC TLs in soil vapor.

8.0 LIMITATIONS

This Limited Phase II ESA was performed in accordance with generally accepted practices of the profession for performing similar studies at the same time and in the same geographical area. Stantec observed that degree of care and skill generally exercised by the profession under similar circumstances and conditions. No other warranty is expressed or implied.

Stantec observations, findings, and opinions must not be considered as scientific certainties, but only an opinion based on our professional judgment concerning the significance of the data gathered during the investigation. Specifically, Stantec does not and cannot represent that the Site contains no hazardous or toxic materials or other latent condition beyond that observed by Stantec.

Stantec does not warrant that this submittal represents an exhaustive study of all possible environmental concerns at the project area. The items investigated as part of this study represent likely sources of environmental concerns at the project area and are consequently believed to adequately address the public at risk at the present time.

9.0 REFERENCES

ADEC (Alaska Department of Environmental Conservation), 2018a. State of Alaska Department of Environmental Conservation Human Health Soil Cleanup Levels, Method Two, Soil Over 40 Inch Zone. October.

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ADEC, 2017c. Technical Memo. Guidelines for Treatment of Non-Detect Values, Data reduction for Multiple-Detections and Comparison of Quantitation limits to Cleanup Values. April.

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EPA, 2016. Regional Screening Level (RSL) Summary Table (Revised). May 2016.

EPA, 1993. Test Method for Determination of Asbestos in Bulk Building Material. EPA Method 600/R-93/116. July.

Stantec, 2018a. Quality Assurance Project Plan for Implementation of EPA Assessment Grants at Petroleum and Hazardous Substance Brownfields, Anchorage, Alaska, Cooperative Agreement No. BF-01J39201. June.

Stantec, 2018b. Sampling and Analysis Plan, 3901 Hayes Street, Anchorage, Alaska. August 8.

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TABLES

Table 1
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
726 12th Avenue Property
Anchorage, Alaska

Sample Location		USEPA RSL		ADEC	GP-1	GP-2	GP-3	GP-4		GP-5				GP-6		GP-7		GP-8		GP-9	
Sample Date					16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18
Sample ID					GP-1-0.5	GP-2-0.5	GP-3-0.5	GP-4-0.5	GP-4-3	GP-5-0.5	GP-5-0.5DUP	GP-5-10	GP-5-25	GP-6-0.5	GP-6-10	GP-7-0.5	GP-7-10	GP-8-0.5	GP-8-10	GP-9-0.5	GP-9-10
Sample Depth		Resident Soil	Industrial Soil		0.5 ft	0.5 ft	0.5 ft	0.5 ft	3 ft	0.5 ft	0.5 ft	10 ft	25 ft	0.5 ft	10 ft	0.5 ft	10 ft	0.5 ft	10 ft	0.5 ft	10 ft
Sample Type	Units	A	B	C	Primary	Primary	Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Metals																					
Arsenic	mg/kg	0.68	3.0	0.20	**3.98**	**2.73**	*<0.992*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/kg	1,500	22,000	2,100	**92.1**	**114**	**66.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/kg	n/v	n/v	9.1	**0.185 J**	**1.62**	*<0.1512*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	mg/kg	n/v	n/v	n/v	**27.4**	**36.3**	**37.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	mg/kg	400	800	400	**5.46**	**53.5**	**23.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/kg	1.1	4.6	0.36	**0.0297**	**0.0374**	**0.0401**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	mg/kg	39	580	6.9	*<1.492*	*<1.358*	*<1.338*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	mg/kg	39	580	11	*<0.288*	*<0.262*	*<0.26*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polychlorinated Biphenyls																					
Aroclor 1016	mg/kg	0.41	5.1	n/v	*<0.00842*	*<0.00766*	*<0.00756*	*<0.00726*	*<0.00766*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.20	0.83	n/v	*<0.01292*	*<0.01176*	*<0.0116*	*<0.01114*	*<0.01176*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.17	0.72	n/v	*<0.01004*	*<0.00912*	*<0.0090*	*<0.00866*	*<0.00914*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.23	0.95	n/v	*<0.00766*	*<0.00696*	*<0.00686*	*<0.0066*	*<0.00696*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.23	0.95	n/v	*<0.00758*	*<0.0069*	*<0.0068*	*<0.00654*	*<0.0069*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.12	0.97	n/v	*<0.01136*	*<0.01034*	*<0.01018*	*<0.0098*	*<0.01034*	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.24	0.99	n/v	*<0.0119*	**0.0247**	*<0.01066*	*<0.01026*	*<0.01082*	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/kg	n/v	n/v	1.0	-	**0.0247**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons (AK102/103)																					
TPH - Diesel Range Organics (DRO)	mg/kg	n/v	n/v	250	-	-	-	-	-	*<11.12 UJ*	**9.98 J**	*<10.42 UJ*	**132 J**	**27.6 J**	*<10.52 UJ*	**9.39 J**	*<10.52 UJ*	**35.1 J**	*<10.46 UJ*	*<570 UJ*	*<10.52 UJ*
Polycyclic Aromatic Hydrocarbons (8270D-SIM)																					
Acenaphthene	mg/kg	360	4,500	37	*<0.00146*	**0.00118 J**	**0.00109 J**	*<0.001246*	*<0.001314*	*<0.001308*	*<0.001384*	*<0.001226*	**0.00967**	**0.00193 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.00271 J**	*<0.001238*
Acenaphthylene	mg/kg	n/v	n/v	18	*<0.00146*	*<0.001314*	*<0.001296*	*<0.001246*	*<0.001314*	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	*<0.001286*	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	*<0.00134*	*<0.001238*
Anthracene	mg/kg	1,800	23,000	390	*<0.00146*	**0.00327 J**	**0.00382 J**	**0.00154 J**	**0.0310**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0133**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	*<0.00134*	*<0.001238*
Benzo(a)anthracene	mg/kg	1.1	21	0.70	*<0.00146*	**0.00270 J**	**0.0169**	**0.00606 J**	**0.168**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0300**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.0362 J**	*<0.001238*
Benzo(a)pyrene	mg/kg	0.11	2.1	1.5	*<0.00146*	**0.00543 J**	**0.0175 J**	**0.00719 J**	**0.153**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0219 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.0415 J**	*<0.001238*
Benzo(b)fluoranthene	mg/kg	1.1	21	15	*<0.00146*	**0.00827 J**	**0.0233 J**	**0.00993 J**	**0.193**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0270 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	*<0.00134*	*<0.001238*
Benzo(g,h,i)perylene	mg/kg	n/v	n/v	2,300	*<0.00146*	**0.0169 J**	**0.0229 J**	**0.00679 J**	**0.125**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0192 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.0712 J**	*<0.001238*
Benzo(k)fluoranthene	mg/kg	11	210	150	*<0.00146*	**0.00337 J**	**0.0113 J**	**0.00512 J**	**0.0755**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0105 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	*<0.00134*	*<0.001238*
Chloronaphthalene, 2-	mg/kg	480	6,000	26	*<0.00486*	*<0.00438*	*<0.00432*	*<0.00416*	*<0.00438*	*<0.00436*	*<0.00462*	*<0.00408*	*<0.00466*	*<0.00428*	*<0.00412*	*<0.00428*	*<0.00412*	*<0.00422*	*<0.0041*	*<0.00446*	*<0.00412*
Chrysene	mg/kg	110	2,100	600	*<0.00146*	**0.00384 J**	**0.0163**	**0.00629**	**0.152**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0311**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.0456 J**	*<0.001238*
Dibenzo(a,h)anthracene	mg/kg	0.11	2.1	1.5	*<0.00146*	*<0.00656*	**0.00555 J**	*<0.00622*	**0.0363**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.00440 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.00511 J**	*<0.001238*
Fluoranthene	mg/kg	240	3,000	590	*<0.00146*	**0.00460 J**	**0.0318**	**0.0118**	**0.207**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0522**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.0982 J**	*<0.001238*
Fluorene	mg/kg	240	3,000	36	*<0.00146*	**0.00123 J**	**0.00159 J**	*<0.001246*	**0.00507 J**	*<0.001308*	*<0.001384*	*<0.001226*	**0.0184**	**0.00377 J**	*<0.001236*	*<0.001284*	*<0.001238*	*<0.001268*	*<0.001232*	**0.00538 J**	*<0.001238*
Indeno(1,2,3-cd)pyrene	mg/kg	1.1	21	15	*<0.00146*	**0.00467 J**	**0.0125 J**	**0.00475 J**	**0.101**	*<0.001308*	*<0.001384*	*<0.001226*	*<0.001398*	**0.0175 J**	*<0.001236*	*<0.001284*	*<0.001238*	**0.000706 J**	*<0.001232*	**0.0393 J**	*<0.001238*
Methylnaphthalene, 1-	mg/kg	18	73	0.41	*<0.00486*	**0.00669 J**	*<0.00432*	*<0.00416*	**0.0149 J**	*<0.00436*	*<0.00462*	*<0.00408*	**0.0203 J**	**0.00352 J**	*<0.00412*	*<0.00428*	*<0.00412*	**0.00294 J**	*<0.0041*	**0.00451 J**	*<0.00412*
Methylnaphthalene, 2-	mg/kg	24	300	1.3	*<0.00486*	**0.0188 J**	**0.00353 J**	*<0.00416*	**0.0275**	*<0.00436*	*<0.00462*	*<0.00408*	*<0.00466*	**0.00611 J**	*<0.00412*	*<0.00428*	*<0.00412*	**0.00644 J**	*<0.0041*	**0.00771 J**	*<0.00412*
Naphthalene	mg/kg	3.8	17	0.038	*<0.00486*	**0.00662 J**	**0.00307 J**	*<0.00416*	**0.0134 J**	*<0.00436*	*<0.00462*	*<0.00408*	**0.00782 J**	**0.00469 J**	*<0.00412*	*<0.00428*	*<0.00412*	*<0.00422*	*<0.0041*	**0.0133 J**	*<0.00412*
Phenanthrene	mg/kg	n/v	n/v	39	*<0.00146*	**0.00696**	**0.0132**	**0.00543 J**	**0.0672**	*<0.001308*	*<0.001384*	*<0.001226*	**0.0154**	**0.0480**	*<0.001236*	*<0.001284*	*<0.001238*	**0.00392 J**	*<0.001232*	**0.0446 J**	*<0.001238*
Pyrene	mg/kg	180	2,300	87	*<0.00146*	**0.00706**	**0.0274**	**0.00982**	**0.166**	*<0.001308*	*<0.001384*	*<0.001226*	**0.000790 J**	**0.0745**	*<0.001236*	*<0.001284*	*<0.001238*	**0.00141 J**	*<0.001232*	**0.0739 J**	*<0.001238*
Volatile Organic Compounds (8260C)																					
Acetone	mg/kg	6,100	67,000	38	-	-	-	*<0.0284*	**0.0560**	**0.0717**	*<0.0342*	*<0.0332*	*<0.0328*	*<0.0294*	*<0.030*	*<0.0296*	*<0.0308*	*<0.0356*	*<0.0298*	*<0.0324*	*<0.029*
Acrylonitrile	mg/kg	0.25	1.1	n/v	-	-	-	*<0.00394*	*<0.0042*	*<0.00452*	*<0.00472*	*<0.00458*	*<0.00456*	*<0.00408*	*<0.00418*	*<0.0041*	*<0.00428*	*<0.00494*	*<0.00412*	*<0.00454*	*<0.00408*
Benzene	mg/kg	1.2	5.1	0.022	-	-	-	*<0.00083*	*<0.000884*	**0.00117 J**	**0.00120 J**	**0.00258**	**0.00224 J**	**0.00109**	*<0.000882*	*<0.000864*	*<0.00090*	*<0.00104*	*<0.00087*	*<0.000946*	*<0.000858*
Bromobenzene	mg/kg	29	180	0.36	-	-	-	*<0.00218*	*<0.00232*	*<0.00248*	*<0.0026*	*<0.00254*	*<0.00252*	*<0.00226*	*<0.0023*	*<0.00226*	*<0.00236*	*<0.00272*	*<0.00228*	*<0.0025*	*<0.00226*
Bromodichloromethane	mg/kg	0.29	1.3	0.0043	-	-	-	*<0.001636*	*<0.001744*	*<0.001874*	*<0.001962*	*<0.0019*	*<0.001892*	*<0.00169*	*<0.001738*	*<0.001702*	*<0.001774*	*<0.00204*	*<0.001714*	*<0.001882*	*<0.001692*
Bromoform (Tribromomethane)	mg/kg	19	86	0.10	-	-	-	*<0.01242*	*<0.01322*	*<0.01422*	*<0.0149*	*<0.01442*	*<0.01436*	*<0.01282*	*<0.0132*	*<0.01292*	*<0.01346*	*<0.01556*	*<0.01302*	*<0.01428*	*<0.01284*
Bromomethane (Methyl bromide)	mg/kg	0.68	3	0.024	-	-	-	*<0.00768*	*<0.0082*	*<0.00878*	*<0.00922*	*<0.00892*	*<0.00888*	*<0.00794*	*<0.00816*	*<0.0080*	*<0.00832*	*<0.00962*	*<0.00804*	*<0.00884*	*<0.00794*
Butylbenzene, n-	mg/kg	390	5,800	20	-	-	-	*<0.00798*	*<0.0085*	*<0.00912*	*<0.00956*	*<0.00926*	*<0.00924*	*<0.00824*	*<0.00848*	*<0.0083*	*<0.00862*	*<0.00998*	*<0.00836*	**0.0141 J**	*<0.00824*
Butylbenzene, sec- (2-Phenylbutane)	mg/kg	780	12,000	28	-	-	-	*<0.00526*	*<0.0056*	*<0.00602*	*<0.0063*	*<0.00608*	**0.205 J**	*<0.00542*	*<0.00558*	*<0.00548*	*<0.0057*	*<0.00658*	*<0.0055*	*<0.00604*	*<0.00542*
Butylbenzene, tert-	mg/kg	780	12,000	11	-	-	-	*<0.00322*	*<0.00342*	*<0.00368*	*<0.00386*	*<0.00374*	**0.0122 J**	*<0.00332*	*<0.00342*	*<0.00334*	*<0.00348*	*<0.00404*	*<0.00336*	*<0.0037*	*<0.00332*
Carbon Tetrachloride (Tetrachloromethane)	mg/kg	0.65	2.9	0.021	-	-	-	*<0.00224*	*<0.00238*	*<0.00258*	*<0.0027*	*<0.0026*	*<0.00258*	*<0.00232*	*<0.0024*	*<0.00234*	*<0.00244*	*<0.00282*	*<0.00234*	*<0.00258*	*<0.00232*
Chlorobenzene (Monochlorobenzene)	mg/kg	28	130	0.46	-	-	-	*<0.00119*	*<0.001268*	*<0.00136*	*<0.001428*	*<0.001382*	**0.0174 J**	*<0.001228*	*<0.001264*	*<0.001238*	*<0.001288*	*<0.00149*	*<0.001246*	*<0.001368*	*<0.00123*
Chloroethane (Ethyl Chloride)	mg/kg	1,400	5,700	72	-	-	-	*<0.00224*	*<0.00238*	*<0.00258*	*<0.0027*	*<0.0026*	*<0.00258*	*<0.00232*	*<0.0024*	*<0.00234*	*<0.00244*	*<0.00282*	*<0.00234*	*<0.00258*	*<0.00232*
Chloroform (Trichloromethane)	mg/kg	0.32	1.4	0.0071	-	-	-	*<0.000862*	*<0.000918*	*<0.000986*	*<0.001032*	*<0.001002*	*<0.000996*	*<0.00089*	*<0.000916*	**0.00181 J**	**0.00114 J**	**0.00233 J**	**0.000943 J**	*<0.000992*	**0.00108 J**
Chloromethane	mg/kg	11	46	0.61	-	-	-	*<0.00288*	*<0.00306*	*<0.00332*	*<0.00346*	*<0.00336*	*<0.00334*	*<0.00298*	*<0.00308*	*<0.0030*	*<0.00314*	*<0.00362*	*<0.00302*	*<0.00332*	*<0.00298*
Chlorotoluene, 2-	mg/kg	160	2,300	n/v	-	-	-	*<0.00191*	*<0.00204*	*<0.00218*	*<0.0023*	*<0.0022*	*<0.00222*	*<0.001972*	*<0.00202*	*<0.001988*	*<0.00206*	*<0.00238*	*<0.0020*	*<0.0022*	*<0.001976*
Chlorotoluene, 4-	mg/kg	160	2,300	n/v	-	-	-	*<0.00234*	*<0.0025*	*<0.00268*	*<0.00282*	*<0.00272*	*<0.0027*	*<0.00242*	*<0.0025*	*<0.00244*	*<0.00254*	*<0.00294*	*<0.00246*	*<0.0027*	*<0.00244*
Dibromo-3-Chloropropane, 1,2- (DBCP)	mg/kg	0.0053	0.064	n/v	-	-	-	*<0.01058*	*<0.01128*	*<0.01212*	*<0.0127*	*<0.0123*	*<0.01224*	*<0.01094*	*<0.01126*	*<0.01102*	*<0.01148*	*<0.01326*	*<0.0111*	*<0.01218*	*<0.01094*
Dibromochloromethane	mg/kg	8.3	39	0.0027	-	-	-	*<0.000934*	*<0.000994*	*<0.001068*	*<0.00112*	*<0.001086*	*<0.001082*	*<0.000966*	*<0.000994*	*<0.000972*	*<0.001012*	*<0.00117*	*<0.00098*	*<0.001076*	*<0.000966*
Dibromomethane (Methylene Bromide)	mg/kg	2.4	9.9	0.025	-	-	-	*<0.00208*	*<0.00222*	*<0.00238*	*<0.0025*	*<0.00242*	*<0.0024*	*<0.00214*	*<0.0022*	*<0.00216*	*<0.00224*	*<0.0026*	*<0.00218*	*<0.00238*	*<0.00214*
Dichlorobenzene, 1,2-	mg/kg	180	930	2.4	-	-	-	*<0.00302*	*<0.0032*	*<0.00344*	*<0.00362*	*<0.0035*	*<0.00348*	*<0.0031*	*<0.0032*	*<0.00312*	*<0.00326*	*<0.00376*	*<0.00316*	*<0.00346*	*<0.00312*
Dichlorobenzene, 1,3-	mg/kg	n/v	n/v	2.3	-	-	-	*<0.00352*	*<0.00376*	*<0.00404*	*<0.00424*	*<0.0041*	*<0.00408*	*<0.00364*	*<0.00376*	*<0.00368*	*<0.00382*	*<0.00442*	*<0.0037*	*<0.00406*	*<0.00366*

Table 1
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
726 12th Avenue Property
Anchorage, Alaska

Sample Location		USEPA RSL		ADEC	GP-1	GP-2	GP-3	GP-4		GP-5				GP-6		GP-7		GP-8		GP-9	
Sample Date					16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	16-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18	19-Oct-18
Sample ID					GP-1-0.5	GP-2-0.5	GP-3-0.5	GP-4-0.5	GP-4-3	GP-5-0.5	GP-5-0.5DUP	GP-5-10	GP-5-25	GP-6-0.5	GP-6-10	GP-7-0.5	GP-7-10	GP-8-0.5	GP-8-10	GP-9-0.5	GP-9-10
Sample Depth		Resident Soil	Industrial Soil		0.5 ft	0.5 ft	0.5 ft	0.5 ft	3 ft	0.5 ft	0.5 ft	10 ft	25 ft	0.5 ft	10 ft	0.5 ft	10 ft	0.5 ft	10 ft	0.5 ft	10 ft
Sample Type	Units	A	B	C	Primary	Primary	Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorobenzene, 1,4-	mg/kg	2.6	11	0.037	-	-	-	*<0.00408*	*<0.00436*	*<0.00468*	*<0.00492*	*<0.00474*	*<0.00474*	*<0.00422*	*<0.00434*	*<0.00426*	*<0.00444*	*<0.00512*	*<0.00428*	*<0.00472*	*<0.00424*
Dichlorodifluoromethane (Freon 12)	mg/kg	8.7	37	3.9	-	-	-	*<0.001698*	*<0.00181*	*<0.001946*	*<0.00204*	*<0.001972*	*<0.001962*	*<0.001754*	*<0.001804*	*<0.001768*	*<0.001842*	*<0.00214*	*<0.00178*	*<0.001954*	*<0.001756*
Dichloroethane, 1,1-	mg/kg	3.6	16	0.092	-	-	-	*<0.001194*	*<0.001272*	*<0.001368*	*<0.001432*	*<0.001386*	*<0.00138*	*<0.001234*	*<0.001268*	*<0.001242*	*<0.001294*	*<0.001494*	*<0.001252*	*<0.001372*	*<0.001234*
Dichloroethane, 1,2-	mg/kg	0.46	2	0.0055	-	-	-	*<0.000986*	*<0.001052*	*<0.00113*	*<0.001182*	*<0.001144*	*<0.00114*	*<0.001018*	*<0.001048*	*<0.001026*	*<0.00107*	*<0.001234*	*<0.001034*	*<0.001134*	*<0.00102*
Dichloroethene, 1,1-	mg/kg	23	100	1.2	-	-	-	*<0.001038*	*<0.001106*	*<0.001188*	*<0.001246*	*<0.001206*	*<0.0012*	*<0.001072*	*<0.001102*	*<0.00108*	*<0.001124*	*<0.0013*	*<0.001088*	*<0.001194*	*<0.001074*
Dichloroethene, cis-1,2-	mg/kg	16	230	0.12	-	-	-	*<0.001432*	*<0.001526*	*<0.00164*	*<0.001718*	*<0.001664*	*<0.001658*	*<0.00148*	*<0.001522*	*<0.001492*	*<0.001552*	*<0.001794*	*<0.0015*	*<0.001648*	*<0.001482*
Dichloroethene, trans-1,2-	mg/kg	160	2,300	1.3	-	-	-	*<0.00296*	*<0.00316*	*<0.0034*	*<0.00356*	*<0.00346*	*<0.00342*	*<0.00306*	*<0.00316*	*<0.00308*	*<0.00322*	*<0.00372*	*<0.00312*	*<0.00342*	*<0.00308*
Dichloropropane, 1,2-	mg/kg	1.6	6.6	0.030	-	-	-	*<0.00264*	*<0.0028*	*<0.0030*	*<0.00316*	*<0.00306*	*<0.00306*	*<0.00272*	*<0.0028*	*<0.00274*	*<0.00284*	*<0.0033*	*<0.00278*	*<0.00304*	*<0.00272*
Dichloropropane, 1,3-	mg/kg	160	2,300	n/v	-	-	-	*<0.00364*	*<0.00388*	*<0.00416*	*<0.00436*	*<0.0042*	*<0.0042*	*<0.00376*	*<0.00386*	*<0.00378*	*<0.00394*	*<0.00454*	*<0.00382*	*<0.00418*	*<0.00376*
Dichloropropane, 2,2-	mg/kg	n/v	n/v	n/v	-	-	-	*<0.001646*	*<0.001754*	*<0.001884*	*<0.001974*	*<0.001912*	*<0.001904*	*<0.0017*	*<0.001748*	*<0.001714*	*<0.001784*	*<0.00206*	*<0.001724*	*<0.001892*	*<0.001704*
Dichloropropene, 1,1-	mg/kg	n/v	n/v	n/v	-	-	-	*<0.001454*	*<0.001548*	*<0.001664*	*<0.001744*	*<0.001688*	*<0.00168*	*<0.001502*	*<0.001544*	*<0.001512*	*<0.001574*	*<0.00182*	*<0.001522*	*<0.001672*	*<0.001504*
Dichloropropene, cis-1,3-	mg/kg	n/v	n/v	n/v	-	-	-	*<0.001408*	*<0.0015*	*<0.001612*	*<0.001688*	*<0.001634*	*<0.001628*	*<0.001454*	*<0.001494*	*<0.001466*	*<0.001526*	*<0.001762*	*<0.001476*	*<0.001618*	*<0.001456*
Dichloropropene, trans-1,3-	mg/kg	n/v	n/v	n/v	-	-	-	*<0.00318*	*<0.00338*	*<0.00364*	*<0.0038*	*<0.00368*	*<0.00368*	*<0.00328*	*<0.00338*	*<0.0033*	*<0.00344*	*<0.00398*	*<0.00332*	*<0.00366*	*<0.00328*
Diisopropyl Ether (DIPE)	mg/kg	220	940	n/v	-	-	-	*<0.000726*	*<0.000776*	*<0.000834*	*<0.000872*	*<0.000844*	*<0.00084*	*<0.00075*	*<0.00077*	*<0.000758*	*<0.000788*	*<0.000908*	*<0.000762*	*<0.000834*	*<0.000752*
Ethylbenzene	mg/kg	5.8	25	0.13	-	-	-	*<0.0011*	*<0.001172*	**0.00273 J**	*<0.001318*	*<0.001278*	**0.00249 J**	**0.000645 J**	*<0.001168*	*<0.001144*	*<0.001194*	*<0.001378*	*<0.001154*	**0.00149 J**	*<0.001116*
Ethylene Dibromide (Dibromoethane, 1,2-)	mg/kg	0.036	0.16	0.00024	-	-	-	*<0.00109*	*<0.00116*	*<0.001248*	*<0.001308*	*<0.001266*	*<0.001262*	*<0.001126*	*<0.001158*	*<0.001134*	*<0.00118*	*<0.001366*	*<0.001142*	*<0.001254*	*<0.001128*
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	mg/kg	1.2	5.3	0.020	-	-	-	*<0.0264*	*<0.028*	*<0.030*	*<0.0316*	*<0.0306*	*<0.0306*	*<0.0272*	*<0.028*	*<0.0274*	*<0.0284*	*<0.033*	*<0.0278*	*<0.0304*	*<0.0272*
Isopropylbenzene	mg/kg	190	990	5.6	-	-	-	*<0.001792*	*<0.00191*	**0.00238 J**	*<0.00214*	*<0.00208*	**0.00702 J**	*<0.00185*	*<0.001902*	*<0.001866*	*<0.001942*	*<0.00224*	*<0.001878*	*<0.00204*	*<0.001816*
Isopropyltoluene, p- (Cymene)	mg/kg	n/v	n/v	n/v	-	-	-	*<0.00484*	*<0.00514*	*<0.00554*	*<0.00582*	*<0.00562*	**0.0103 J**	*<0.005*	*<0.00514*	*<0.00502*	*<0.00524*	*<0.00604*	*<0.00506*	*<0.00556*	*<0.0050*
Methyl Ethyl Ketone (MEK) (2-Butanone)	mg/kg	2,700	19,000	15	-	-	-	**0.0240 J**	**0.0654**	**0.0289 J**	**0.0362**	**0.0415**	**0.0857 J**	**0.0463**	**0.0348**	*<0.027*	*<0.028*	*<0.0326*	*<0.027*	*<0.030*	*<0.0268*
Methyl Isobutyl Ketone (MIBK)	mg/kg	3,300	14,000	18	-	-	-	*<0.0208*	*<0.0222*	*<0.0238*	*<0.025*	*<0.0242*	*<0.024*	*<0.0214*	*<0.022*	*<0.0216*	*<0.0224*	*<0.026*	*<0.0218*	*<0.0238*	*<0.0214*
Methyl tert-butyl ether (MTBE)	mg/kg	47	210	0.40	-	-	-	*<0.000612*	*<0.000652*	*<0.000702*	*<0.000736*	*<0.000712*	*<0.000708*	*<0.000632*	*<0.000652*	*<0.000638*	*<0.000664*	*<0.000768*	*<0.000642*	*<0.000706*	*<0.000634*
Methylene Chloride (Dichloromethane)	mg/kg	35	320	0.33	-	-	-	*<0.01378*	*<0.0147*	*<0.0158*	*<0.01654*	*<0.01602*	*<0.01594*	*<0.01424*	*<0.01464*	*<0.01436*	*<0.01494*	*<0.01726*	*<0.01444*	*<0.01584*	*<0.01424*
Naphthalene	mg/kg	3.8	17	0.038	-	-	-	*<0.00648*	*<0.0069*	*<0.0298*	*<0.00778*	*<0.00752*	**0.239 J**	*<0.0067*	*<0.00688*	*<0.00674*	*<0.00702*	*<0.00812*	*<0.0068*	*<0.00738*	*<0.00656*
Propylbenzene, n-	mg/kg	380	2,400	9.1	-	-	-	*<0.00244*	*<0.0026*	**0.0103**	*<0.00292*	*<0.00284*	**0.0220 J**	*<0.00254*	*<0.0026*	*<0.00254*	*<0.00266*	*<0.00306*	*<0.00256*	*<0.0028*	*<0.00248*
Styrene	mg/kg	600	3,500	10	-	-	-	*<0.00566*	*<0.00604*	*<0.0065*	*<0.0068*	*<0.00658*	*<0.00656*	*<0.00586*	*<0.00602*	*<0.0059*	*<0.00616*	*<0.0071*	*<0.00594*	*<0.00652*	*<0.00586*
Tetrachloroethane, 1,1,1,2-	mg/kg	2.0	8.8	0.022	-	-	-	*<0.001038*	*<0.001106*	*<0.001188*	*<0.001246*	*<0.001206*	*<0.0012*	*<0.001072*	*<0.001102*	*<0.00108*	*<0.001124*	*<0.0013*	*<0.001088*	*<0.001194*	*<0.001074*
Tetrachloroethane, 1,1,2,2-	mg/kg	0.60	2.7	0.0030	-	-	-	*<0.00081*	*<0.000864*	*<0.000926*	*<0.00097*	*<0.00094*	*<0.000938*	*<0.000836*	*<0.00086*	*<0.000842*	*<0.000878*	*<0.001014*	*<0.000848*	*<0.00093*	*<0.000838*
Tetrachloroethene (PCE)	mg/kg	8.1	39	0.19	-	-	-	*<0.001454*	*<0.001548*	*<0.001664*	*<0.001744*	*<0.001688*	*<0.00168*	*<0.001502*	*<0.001544*	*<0.001512*	*<0.001574*	**0.00181 J**	**0.000959 J**	*<0.001672*	*<0.001504*
Toluene	mg/kg	490	4,700	6.7	-	-	-	*<0.01038*	*<0.00276*	*<0.01188*	*<0.01246*	*<0.00302*	*<0.012*	*<0.01072*	*<0.00276*	*<0.0027*	*<0.0028*	**0.00612 J**	**0.00277 J**	**0.127 J**	*<0.00264*
Trichlorobenzene, 1,2,3-	mg/kg	6.3	93	0.15	-	-	-	*<0.001298*	*<0.001382*	*<0.001486*	*<0.001556*	*<0.001508*	*<0.001502*	*<0.00134*	*<0.001378*	*<0.00135*	*<0.001406*	*<0.001626*	*<0.001358*	*<0.001494*	*<0.001342*
Trichlorobenzene, 1,2,4-	mg/kg	5.8	26	0.082	-	-	-	*<0.010*	*<0.01066*	*<0.01146*	*<0.012*	*<0.01162*	*<0.01156*	*<0.01034*	*<0.01064*	*<0.01042*	*<0.01084*	*<0.01254*	*<0.01048*	*<0.01152*	*<0.01034*
Trichloroethane, 1,1,1-	mg/kg	810	3,600	32	-	-	-	*<0.00057*	*<0.000608*	*<0.000654*	*<0.000684*	*<0.000662*	*<0.00066*	*<0.00059*	*<0.000606*	*<0.000594*	*<0.00062*	*<0.000714*	*<0.0006*	*<0.000656*	*<0.00059*
Trichloroethane, 1,1,2-	mg/kg	0.15	0.63	0.0014	-	-	-	*<0.001834*	*<0.001954*	**0.106**	**0.0128**	*<0.00212*	**0.170 J**	*<0.001894*	*<0.001948*	*<0.001908*	*<0.001986*	*<0.0023*	*<0.001922*	*<0.0021*	*<0.001896*
Trichloroethene (TCE)	mg/kg	0.41	1.9	0.011	-	-	-	*<0.00083*	*<0.000884*	*<0.00095*	*<0.000996*	*<0.000964*	*<0.00096*	*<0.000858*	*<0.000882*	*<0.000864*	*<0.00090*	*<0.00104*	*<0.00087*	*<0.000956*	*<0.000858*
Trichlorofluoromethane (Freon 11)	mg/kg	2,300	35,000	41	-	-	-	*<0.001038*	*<0.001106*	*<0.001188*	*<0.001246*	*<0.001206*	*<0.0012*	*<0.001072*	*<0.001102*	*<0.00108*	*<0.001124*	*<0.0013*	*<0.001088*	*<0.001194*	*<0.001074*
Trichloropropane, 1,2,3-	mg/kg	0.0051	0.11	0.000031	-	-	-	*<0.01058*	*<0.01128*	*<0.01212*	*<0.0127*	*<0.0123*	*<0.01224*	*<0.01094*	*<0.01126*	*<0.01102*	*<0.01148*	*<0.01326*	*<0.0111*	*<0.01218*	*<0.01094*
Trichlorotrifluoroethane (Freon 113)	mg/kg	670	2,800	310	-	-	-	*<0.001402*	*<0.001494*	*<0.001606*	*<0.00168*	*<0.001626*	*<0.00162*	*<0.001448*	*<0.001488*	*<0.001458*	*<0.00152*	*<0.001754*	*<0.00147*	*<0.001612*	*<0.00145*
Trimethylbenzene, 1,2,3-	mg/kg	34	200	n/v	-	-	-	*<0.00238*	*<0.00254*	**0.0244**	**0.00473 J**	*<0.00278*	*<0.00276*	*<0.00246*	*<0.00254*	*<0.00248*	*<0.00258*	*<0.00298*	*<0.0025*	**0.00202 J**	*<0.00242*
Trimethylbenzene, 1,2,4-	mg/kg	30	180	0.61	-	-	-	*<0.0024*	*<0.00256*	**0.0899**	**0.0127**	**0.00151 J**	**0.0524 J**	**0.00173 J**	*<0.00256*	*<0.0025*	*<0.0026*	*<0.00302*	*<0.00252*	**0.00300 J**	*<0.00244*
Trimethylbenzene, 1,3,5-	mg/kg	27	150	0.66	-	-	-	*<0.00224*	*<0.00238*	**0.0282**	**0.00373 J**	*<0.0026*	*<0.00258*	*<0.00232*	*<0.0024*	*<0.00234*	*<0.00244*	*<0.00282*	*<0.00234*	*<0.00254*	*<0.00228*
Vinyl Chloride	mg/kg	0.059	1.7	0.00080	-	-	-	*<0.001418*	*<0.001512*	*<0.001622*	*<0.001702*	*<0.001646*	*<0.001638*	*<0.001464*	*<0.001506*	*<0.001476*	*<0.001536*	*<0.001776*	*<0.001486*	*<0.001632*	*<0.001466*
Xylenes, Total	mg/kg	58	250	1.5	-	-	-	*<0.00992*	*<0.01058*	**0.0333**	**0.00772 J**	*<0.01152*	*<0.01146*	**0.00554 J**	*<0.01054*	*<0.01034*	*<0.01076*	*<0.01242*	*<0.0104*	**0.00816**	*<0.01008*

Notes:

USEPA RSL	United States Environmental Protection Agency Regional Screening Levels (RSLs)
A	Resident Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)
B	Industrial Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)
ADEC	State of Alaska, Department of Environmental Conservation - Division of Spill Prevention and Response, Contaminated Sites Program
C	Tables B1 and B2 (October 2018). The screening level values presented are the most stringent of the applicable exposure pathway-specific cleanup levels.
0.17	Concentration exceeds the indicated standard A.
6.5	Concentration exceeds the indicated standard C.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Non-detect value exceeds the most stringent of all criteria.
<0.03	Analyte was not detected at a concentration greater than two times (2x) the laboratory method detection limit.
italics	Analyte reported at two times (2x) the laboratory method detection limit.
mg/kg	milligram per kilogram
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
J	The reported result is an estimated value.
UJ	Indicates estimated non-detect.
TPH	Total petroleum hydrocarbons

Table 2
Summary of Groundwater Analytical Results
Limited Phase II Environmental Site Assessment
726 12th Avenue Property
Anchorage, Alaska

Sample Location			GP-5	GP-6		GP-7	GP-8	GP-9
Sample Date			23-Oct-18	23-Oct-18	23-Oct-18	23-Oct-18	23-Oct-18	23-Oct-18
Sample ID		ADEC	GP-5	GP-6	GP-6-DUP	GP-7	GP-8	GP-9
Sample Type	Units	A	Primary	Primary	Field Duplicate	Primary	Primary	Primary
Volatile Organic Compounds (8260C)								
Acetone	µg/L	14,000	*<20*	*<20*	*<20*	*<20*	*<20*	*<20*
Acrolein	µg/L	n/v	*<17.74*	*<17.74*	*<17.74*	*<17.74*	*<17.74*	*<17.74*
Acrylonitrile	µg/L	n/v	*<3.74*	*<3.74*	*<3.74*	*<3.74*	*<3.74*	*<3.74*
Benzene	µg/L	4.6	*<0.662*	*<0.662*	*<0.662*	*<0.662*	*<0.662*	*<0.662*
Bromobenzene	µg/L	62	*<0.704*	*<0.704*	*<0.704*	*<0.704*	*<0.704*	*<0.704*
Bromodichloromethane	µg/L	1.3	*<0.76*	*<0.76*	*<0.76*	*<0.76*	*<0.76*	*<0.76*
Bromoform (Tribromomethane)	µg/L	33	*<0.938*	*<0.938*	*<0.938*	*<0.938*	*<0.938*	*<0.938*
Bromomethane (Methyl bromide)	µg/L	7.5	*<1.732*	*<1.732*	*<1.732*	*<1.732*	*<1.732*	*<1.732*
Butylbenzene, n-	µg/L	1,000	*<0.722*	*<0.722*	*<0.722*	*<0.722*	*<0.722*	*<0.722*
Butylbenzene, sec- (2-Phenylbutane)	µg/L	2,000	*<0.73*	*<0.73*	*<0.73*	*<0.73*	*<0.73*	*<0.73*
Butylbenzene, tert-	µg/L	690	*<0.798*	*<0.798*	*<0.798*	*<0.798*	*<0.798*	*<0.798*
Carbon Tetrachloride (Tetrachloromethane)	µg/L	4.6	*<0.758*	*<0.758*	*<0.758*	*<0.758*	*<0.758*	*<0.758*
Chlorobenzene (Monochlorobenzene)	µg/L	78	*<0.696*	*<0.696*	*<0.696*	*<0.696*	*<0.696*	*<0.696*
Chloroethane (Ethyl Chloride)	µg/L	21,000	*<0.906*	*<0.906*	*<0.906*	*<0.906*	*<0.906*	*<0.906*
Chloroform (Trichloromethane)	µg/L	2.2	*<0.648*	**0.622 J**	**0.606 J**	**1.25 J**	**0.932 J**	**1.11 J**
Chloromethane	µg/L	190	*<0.552*	*<0.552*	*<0.552*	*<0.552*	*<0.552*	*<0.552*
Chlorotoluene, 2-	µg/L	n/v	*<0.75*	*<0.75*	*<0.75*	*<0.75*	*<0.75*	*<0.75*
Chlorotoluene, 4-	µg/L	n/v	*<0.702*	*<0.702*	*<0.702*	*<0.702*	*<0.702*	*<0.702*
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	n/v	*<2.66*	*<2.66*	*<2.66*	*<2.66*	*<2.66*	*<2.66*
Dibromochloromethane	µg/L	8.7	*<0.654*	*<0.654*	*<0.654*	*<0.654*	*<0.654*	*<0.654*
Dibromomethane (Methylene Bromide)	µg/L	8.3	*<0.692*	*<0.692*	*<0.692*	*<0.692*	*<0.692*	*<0.692*
Dichlorobenzene, 1,2-	µg/L	300	*<0.698*	*<0.698*	*<0.698*	*<0.698*	*<0.698*	*<0.698*
Dichlorobenzene, 1,3-	µg/L	300	*<0.44*	*<0.44*	*<0.44*	*<0.44*	*<0.44*	*<0.44*
Dichlorobenzene, 1,4-	µg/L	4.8	*<0.548*	*<0.548*	*<0.548*	*<0.548*	*<0.548*	*<0.548*
Dichlorodifluoromethane (Freon 12)	µg/L	200	*<1.102*	*<1.102*	*<1.102*	*<1.102*	*<1.102*	*<1.102*
Dichloroethane, 1,1-	µg/L	28	*<0.518*	*<0.518*	*<0.518*	*<0.518*	*<0.518*	*<0.518*
Dichloroethane, 1,2-	µg/L	1.7	*<0.722*	*<0.722*	*<0.722*	*<0.722*	*<0.722*	*<0.722*
Dichloroethene, 1,1-	µg/L	280	*<0.796*	*<0.796*	*<0.796*	*<0.796*	*<0.796*	*<0.796*
Dichloroethene, cis-1,2-	µg/L	36	*<0.52*	*<0.52*	*<0.52*	*<0.52*	*<0.52*	*<0.52*
Dichloroethene, trans-1,2-	µg/L	360	*<0.792*	*<0.792*	*<0.792*	*<0.792*	*<0.792*	*<0.792*
Dichloropropane, 1,2-	µg/L	8.2	*<0.612*	*<0.612*	*<0.612*	*<0.612*	*<0.612*	*<0.612*
Dichloropropane, 1,3-	µg/L	n/v	*<0.732*	*<0.732*	*<0.732*	*<0.732*	*<0.732*	*<0.732*
Dichloropropane, 2,2-	µg/L	n/v	*<0.642*	*<0.642*	*<0.642*	*<0.642*	*<0.642*	*<0.642*
Dichloropropene, 1,1-	µg/L	n/v	*<0.704*	*<0.704*	*<0.704*	*<0.704*	*<0.704*	*<0.704*
Dichloropropene, cis-1,3-	µg/L	n/v	*<0.836*	*<0.836*	*<0.836*	*<0.836*	*<0.836*	*<0.836*
Dichloropropene, trans-1,3-	µg/L	n/v	*<0.838*	*<0.838*	*<0.838*	*<0.838*	*<0.838*	*<0.838*
Diisopropyl Ether (DIPE)	µg/L	n/v	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*
Ethylbenzene	µg/L	15	*<0.768*	*<0.768*	*<0.768*	*<0.768*	*<0.768*	*<0.768*
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.075	*<0.762*	*<0.762*	*<0.762*	*<0.762*	*<0.762*	*<0.762*
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/L	1.4	*<0.512*	*<0.512*	*<0.512*	*<0.512*	*<0.512*	*<0.512*
Isopropylbenzene	µg/L	450	*<0.652*	*<0.652*	*<0.652*	*<0.652*	*<0.652*	*<0.652*
Isopropyltoluene, p- (Cymene)	µg/L	n/v	**0.485 J**	*<0.70*	*<0.70*	*<0.70*	*<0.70*	*<0.70*
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/L	5,600	*<7.86*	*<7.86*	*<7.86*	*<7.86*	*<7.86*	*<7.86*
Methyl Isobutyl Ketone (MIBK)	µg/L	6,300	*<4.28*	*<4.28*	*<4.28*	*<4.28*	*<4.28*	*<4.28*
Methyl tert-butyl ether (MTBE)	µg/L	140	*<0.734*	*<0.734*	*<0.734*	*<0.734*	*<0.734*	*<0.734*
Methylene Chloride (Dichloromethane)	µg/L	110	*<2.0*	*<2.0*	*<2.0*	*<2.0*	*<2.0*	*<2.0*
Naphthalene	µg/L	1.7	*<2.0*	*<2.0*	*<2.0*	*<2.0*	*<2.0*	*<2.0*
Propylbenzene, n-	µg/L	660	*<0.698*	*<0.698*	*<0.698*	*<0.698*	*<0.698*	*<0.698*
Styrene	µg/L	1,200	*<0.614*	*<0.614*	*<0.614*	*<0.614*	*<0.614*	*<0.614*
Tetrachloroethane, 1,1,1,2-	µg/L	5.7	*<0.77*	*<0.77*	*<0.77*	*<0.77*	*<0.77*	*<0.77*
Tetrachloroethane, 1,1,2,2-	µg/L	0.76	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*
Tetrachloroethene (PCE)	µg/L	41	*<0.744*	*<0.744*	*<0.744*	*<0.744*	*<0.744*	*<0.744*
Toluene	µg/L	1,100	*<0.824*	*<0.824*	*<0.824*	*<0.824*	*<0.824*	*<0.824*
Trichlorobenzene, 1,2,3-	µg/L	7.0	*<0.46*	*<0.46*	*<0.46*	*<0.46*	*<0.46*	*<0.46*
Trichlorobenzene, 1,2,4-	µg/L	4.0	*<0.71*	*<0.71*	*<0.71*	*<0.71*	*<0.71*	*<0.71*
Trichloroethane, 1,1,1-	µg/L	8,000	*<0.638*	*<0.638*	*<0.638*	*<0.638*	*<0.638*	*<0.638*
Trichloroethane, 1,1,2-	µg/L	0.41	*<0.766*	*<0.766*	*<0.766*	*<0.766*	*<0.766*	*<0.766*
Trichloroethene (TCE)	µg/L	2.8	*<0.796*	*<0.796*	*<0.796*	*<0.796*	*<0.796*	*<0.796*
Trichlorofluoromethane (Freon 11)	µg/L	5,200	*<2.4*	*<2.4*	*<2.4*	*<2.4*	*<2.4*	*<2.4*
Trichloropropane, 1,2,3-	µg/L	0.0075	*<1.614*	*<1.614*	*<1.614*	*<1.614*	*<1.614*	*<1.614*
Trichlorotrifluoroethane (Freon 113)	µg/L	10,000	*<0.606*	*<0.606*	*<0.606*	*<0.606*	*<0.606*	*<0.606*
Trimethylbenzene, 1,2,3-	µg/L	n/v	*<0.642*	*<0.642*	*<0.642*	*<0.642*	*<0.642*	*<0.642*
Trimethylbenzene, 1,2,4-	µg/L	56	*<0.746*	*<0.746*	*<0.746*	*<0.746*	*<0.746*	*<0.746*
Trimethylbenzene, 1,3,5-	µg/L	60	*<0.774*	*<0.774*	*<0.774*	*<0.774*	*<0.774*	*<0.774*
Vinyl Chloride	µg/L	0.19	*<0.518*	*<0.518*	*<0.518*	*<0.518*	*<0.518*	*<0.518*
Xylenes, Total	µg/L	190	*<2.12*	*<2.12*	*<2.12*	*<2.12*	*<2.12*	*<2.12*

Notes:

ADEC	State of Alaska, Department of Environmental Conservation - Division of Spill Prevention and Response, Contaminated Sites Program (2/1/2018) - Cleanup Levels for Tables B1 and C - 18 AAC 75 Article 3
A	Groundwater Cleanup Levels
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Non-detect value exceeds the most stringent of all criteria.
<0.03	Analyte was not detected at a concentration greater than two times (2x) the laboratory method detection limit.
italics	Analyte reported at two times (2x) the laboratory method detection limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
J	The reported result is an estimated value.
µg/L	micrograms per liter

Table 3
Summary of Soil Vapor Analytical Results
Limited Phase II Environmental Site
726 12th Avenue Property
Anchorage, Alaska

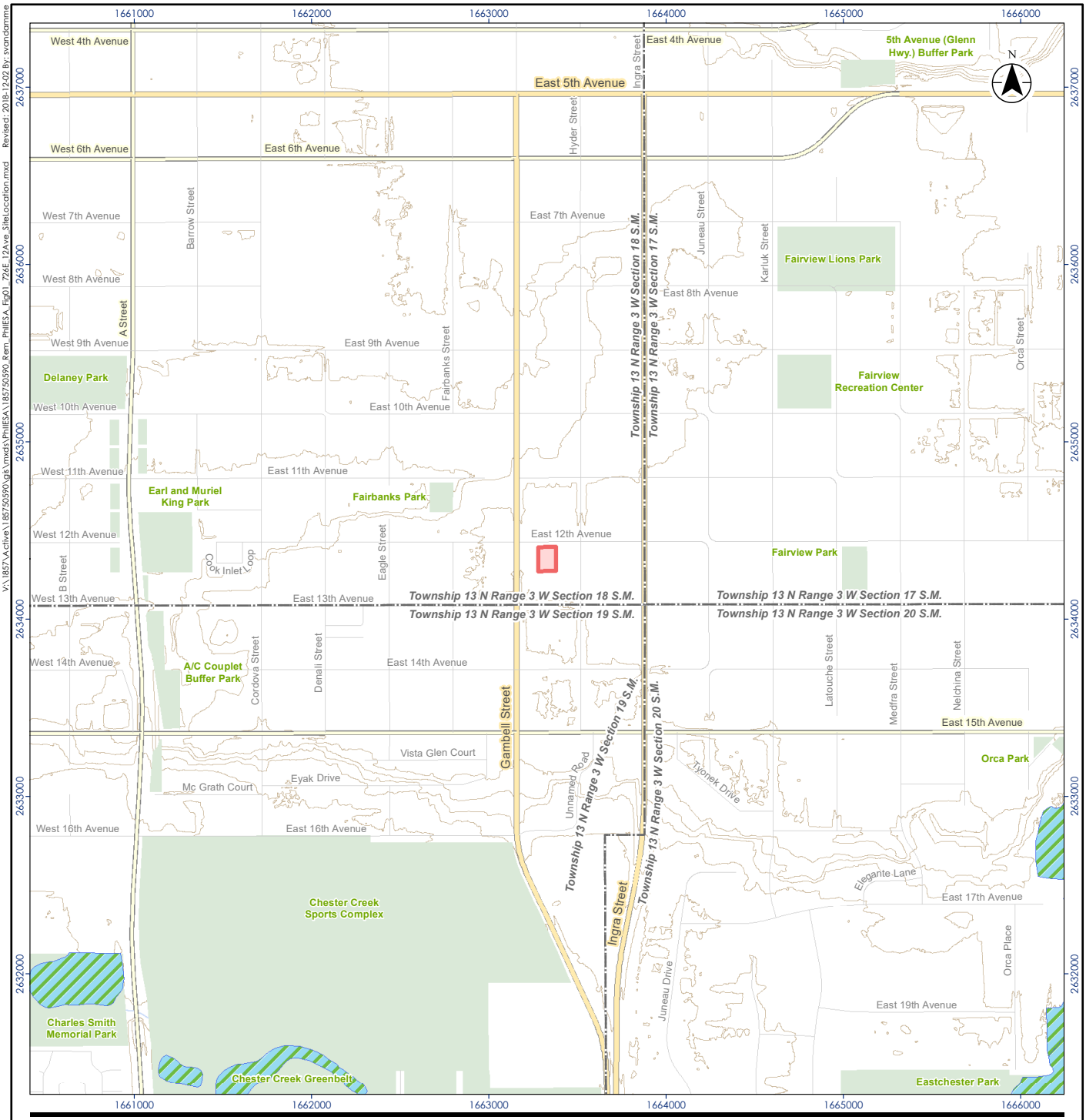
Sample Location Sample Date Sample ID Sample Type	Units	ADEC Soil Gas TLs Residential A	 Commercial B	GP-5 2-Nov-18 GP-5 Primary	GP-6 2-Nov-18 GP-6 Primary	GP-7 2-Nov-18 GP-7 Primary	GP-8 2-Nov-18 GP-8 Primary	GP-9 2-Nov-18 GP-9 Primary
Volatile Organic Compounds (TO-15)								
Acetone	µg/m3	320,000	1,400,000	<5.94	<5.94	**7.56**	**9.87**	**7.58**
Allyl chloride (3-Chloropropene)	µg/m3	n/v	n/v	<1.25	<1.25	<1.25	<1.25	<1.25
Benzene	µg/m3	36	160	<1.28	<1.28	<1.28	<1.28	<1.28
Benzyl Chloride	µg/m3	n/v	n/v	<2.08	<2.08	<2.08	<2.08	<2.08
Bromodichloromethane	µg/m3	7.6	33	<2.68	<2.68	<2.68	<2.68	<2.68
Bromoform (Tribromomethane)	µg/m3	260	1,100	<12.4	<12.4	<12.4	<12.4	<12.4
Bromomethane (Methyl bromide)	µg/m3	52	220	<1.55	<1.55	<1.55	<1.55	<1.55
Butadiene, 1,3-	µg/m3	9.4	41	<8.85	<8.85	<8.85	<8.85	<8.85
Carbon Disulfide	µg/m3	7,300	31,000	<1.24	<1.24	<1.24	<1.24	<1.24
Carbon Tetrachloride (Tetrachloromethane)	µg/m3	47	200	<2.52	<2.52	<2.52	<2.52	<2.52
Chlorobenzene (Monochlorobenzene)	µg/m3	520	2,200	<1.85	<1.85	<1.85	<1.85	<1.85
Chloroethane (Ethyl Chloride)	µg/m3	100,000	440,000	<1.06	<1.06	<1.06	<1.06	<1.06
Chloroform (Trichloromethane)	µg/m3	12	53	<1.95	<1.95	<1.95	<1.95	<1.95
Chloromethane	µg/m3	940	3,900	<0.826	<0.826	<0.826	<0.826	<0.826
Chlorotoluene, 2-	µg/m3	n/v	n/v	<2.06	<2.06	<2.06	<2.06	<2.06
Cyclohexane	µg/m3	63,000	260,000	<1.38	<1.38	<1.38	<1.38	<1.38
Dibromochloromethane	µg/m3	n/v	n/v	<3.40	<3.40	<3.40	<3.40	<3.40
Dichlorobenzene, 1,2-	µg/m3	2,100	8,800	<2.40	<2.40	<2.40	<2.40	<2.40
Dichlorobenzene, 1,3-	µg/m3	2,100	8,800	<2.40	<2.40	<2.40	<2.40	<2.40
Dichlorobenzene, 1,4-	µg/m3	26	110	<2.40	<2.40	<2.40	<2.40	<2.40
Dichlorodifluoromethane (Freon 12)	µg/m3	1,000	4,400	**2.24**	**2.10**	<1.98	**2.06**	**2.20**
Dichloroethane, 1,1-	µg/m3	180	770	<1.60	<1.60	<1.60	<1.60	<1.60
Dichloroethane, 1,2-	µg/m3	11	47	<1.62	<1.62	<1.62	<1.62	<1.62
Dichloroethene, 1,1-	µg/m3	2,100	8,800	<1.59	<1.59	<1.59	<1.59	<1.59
Dichloroethene, cis-1,2-	µg/m3	n/v	n/v	<1.59	<1.59	<1.59	<1.59	<1.59
Dichloroethene, trans-1,2-	µg/m3	n/v	n/v	<1.59	<1.59	<1.59	<1.59	<1.59
Dichloropropane, 1,2-	µg/m3	28	120	<1.85	<1.85	<1.85	<1.85	<1.85
Dichloropropene, cis-1,3-	µg/m3	n/v	n/v	<1.82	<1.82	<1.82	<1.82	<1.82
Dichloropropene, trans-1,3-	µg/m3	n/v	n/v	<1.82	<1.82	<1.82	<1.82	<1.82
Dichlorotetrafluoroethane, 1,2- (Freon 114)	µg/m3	n/v	n/v	<2.80	<2.80	<2.80	<2.80	<2.80
Dioxane, 1,4-	µg/m3	56	250	<1.44	<1.44	<1.44	<1.44	<1.44
Ethanol	µg/m3	n/v	n/v	**6.22**	<2.38	**3.72**	**4.55**	**5.88**
Ethylbenzene	µg/m3	110	490	**2.00**	<1.73	**2.03**	**2.06**	**3.65**
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/m3	0.47	2.0	<3.08	<3.08	<3.08	<3.08	<3.08
Ethyltoluene, 4-	µg/m3	n/v	n/v	<1.96	<1.96	<1.96	<1.96	<1.96
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/m3	13	56	<13.5	<13.5	<13.5	<13.5	<13.5
Hexane (n-Hexane)	µg/m3	7,300	31,000	<1.41	<1.41	**1.85**	<1.41	<1.41
Hexanone, 2- (Methyl Butyl Ketone)	µg/m3	310	1,300	<10.2	<10.2	<10.2	<10.2	<10.2
Isopropyl Alcohol (2-Propanol)	µg/m3	2,100	8,800	<6.15	<6.15	<6.15	<6.15	<6.15
Isopropylbenzene	µg/m3	4,200	18,000	<1.97	<1.97	<1.97	<1.97	<1.97
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/m3	52,000	220,000	<7.37	<7.37	<7.37	<7.37	<7.37
Methyl Isobutyl Ketone (MIBK)	µg/m3	31,000	130,000	<10.2	<10.2	<10.2	<10.2	<10.2
Methyl Methacrylate	µg/m3	n/v	n/v	<1.64	<1.64	<1.64	<1.64	<1.64
Methyl tert-butyl ether (MTBE)	µg/m3	1,100	4,700	<1.44	<1.44	<1.44	<1.44	<1.44
Methylene Chloride (Dichloromethane)	µg/m3	6,300	26,000	<1.39	<1.39	<1.39	<1.39	<1.39
M-P-Xylene	µg/m3	n/v	n/v	**8.27**	<3.47	**8.09**	**8.98**	**15.5**
Naphthalene	µg/m3	8.3	36	<6.60	<6.60	<6.60	<6.60	<6.60
n-Heptane	µg/m3	n/v	n/v	<1.64	<1.64	<1.64	<1.64	<1.64
Propene	µg/m3	n/v	n/v	<1.38	<1.38	**1.99**	<1.38	<1.38
Styrene	µg/m3	10,000	44,000	<1.70	<1.70	<1.70	<1.70	<1.70
Tetrachloroethane, 1,1,2,2-	µg/m3	4.8	21	<2.75	<2.75	<2.75	<2.75	<2.75
Tetrachloroethene (PCE)	µg/m3	410	1,800	<2.72	**2.78**	<2.72	<2.72	<2.72
Tetrahydrofuran	µg/m3	n/v	n/v	**1.19**	<1.18	<1.18	**1.26**	**1.47**
Toluene	µg/m3	52,000	220,000	**9.64**	**2.27**	**9.09**	**8.32**	**16.3**
TPH - Gasoline	µg/m3	n/v	n/v	<413	<413	<413	<413	<413
Trichlorobenzene, 1,2,4-	µg/m3	21	88	<9.33	<9.33	<9.33	<9.33	<9.33
Trichloroethane, 1,1,1-	µg/m3	52,000	220,000	<2.18	<2.18	<2.18	<2.18	<2.18
Trichloroethane, 1,1,2-	µg/m3	2.1	8.8	<2.18	<2.18	<2.18	<2.18	<2.18
Trichloroethene (TCE)	µg/m3	20	84	<2.14	<2.14	<2.14	<2.14	<2.14
Trichlorofluoromethane (Freon 11)	µg/m3	n/v	n/v	**4.57**	**5.34**	**16.1**	**16.4**	**15.9**
Trichlorotrifluoroethane (Freon 113)	µg/m3	310,000	1,300,000	<3.07	<3.07	<3.07	<3.07	<3.07
Trimethylbenzene, 1,2,4-	µg/m3	73	310	<1.96	<1.96	<1.96	**2.21**	**2.49**
Trimethylbenzene, 1,3,5-	µg/m3	n/v	n/v	<1.96	<1.96	<1.96	<1.96	<1.96
Trimethylpentane, 2,2,4-	µg/m3	n/v	n/v	<1.87	<1.87	<1.87	<1.87	<1.87
Vinyl Acetate	µg/m3	2,100	8,800	<1.41	<1.41	<1.41	<1.41	<1.41
Vinyl Bromide (Bromoethene)	µg/m3	n/v	n/v	<1.75	<1.75	<1.75	<1.75	<1.75
Vinyl Chloride	µg/m3	17	280	<1.02	<1.02	<1.02	<1.02	<1.02
Xylene, o-	µg/m3	n/v	n/v	**2.84**	<1.73	**2.96**	**3.15**	**5.27**

Notes:

ADEC Soil Gas TLs	ADEC Soil Gas TLs - State of Alaska Department of Environmental Conservation Vapor Intrusion Guidance for Contaminated Sites (Nov 2017), Target Levels for Exterior or Subslab Soil Gas
A	Residential Soil Gas
B	Commercial Soil Gas
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Non-detect value exceeds the most stringent of all criteria.
<0.03	Analyte was not detected at a concentration greater than the reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
µg/m3	microgram per cubic meter

Stantec

FIGURES



- Approximate Property Boundary
- Minor Road
- Major Road
- Expressway / Highway
- Topographic Contour (feet AMSL)
- Watercourse
- Park Land
- Township/Range Section
- Wetland

0 400 800 Feet

1:10,000 (at original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Base features produced by the Municipality of Anchorage, Alaska. https://www.muni.org/Departments/OCPD/GIS2/Pages/GISDataDownloads.aspx. Accessed on October 21, 2018.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.
4. f AMSL - feet above mean sea level.

Stantec

Project Location
726 E. 12 Ave
Anchorage, Alaska

185750590 REVA
Prepared by SVD on 12/2/2018
Technical Review by BCC on 10/22/2018

Client/Project
Anchorage EPA Brownfield CWA
Phase II Environmental Site Assessment

Figure No.
1

Title
Site Location Map

V:\1857\Active\185750590\gis\mxds\PhIIESA\185750590_Rem_PhIIESA_Fig01_726E_12Ave_SiteLocation.mxd Revised: 2018-12-02 By: svandamme

Stantec

- ▲ Soil Sample Location
- Soil Gas, Soil and Groundwater Sample Location
- Approximate Property Boundary

0 25 50 Feet

1:300 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Base features produced by the Municipality of Anchorage, Alaska. https://www.muni.org/Departments/OCPD/GIS2/Pages/GISDataDownloads.aspx. Accessed on October 21, 2018.
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. Site features are based on field observations and should be considered approximate.
5. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.

Project Location
726 E. 12 Ave
Anchorage, Alaska

185750590 REVA
Prepared by SVD on 12/2/2018
Technical Review by BCC on 10/22/2018

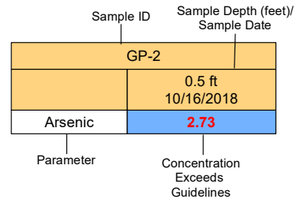
Client/Project
Anchorage EPA Brownfield CWA
Phase II Environmental Site Assessment

Figure No.
2

Title
Site Plan

Stantec

- Soil Sample Location
- Soil Gas, Soil and Groundwater Sample Location
- 11.54 Groundwater Depth (in feet below TOC)
- Approximate Property Boundary
- Concentration Exceeds EPA RSL Industrial Soil
- Concentration Exceeds ADEC Soil Cleanup Levels Under 40 In. Zone (Migration to Groundwater)



Parameter	Units	USEPA RSL (Residential /Industrial)	ADEC
Arsenic	mg/kg	0.68/3	8.8
Benzo(a)pyrene	mg/kg	0.11/2.1	1.5
Naphthalene	mg/kg	3.8/17	29

0 20 40 Feet
1:300 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Base features produced by the Municipality of Anchorage, Alaska. https://www.muni.org/Departments/OCPD/GIS2/Pages/GISDataDownloads.aspx. Accessed on October 21, 2018.
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. Site features are based on field observations and should be considered approximate.
5. USEPA RSL - United States Environmental Protection Agency Regional Screening Levels (RSLs)
6. ADEC - State of Alaska, Department of Environmental Conservation Human Health Soil Cleanup Levels, Method Two, Soil Under 40 Inch Zone (October 2018).
7. groundwater depths are in feet below top of casing - no elevation data.

Project Location
726 E. 12 Ave
Anchorage, Alaska

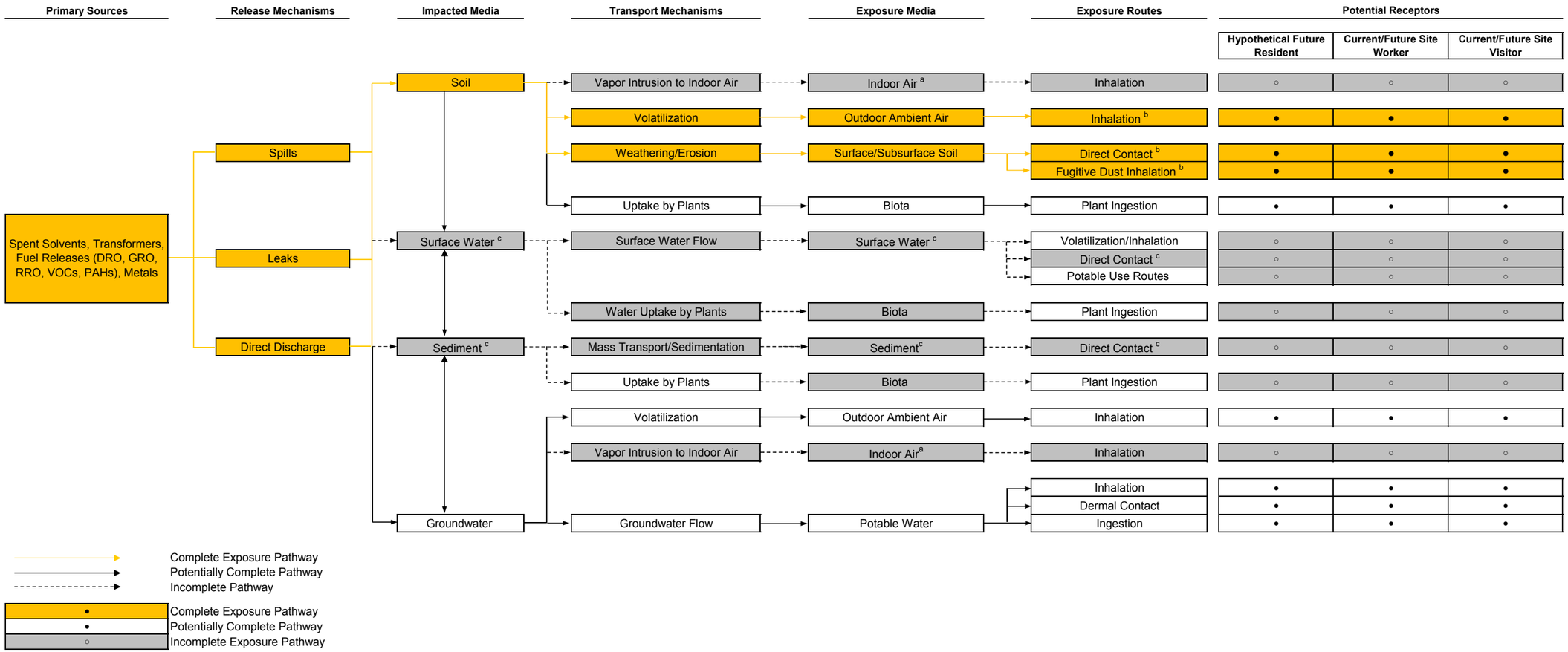
185750590 REVA
Prepared by SVD on 4/2/2019
Technical Review by BCC on 10/22/2018

Client/Project
Anchorage EPA Brownfield CWA
Phase II Environmental Site Assessment

Figure No.
3

Title
Summary of Soil Analytical Results - October 2018

Figure 4 Human Health Conceptual Site Model



Notes:

[a] There are no structures at the Property.

[b] Direct Contact means exposure through both incidental ingestion and dermal absorption of soil and groundwater.

[c] No surface water or sediment is present at the Site.

DRO - diesel range organics
GRO - gasoline range organics
PAH - polynuclear aromatic hydrocarbons
RRO - residual range organics
USTs - Underground Storage Tanks
VOCs - volatile organic compounds

APPENDIX A

Boring Logs

PROJECT: Limited Phase II Site Assessment
LOCATION: 726 12th Ave. Anchorage, AK
PROJECT NUMBER: 185750590

WELL / PROBEHOLE / BOREHOLE NO: GP-5
PAGE 1 OF 1

Stantec

DRILLING: STARTED 10/16/18 COMPLETED: 10/18/18
INSTALLATION: STARTED 10/18/18 COMPLETED: 10/18/18
DRILLING COMPANY: Geotech ALASKA
DRILLING EQUIPMENT: Geoprobe 6040
DRILLING METHOD: DIRECT PUSH RIG
SAMPLING EQUIPMENT: 5' DISPOSABLE NYLON SLEEVES

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): 26'
BOREHOLE DEPTH (ft): 32'
STATIC DTW (ft):
WELL DEPTH (ft): ~~32'~~ 28'
WELL CASING DIAMETER (in): 2"
BOREHOLE DIAMETER (in): 4.5"
LOGGED BY: DB
CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	PID (ppm)	Depth (feet)
			4" Asphalt						
		SM	75% F-C SAND, 25% SILT		GP-6-0.5 14:53	5'	—	0.3	0.5
2'			DRY. WELL GRADED. NO ODOR / STAIN. 10YR 2/1 (BLACK) SAND W/ SILT						
			2'						
2.5'		ML	75% SILT. 25% FINE SAND MOIST. NO ODOR / STAIN 10YR 3.5/3 (DK BROWN) SILT W/ SAND						
			2.5'						
3'		SP	90% F-M SAND 10% SILT MOIST. NO ODOR / STAIN. MOD GRADED 10YR 4/1 (DK. GRAY) SAND L/ SILT						
			3'						
			SAND L/ SILT (AS ABOVE)						
5'		SW				5'		0.6	5
			5'						
		GM	30% F-C SAND. 55% F GRAVEL (SUBA-SUBR) 15% SILT. MOIST. NO ODOR / STAIN. WELL GRADED 10YR 3/1 (VERY DK. GRAY) SANDY GRAVEL S/ SILT						
6.5'			6.5'						
			SANDY GRAVEL S/ SILT (AS ABOVE)						
		GM			GP-6-10 15:10	5'		0.4	10
11.5'			11.5'						
		SW	80% F-C SAND 20% F GRAV (SUBR-SUBA) MOIST NO ODOR / STAIN WELL GRADED 10 YR 3/2 (VERY DK. GRAYISH BRN) SAND W/ GRAVEL						
13.5'			13.5'						
		SW	100% F-C SAND. MOIST. NO ODOR / STAIN WELL GRD. 10YR 3/2 CLEAN SAND						
15'			15'			5'		1.1	15
		SW	30% GRAVEL (FINE, SUB RND.) 70% SAND (F-C) MOIST WELL GRADED. NO ODOR / STAIN. 10YR 3/2 (VERY DK. GRAYISH BRN) GRAVELLY SAND						
21'			21'			5'		0.8	20
		SW	85% F-C SAND 15% FINE GRAVEL MOIST. NO ODOR / STAIN. NO. WELL GRD 2.5Y 3/2 (VERY DK GRAYISH BRN) SAND L/ GRAVEL						
24.5'			24.5'						
		SMEAR ZONE	100% F-M SAND. WELL GRADED WET. PETROL-LIKE ODOR, SLIGHT STAINING 10YR 3/1 (VERY DK. GRAY)		GP-5-25 17:45	5'		182 PPM	25
INITIAL DTW 26'			27'						
			ELASTIC SILT. GLEY 1/5/N (GRAY) MOIST CONFINING LAYER						
32		32	BORING TERM @ 32'						

Borehole Backfill
EXPANSION PLUG
+4"
2" SCHED 40 PVC CASING (+0.25' - 25' BGS)
3/4" BENTONITE CHIPS 0.5' - 23' BGS
23'
25'
SAND PACK (SILICA SAND #2)
0.01" SLOTTED SCREEN
30'
SANDPACK (30' - 32')

GEO FORM 306 BORING LOG TEMPLATE.GPJ SECOR INTL.GDT 9/24/08

PROJECT: LIMITED PH. II ESA
LOCATION: 726 12TH AVE. ANCHORAGE, AK
PROJECT NUMBER: 155750590

WELL / PROBEHOLE / BOREHOLE NO: GP-6
PAGE 1 OF 1
Stantec

DRILLING: STARTED 10/16/18 COMPLETED: 10/18/18
INSTALLATION: STARTED 10/18/18 COMPLETED: 10/18/18
DRILLING COMPANY: GEOTECH AK
DRILLING EQUIPMENT: GEOPROBE 6040, GEOPROBE 5011
DRILLING METHOD: DIRECT PUSH
SAMPLING EQUIPMENT: 5' DISPOSABLE NYLON SLEEVES

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): 25' BOREHOLE DEPTH (ft):
STATIC DTW (ft): WELL DEPTH (ft):
WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in):
LOGGED BY: DB CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	PID (ppm)	Depth (feet)
			0.3' 4" ASPHALT						
		SM	60% F-C SAND 40% SILT DRY. WELL GRADED. NO ODOR/STAIN. 10YR 4/2 (DK GRAYISH BRN) SILTY SAND						0.5'
			4.5'						
		SW	90% F-C SAND 10% SILT MOIST. NO ODOR/STAIN. 10YR 3/1 (VERY DK. GRAY) SAND & SILT		GP-6-0.5 14:53	5'	—	1.2	
			6.5'						
		GM	30% F-C SAND 50% GRAV. (F, SUB A) 20% SILT MOIST. NO ODOR/STAIN. Well gd. 10YR 3/1 (VERY DK GRAY) SANDY GRAVEL W/ SILT		GP-6-10 15:10	5'	—	0.4	10'
			11.5'						
		SW	90% F-C SAND 10% F GRAV (SUB A) MOIST. NO ODOR/STAIN. WELL GRADED 10YR 3/2 (VERY DK GRAYISH BRN) SAND & GRAVEL						
			15'			5'	—	0.2	15'
		SW	90% F-C SAND 10-20 SILT MOIST. NO ODOR/STAIN. WELL GRD. 10YR 3/1 (VERY DK GRAY) SAND & SILT						
			17'						
		SW	70% F-C SAND 30% GRAVEL (F, SUB A/SUBR) well gd. No odor/stain. GRAVELLY SAND 10YR 3/2 (VERY DK. GRAYISH BRN)			5'	—	0.2	20'
			20'						
		SW	75% F-C SAND 25% GRAVEL (AS ABOVE) GRAVELLY SAND		GP-6-25 15:20	5'	—	0.5	25'
			25'						
		SM SW-SP	100% F-M SAND. WET NO ODOR/STAINING. 10YR 3/1 (VERY DK GRAY). MOD. GRADED						
			27.5'						
		ML	100% CONSOLIDATED SILT.						
			BORING TERMINATED @ 28' BGS						

Borehole Backfill
EXPANDED FOAM PLUG
COLD PATCH ASPHALT
TO-33'
0.5'
3/4" BENT CHIPS (0.5'-21')
2" SCHED 40 PVC
21'
SAND PACK (21'-28')
28'
SLOTTED SCREEN (0.01") (21'-28')
28

GEO FORM 304 BORING LOG TEMPLATE.GPJ SECOR INTL.GDT 9/24/08

PROJECT: LIMITED PHASE II ESA
LOCATION: 726 12TH AVE, ANCH AK
PROJECT NUMBER: 185750590

WELL / PROBEHOLE / BOREHOLE NO: GP-7
PAGE 1 OF 1

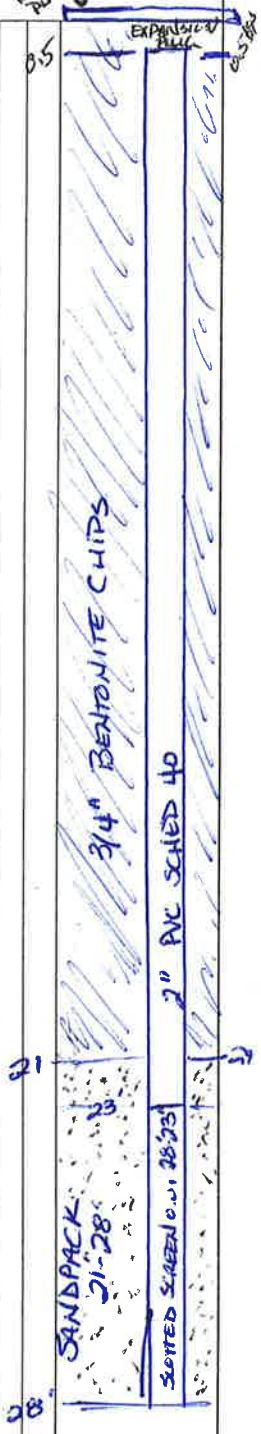
Stantec

DRILLING: STARTED 10/18/18 COMPLETED: 10/18/18
INSTALLATION: STARTED 10/18/18 COMPLETED: 10/18/18
DRILLING COMPANY: Beotech AK
DRILLING EQUIPMENT: Geoprobe 5611
DRILLING METHOD: DIRECT PUSH
SAMPLING EQUIPMENT: 5' DISP. NYLON SLEEVES

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): 25' BOREHOLE DEPTH (ft): 28'
STATIC DTW (ft): 2 WELL DEPTH (ft): 28'
WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 4.5"
LOGGED BY: DB CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	PID (ppm)	Depth (feet)
			4" Asphalt						
		SM	75% F-C SAND 25% SILT DRY. well graded. No odor/ Stain. 10YR 3/1 (VERY DK GRAY) SILTY SAND		GP-7-0.5 1400	5'	-	1.2	0.5
5'		ML	5" Lense of SILT w/ SAND						
		GM	60% GRAVEL 30% F-C SAND 10% SILT Moist. No odor/ STAIN. well graded 10YR 3/1 (VERY DK GRAY) SANDY GRAVEL & SILT		GP-7-10 1420	5'	-	0.7	10
11'									
		SW	85% F-C SAND 15% GRAVEL (F, SUB A) 5% SILT Moist, No odor / STAIN. well GRD. 10YR 3/3 (DK BRN) SAND & / SILT (TRACE SILT)			5'	-	0.4	15
17'			70% F-C SAND 30% GRAVEL (F, SUB A - SUB R) well grd. No odor / Staining. 10YR 3/2 (VERY DK. GRAYISH BRN. GRAVELLY SAND						
20'		SW	75% F-C SAND, 25% GRAVEL (AS ABOVE)			5'	-	0.7	20'
24'		SM SW-SP	100% F-M SAND. WET. No ODOR / STAINING. MOD. GRD. (VERY DK GRAY) 10YR 3/1			5'	-	0.6	25
27.5			100% CONSOLIDATED SILT						
28			TERMINATED @ 28'						

Borehole Backfill



GEO FORM 304 BORING LOG TEMPLATE.GPJ SECOR INTL.GDT 9/24/08

PROJECT: Limited Phase II Site Assessment
LOCATION: 726 12th Ave, Anchorage AK
PROJECT NUMBER: 185750590

WELL / PROBEHOLE / BOREHOLE NO: GP-8
PAGE 1 OF 1

Stantec

DRILLING: STARTED 10/18/18 COMPLETED: 10/18/18
INSTALLATION: STARTED 10/18/18 COMPLETED: 10/18/18
DRILLING COMPANY: Geotech AK
DRILLING EQUIPMENT: GeoProbe 6011
DRILLING METHOD: Direct Push
SAMPLING EQUIPMENT: 5" Disp. Mylow Sleeves

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): 25' BOREHOLE DEPTH (ft): 28'
STATIC DTW (ft): WELL DEPTH (ft): 28'
WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 4.5"
LOGGED BY: DB CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	PID (PPM)	Depth (feet)	Borehole Backfill
			SOD / TOP SOIL / GRASS							
		3"	70% SILT 30% F-M SAND.		GP-8-0.5 1140	5'	-	6.8	0.5	
		ML 0.5	MOIST. 10 YR 2/2 (VERY DK. BRN)							
			60% F-M SAND. 40% ~~F-M SANDY~~ SILT							
		SM	MOIST. MOD. GRADED. NO ODOR / STAIN							
		2	10YR 3/3 (DK BRN)							
		6'	60% GRAVEL 30% F-C SAND							
			10% SILT.							
		GM	MOIST. NO ODOR / STAIN. WELL GRD.							
		2	10YR 3/1 (VERY DK. GRAY)		GP-8-10 1150	5'	-	0.5	10	
			SANDY GRAVEL							
		10.5'	~~50% F-C SAND~~ 15% GRAVEL (F, SUBANG)							
			TRACE SILT							
			MOIST. NO ODOR / STAIN. Well grd.							
		SW	10YR 3/3 (DK BRN.)							
		2	~~SAND & GRAVEL~~							
						5'	-	0.3	15	
		16	70% F-C SAND 30% GRAVEL (F, SUBA - SUBR)							
			well grd. No odor / stain. 10YR 3/2							
			GRAVELLY SAND							
		SW								
		2				5'	-	1.1	20	
									21'	
									23'	
		24'	100% F-M Sand. Wet. No odor							
		SM SW-SP	No stain. Mod. graded.							
			10YR 3/1 (VERY DK. GRAY)							
						5'	-	0.8	25	
		27.5	CONSOLIDATED ELASTIC SILT							
		ML								
		28	TERMINATED @ 28						28'	

Borehole Backfill: 3/4" Bent. Chips; 2" PVC Sched 40; Sand Pack 24'-28'; 0.01" Slotted Screen 23'-28'

GEO FORM 304 BORING LOG TEMPLATE.GPJ SECOR INTL.GDT 9/24/08

PROJECT: LIMITED Phase II Site Assessment
LOCATION: 728 E 8th Ave, Anchorage AK
PROJECT NUMBER: 185750590

WELL / PROBEHOLE / BOREHOLE NO: GP-9
PAGE 1 OF 1

Stantec

DRILLING: STARTED 10/18/18 COMPLETED: 10/18/18
INSTALLATION: STARTED 10/18/18 COMPLETED: 10/18/18
DRILLING COMPANY: Geotech AK
DRILLING EQUIPMENT: Geoprobe 8011
DRILLING METHOD: Direct Push
SAMPLING EQUIPMENT: 5' Disp. Nylon Sleeves

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): 25' BOREHOLE DEPTH (ft): 28'
STATIC DTW (ft): WELL DEPTH (ft): 28'
WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 4.5"
LOGGED BY: DB CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	PID (ppm)	Depth (feet)	Borehole Backfill
			3" SOD		GP-9-0.5 0930	5'	—	0.6	0.5	
		ML	70% SILT 30% F-M Sand. Moist No odor/Stain. 10YR 2/2 (Very Dk Brn)							
1'										
		SM	60% F-M SAND 40% SILT. Moist. Mod. Graded. No odor/Stain. 10YR 3/3 (Dk. Brn) Silty Sand							
5.5'										
		SW	80% F-C SAND 20% Gravel (F, Subrnd) Moist. No odor/Stain. well grd. 10YR 3/3 (Dk. Brn) Sand w/ Gravel		GP-9-10 0940	5'	—	0.4	10	
11'										
		SW	70% F-C SAND 30% Gravel well grd. No odor/Stain. 10YR 3/2 (Very Dk Grayish Brn) Gravelly Sand			5'	—	0.8	15'	
18										
		SW	80% F-M Sand. 20% Gravel well grd. No odor/Stain 10YR 3/2 Sand w/ Gravel			5'	—	0.6	20'	
24										
		SM SW-SP	Consolidated Sand 100% F-M SAND. Wet. No odor/Stain. 10YR 3/1		GP-9-25	5'	—	0.4	25'	
27.5		ML	Elastic Silt Wet							
28			Terminated @ 28'							

Borehole Backfill: 3/4" Bentonite Chips 0'-21'; 2" Pvc Sched 40 0'-23'; Sand Pack 21'-28'; 0.01 Slotted Screen 23'-28'

GEO FORM 304 BORING LOG TEMPLATE.GPJ SECOR INTL.GDT 9/24/08

APPENDIX B

Field Notes

Stantec

Field Report

GEO-301

ACTIVITY: Limited Phase II Site Assessment

Page ___ of ___

Rev. 2 | Oct 2014

FIELD OFFICE: Seattle	DATE: 10/15/18	PAGE: DAY-1 pg. 1	CLIENT: Municipality of Anchorage
TO: C. Gorman	PROJECT NO.: 185750590	TASK NO.: 5.A.3 / 5.B.B	SUBCONTRACTOR: Geotech Drilling
	LOCATION: 726 E. 12th Ave, Anch AK		
	WEATHER: Clouds		TEMP.: 52°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

0745 - OFFICE. ORIENTATION. PREP.

0910 - MOB TO SITE.

0924 - ONSite. Jared Stultz (Geotech) onsite. H&S MTG. Prep for utility locate.

0940 - 1330 - Locate and assess 9 Borehole locations. Conduct Secondary sweep (200 MHz) OF UTILITIES / Boreholes near 12th Ave Right-of-way

1330 - 1400 EQUIPMENT ISSUE - Batteries depleted. Jared to email Results of locate this evening.

1420 - Demob to office. Prep for Drilling beginning 10/16/18

1700 - DAY END.

NOTE: (11:12pm) Received emailed assessment from JARED

Results are as follows.

GP-1, GP-3, GP-5, GP-6 - Clear of UTILITIES.

GP-2 - Relocate 5' SW of current pos.

GP-4 - Relocate 1' N

GP-7 - Clear

GP-8 - Clear

GP-9 - Clear.

	SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: VAN

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY: D. Beard

Stantec

Field Report

GEO-301

ACTIVITY: Limited Phase II Site Assessment

Page ___ of ___ | Rev. 2 | Oct 2014

FIELD OFFICE:	DATE	PAGE	CLIENT
SEATTLE	10/16/18	DAY 2 PG. 1	MUNI. OF ANCHORAGE
TO:	PROJECT NO.	TASK NO.	SUBCONTRACTOR
C. GORMAN	185750590	5.A.3 / 5.B.3	Geotech Drilling
	LOCATION: 726 E. 12th Ave, ANCH. AK		
	WEATHER: COLD / RAIN		TEMP.: 49°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

0730 - OFFICE. PREP w/ COLLIN MACHEEL & JOHN MARSHALL

0915 - MOB TO SITE

0930 - ONSITE. GEOTECH AK onsite w/ Geoprobe 6010 DIRECT PUSH Rig. Cal PID

0940 - 1030 - H&S MTG., RIG INSPECTION, EQPT OFFLOAD, POSITION @ GP-1. Prep.

1030 - Begin DRILLING @ GP-1-0.5. (PCB, PAH, RCRA8) PID = 0.4ppm

1040 - Samples collected @ GP-1-0.5

1045 - MOB TO GP-2.

1100 - Collect GP-2-0.5 (PCB, PAH, RCRA) PID = 0.5 ppm

1105 - Relocate to GP-3

1121 - Samples collected @ GP-3-0.5 (PCB, PAH, RCRA) PID = 1.1 ppm

1125 - MOB TO GP-4.

1130 - Collected samples @ GP-4-0.5 (VOC, PCB, PAH) PID = 0.6 ppm

1135 - Collected Samples @ GP-4-3 (VOC, PCB, PAH) PID = 0.1 ppm

1140 - MOB TO GP-5

1208 - GP-5-0.5 (DRO, VOC, PAH) collected. PID = 0.4 ppm

1210 GP-5-0.5 - Dup collected (DRO, VOC, PAH)

1226 Collected GP-5-10. NOT Sampled. PID = 0.4 ppm

1235 - NO WATER TABLE IDed @ 25' bgs. CONTINUE Drilling.

1250 - Refusal - 6010 Rig unable to DRIVE 2.25" OD MACRO TOOLING Beyond 26'

1310 - SWITCH TO DT-45 (4" ID) CORE.

1330 - DT-45 Refusal @ 8' bgs.

SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: VAN, PID, WATER Level Indicator

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY: D. BEARD

Stantec

Field Report

GEO-301

ACTIVITY: Limited Phase II Site Assessment

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FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/16/18	Day 2 Pg. 2	Mun. of Anchorage
	PROJECT NO.	TASK NO.	SUBCONTRACTOR
TO:	185750590	5.A.3 / 5.B.3	Geotech Drilling
C. Gorman	LOCATION	726 E. 12th Ave, Anch. AK	
	WEATHER	Cold / Rain	TEMP. 49°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

1400 - 1450 - Pull tooling from GP-6. Investigating alternative options

1450 - Set on GP-6. Prepare to resume w/ same configuration in order to determine if lithology @ GP-5 was sole reason for refusal.

1453 - Collect GP-6-0.5 (DRO, VOC, PAH) PID = 1.2 ppm

1510 - Collect GP-6-10. Not sampled. PID = 0.4 ppm

1520 - Collect GP-6-25. Not Sampled. PID = 0.5 ppm

1525 - Pulled Macro Core tooling @ GP-6 to resume boring @ GP-5. Geoprobe 5040 Rig onsite to replace smaller 6010 Rig.

1540 - Rig in place - Begin driving DT-45 casing to 30'+

1745 - GP-5-25 samples collected (DRO, VOC, PAH). PID = 182. Obvious staining and Petrol-like odor. Not an obvious water table @ 25'-27'. At 27' bgs, encountered confining layer of elastic silt

1800 - At GP5, 27'-32' continuous confining layer of elastic silt. Boring complete @ GP-5. Will set bottom of well @ approx 28' bgs. Confirmed findings w/ Collin. Perched water @ 25-27' is the targetted water level.

1845-1920 - Pull equipment. No well set @ GP-5, GP-6. Boreholes covered and marked for well install on 10/18/18. Prep for demob

1930 - Demob. office.

1945 - Day end.

	SUBCONTRACTOR HOURS:	STAFF HOURS:
EQUIPMENT USED: VAN, PID, WLI		
MILEAGE:	REVIEWED BY:	
CC:	PREPARED BY: Drew Beard	

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Field Report

GEO-301

ACTIVITY: Limited Phase II ESA

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FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/18/18	DAY 3 Pg. 1	Munic. of Anchorage
	PROJECT NO.	TASK NO.	SUBCONTRACTOR
TO:	185750590	5.A.3 / 5.B.3	Geotech AK
C. Gorman	LOCATION	726 E. 12th Ave, Anchorage AK	
	WEATHER	Cloudy, Cold	TEMP. 49°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

1314 - MOB FROM BRAGAW ST.

1415 - ONSITE. H&S MTG. Prep for well install @ GP-5. CAL PID

1445 - BEGIN DIRECT PUSH BORING @ GP-5 w/ DT-35 TO 28'.

1520 - TOOLING STUCK - DRILLER ERROR. HEAVING SANDS @ BOT. OF GP-5.

1700 - Resume @ GP-5. (Pulled ALL TOOLING using HYDRAULIC CLAMP SYSTEM ON RIG.

1734 - Well INSTALLED @ GP-5. Water Level (DTW) ≈ 26'. TOT Depth of well (TD) = 30'
screen interval = 25'-30'. Sand pack 23'-30'. Bent. Chips 0.5'-23'
Casing Type: Sched 40 PVC Slotted Screen = 0.01

1745 - MOB TO GP-6. BOREHOLE completion / well install.

1830 - Well install complete @ GP-6.
DTW ≈ 26' TD = 28' Screen = 23'-28' Sand pack = 21'-28'

1830 - Pull tooling. Clean up Site. Load Equip. Prep for Demob.

1900 - Demob. to OFFICE. LOCK GATE.

1930 - DAY END.

	SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: VAN, PID, Water level indicator.

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY: D. Beard

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Field Report

GEO-301

ACTIVITY: Limited Phase II Site Assessment

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FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/19/18	DAY 4 Pg. 1	Mun. of Anchorage
TO:	PROJECT NO.	TASK NO.	SUBCONTRACTOR
C. Gorman	185750596	5.A.3 / 5.B.3	Geotech AK
	LOCATION: 726 E. 12th Ave, Anch. AK		
	WEATHER: Cold / Cloudy		TEMP. 48°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

0800 - OFFICE. Prep. MOB TO 12th Ave.

0830 - ONsite. H&S mtg. CALIBRATE PID.

0850 - Prep EQPT. Position Rig @ GP-9.

0930 - GP-9-0.5 Sampled (DRO, VOC, PAH) PID = 0.6 ppm

0940 GP-9-10 Sampled (DRO, VOC, PAH) PID = 0.4 ppm

1030 GP-9-25 Not Sampled PID = 0.4 ppm. Begin well install

1100 GP-9 well install complete. DTW ≈ 25'. TD = 28' Screen = 23'-28'

SAND PACK = 21'-28'.

1100-1120 - SOIL VAPOR PROBE installed @ GP-9 (0.5'-5.5', 10" Riser)

1120 - Prep for well install / Sampling @ GP-8

1140 GP-8-0.5 Sampled (DRO, VOC, PAH) PID = 6.2 ppm

1150 GP-8-10 Sampled (DRO, VOC, PAH) PID = 0.5 ppm

1220 GP-8-25 Not Sampled PID = 0.8 ppm. Begin well install

1250 GP-8 well install complete. DTW ≈ 25' Screen = 23'-28' SAND 21'-28'

1315 - GP-8 Soil Vapor PROBE INSTALLED (0.5'-5.5', 10" Riser)

1400 - GP-7-0.5 SAMPLED (DRO, VOC, PAH) PID = 1.2 ppm

1420 GP-7-10 Sampled (DRO, VOC, PAH) PID = 0.7 ppm

NOTE: 1430 IDW Composite sample collected (16oz, Flashpt, TCLP RCRA8, pH, PCB)

1445 GP-7-25 Not Sampled PID = 0.6

1500 GP-7 well install. BREAK FOR LUNCH 1500-1630

1630 - SET Soil Vapor Probe @ GP-7 (Probe = 0.5' to 5' bgs, 10" Riser)

SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED:

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY:

Stantec

Field Report

GEO-301

ACTIVITY: Limited Phase II Site Assessment

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FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/19/18	Day 4 Pg. 2	Mun. of Anchorage
TO:	PROJECT NO.	TASK NO.	SUBCONTRACTOR
C. Gorman	185750596	5.A.3 / 5.B.3	Geotech AK
	LOCATION: 726 E. 12th Ave. Anch. AK		
	WEATHER: Cold / Cloudy		TEMP.: 48°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

1640 MOB TO GP-6. INSTALL VAPOR PROBE. (0.5' - 5.5' bgs. 8" Riser)

1720. MOB TO GP-5. Install Vapor Probe (as above)

1730-1800. Hydrate Bentonite. Asphalt cold patch on potholed asphalt areas. Cut risers on GP-7 to sit below asphalt surface (Hi traffic area). Covered w/ steel plate. Secured w/ cold patch. Site Cleanup. Equipment secured. Demob. Lock Gate.

1800 - Offsite. Demob to office.

1820 - Day End.

SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: VAN, PID, water level indicator

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY: D. Board

Stantec

Field Report

GEO-301

ACTIVITY: Limited Ph. II Site Assessment

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FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/23/18		Mun. of Anchorage
TO:	PROJECT NO.	TASK NO.	SUBCONTRACTOR
C. (Gorman)	185782590		
	LOCATION: 726 E. 12th Ave, Anchorage AK		
	WEATHER: Rain		TEMP.: 48°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

0800 - OFFICE. PREP. LOAD VAN.

0900 - MOB TO TTT ENV. EQPT. PICK UP YSI-556 w/ FLOW THROUGH CELL, HURRICANE ELEC SUBMERSIBLE PUMP., BATTERY, FLOW RESTRICTER, + TUBING.

0940 - MOB TO SITE (726 E. 12th ST.). PREP TO COLLECT GW DATA.

1000 - H&S MTG. SET EXCLUSION ZONE @ GP-9. STANTEC'S WATER LEVEL INDICATOR FAILED (TESTED @ OFFICE). PICKED UP EX-Zone. MOB TO PURCH-BATTERIES. RETURN TO SITE.

1100 - DISCOVERED PROBE, MALFUNCTION. MOB TO TTT ENV. EQPT.

1130 - RENT PROBE. RETURN TO SITE.

1200 - 1300 WAIT FOR DOWNPOUR TO PASS (STANDBY).

1300 - 1320 - GAUGE DTW & TD @ All Wells (GP-5 thru GP-9) Record.

Low Flow Purge Sampling - SET EXCLUSION ZONE. DECON (TRIPLE RINSE) STAINLESS STEEL - Elec. SUBMERSIBLE - HURRICANE PUMP & WATER LEVEL INDICATOR. SET PUMP 1' ABOVE TD w/ NEW/Dedicated Nylon tubing attached. Purge 1 gal to clear well of ↑ TURBIDITY groundwater PRIOR TO Recording water Quality Data. Connect TUBING TO YSI 556 & FLOW THROUGH Cell. SET Pump flow RATE @ 0.25L/min. Record water quality data every 5 MINS UNTIL Steady State achieved. Then DISCONNect tubing. PRIOR TO Sample collection. DISMANTLE EQPT, DISCARD TUBING & ~~Decon~~ ~~Collect Samples~~.

SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: VAN, Water Level INDICATOR

MILEAGE: ✓

REVIEWED BY:

CC:

PREPARED BY: D. Board

Stantec

Field Report

GEO-301

ACTIVITY: Lin. Phase II Site Assessment.

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Rev. 2 June 2015

FIELD OFFICE:	DATE	PAGE	CLIENT
Seattle	10/23/18		Mun. of Anchorage
	PROJECT NO.	TASK NO.	SUBCONTRACTOR
TO:	185750590		
C. Gorman.	LOCATION		
	780 E. 12th Ave, Anchorage, AK.		
	WEATHER		TEMP.
	RAIN		48°

CHRONOLOGY OF FIELD ACTIVITES/ISSUES/OBSERVATIONS

... Dismantle EQPT, Discard tubing, Decon, Close well.
Put samples on ice. Consolidate purge water into Drum.
(Work from perceived "clean → dirty" wells)

1300 - Set @ GP-9. Low Flow purge (as above). Sampled @ 14:05.

1415 - Set @ GP-8. Low Flow Purge (as above). Sampled @ 15:15.

1525 - Set @ GP-7. Low Flow Purge (as above). Sampled @ 16:35.

1650 - Set @ GP-6. Low Flow Purge (AS ABOVE). Sampled @ 17:50. Dup @ 17:55.

1800 - Set @ GP-5. Low Flow purge (AS ABOVE).

NOTE - SHEEN & Petrol-like ODOR IDENTIFIED @ GP-5 (No other wells, reported to Cyrus Gormon)

1910 - Sampled GP-5. Consolidate all purge water in Drum.

1920 - IDW water samples collected.

1930 - Secure EQPT. Site Cleanup. Prep for demob to office.

1945 - Demob to office.

2000 - Office. Unload.

2020 - Day Complete.

	SUBCONTRACTOR HOURS:	STAFF HOURS:

EQUIPMENT USED: Van, Water Level Indicator

MILEAGE:	REVIEWED BY:
CC:	PREPARED BY: D Brand

Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Report to: **Cyrus Gorman**

Email To: **cyrus.gorman@stantec.com; collin.macheel@stantec.com**

Project Description:

City/State Collected: Anchorage, AK

Phone: **206-494-5029**
Fax: **425-869-1190**

Client Project # 185756590

Lab Project # **STANTECBWA-AK**

Collected by (print): Jake Kelden

Site/Facility ID #

P.O. #

Collected by (signature): Jake Kelden

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	Helium Summa	TO-15 Summa	Remarks	Sample # (lab only)
GP-5	Grab	Air	—	11/2/18	1320-1326	1		X	X		
GP-6		Air	—		1340-1347	1		X	X		
GP-7		Air	—		1358-1409	1		X	X		
GP-8		Air	—		1413-1419	1		X	X		
GP-9		Air	—		1427-1438	1		X	X		

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L #

Table #

Acctnum: **STANTECBWA**
Template: **T141750**
Prelogin: **P676583**
TSR: **110 - Brian Ford**
PB: 11/10/18

Shipped Via: **FedEX 2nd Day**

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking # 415016609391

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Jake Kelden	11/7/18	1870		
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 / OK

Air Media Sampling Form

Stantec

Sample ID	GP-5	**Client**	
		Project #	
		Site Name	

Sample Type Ambient Air / Indoor Air / Sub-Slab Vapor / (Soil Gas) / Crawl Space Air / Other:

Sample Location	GP-5 12th	**Canister ID**	00517 **Regulator ID** 00746
Sample Height	**Sample Analysis** To-15	**Canister** 6L Summa / (1L Summa) / Tedlar / Other:	
Paired Sample No ☒ Yes ☐ **Sample ID**		**Regulator Type** 24hr / 8hr / 200ml/min / Other:	
Sample Start Date/Time	11/2/18 @ 1320	**Sample End Date/Time**	11/2/18 @ 1326
Canister Initial Pressure	-29 psi	**Canister End Pressure**	-2 psi

Weather Conditions Day of Event

Weather (sunny) - Part.Cldy - OverCast - Fog - Rain - Snow		**Wind** (Speed/Direction)	2 ENE
Exterior Air Temperature (Start)	25 °F	**Exterior Air Temperature (End)**	"
Exterior Barometeric Pressure (Start)	29.64 "Hg	**Exterior Barometeric Pressure (End)**	"
Interior Air Temperature (Start)	—	**Interior Air Temperature (End)**	—
Interior Barometeric Pressure (Start)	—	**Interior Barometeric Pressure (End)**	—

Weather Conditions Preceeding

Weather sunny - Part.Cldy - OverCast - Fog - Rain - Snow		**Wind** (Speed/Direction)	
Exterior Air Temperature High		**Exterior Air Temperature Low**	
Exterior Barometeric Pressure High		**Exterior Barometeric Pressure Low**	
Precipitation		**Weather Information Source:**	

Leak Detection

Method of Leak Detection: Passed Shut in test 2 min

Passed Helium Shroud test

Sampling

PID (ppm)	—
Tubing Type	teflon lined
Tubing Diameter	1/4
Tubing Purged (Y/N)	Y
Amount Purged	0.03

Calculations: $3' \times \frac{0.01\ L}{1'} = 0.03\ L$

Volumes for Tubing Size per foot

Inner Diameter (in)	Liters/Foot
3/16	0.005
(1/4)	0.01
1/2	0.039

Notes

Windows and doors closed for 24 hour period prior to and during sampling?

If no, duration open:

Heating or ventilation system operating during time of sampling?

Sampler Name	Jake Keldsen
Sampler Signature	Jake Keldsen

Air Media Sampling Form

Stantec

Sample ID	GP-6	**Client**	
		Project #	
		Site Name	

Sample Type Ambient Air / Indoor Air / Sub-Slab Vapor / Soil Gas / Crawl Space Air / Other:

Sample Location	GP-6 12th	**Canister ID**	009416 **Regulator ID** 00785
Sample Height	— **Sample Analysis** TO-15	**Canister**	6L Summa / 1L Summa / Tedlar / Other:
Paired Sample	No X Yes ☐ **Sample ID**	**Regulator Type**	24hr / 8hr / 200ml/min / Other:
Sample Start Date/Time	11/2/18 @ 1340	**Sample End Date/Time**	11/2/18 @ 1347
Canister Initial Pressure	-29 ~~"Hg~~ psi	**Canister End Pressure**	-2 "Hg psi

Weather Conditions Day of Event

Weather	sunny / Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	2 ENE
Exterior Air Temperature (Start)	25°F	**Exterior Air Temperature (End)**	"
Exterior Barometeric Pressure (Start)	29.64" Hg	**Exterior Barometeric Pressure (End)**	"
Interior Air Temperature (Start)	—	**Interior Air Temperature (End)**	—
Interior Barometeric Pressure (Start)	—	**Interior Barometeric Pressure (End)**	—

Weather Conditions Preceeding

Weather	sunny - Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	
Exterior Air Temperature High		**Exterior Air Temperature Low**	
Exterior Barometeric Pressure High		**Exterior Barometeric Pressure Low**	
Precipitation		**Weather Information Source:**	

Leak Detection

Method of Leak Detection Passed Snat in test 2 min

Passed Helium Shroud test

Sampling

PID (ppm)	—
Tubing Type	teflon lined
Tubing Diameter	1/4
Tubing Purged (Y/N)	Y
Amount Purged	0.03 L

Calculations:

$3' \times \frac{0.01\ L}{1} = 0.03\ L$

Volumes for Tubing Size per foot	
Inner Diameter (in)	Liters/Foot
3/16	0.005
1/4	0.01
1/2	0.039

Notes

Windows and doors closed for 24 hour period prior to and during sampling?

If no, duration open: N/A

Heating or ventilation system operating during time of sampling? N/A

Sampler Name	Jake Kelsen
Sampler Signature	Jake Kelsen

Air Media Sampling Form

Stantec

Sample ID	GP-7	**Client**	
		Project #	
		Site Name	

Sample Type Ambient Air / Indoor Air / Sub-Slab Vapor / Soil Gas / Crawl Space Air / Other:

Sample Location	GP-7 12hr	**Canister ID** 05225	**Regulator ID** 009097
Sample Height	**Sample Analysis** TO-15	**Canister** 6L Summa / 1L Summa / Tedlar / Other:	
Paired Sample No ☒ Yes ☐ **Sample ID**		**Regulator Type** 24hr / 8hr / 200ml/min / Other:	
Sample Start Date/Time 11/2/18 @ 1358		**Sample End Date/Time** 11/2/18 @ 1403	
Canister Initial Pressure -28 Psi		**Canister End Pressure** -2 Psi	

Weather Conditions Day of Event

Weather sunny - Part.Cldy - OverCast - Fog - Rain - Snow		**Wind** (Speed/Direction)	ZENE
Exterior Air Temperature (Start)	25°F	**Exterior Air Temperature (End)**	11
Exterior Barometeric Pressure (Start)	29.64	**Exterior Barometeric Pressure (End)**	11
Interior Air Temperature (Start)	—	**Interior Air Temperature (End)**	—
Interior Barometeric Pressure (Start)	—	**Interior Barometeric Pressure (End)**	—

Weather Conditions Preceeding

Weather sunny - Part.Cldy - OverCast - Fog - Rain - Snow		**Wind** (Speed/Direction)	
Exterior Air Temperature High		**Exterior Air Temperature Low**	
Exterior Barometeric Pressure High		**Exterior Barometeric Pressure Low**	
Precipitation		**Weather Information Source:**	

Leak Detection

Method of Leak Detection Passed shut in test >1 min
Passed Helium Shroud test 0.0ppm

Sampling

PID (ppm)	—
Tubing Type	teflon lined
Tubing Diameter	1/4
Tubing Purged (Y/N)	Y
Amount Purged	0.03

Calculations: 3' x 0.01 L/1 = 0.03 L

Volumes for Tubing Size per foot	
Inner Diameter (in)	Liters/Foot
3/16	0.005
1/4	0.01
1/2	0.039

Notes

Windows and doors closed for 24 hour period prior to and during sampling?
If no, duration open: N/A

Heating or ventilation system operating during time of sampling? N/A

Sampler Name	Jake Meldsen
Sampler Signature	Jake Meldsen

Air Media Sampling Form

Stantec

Sample ID	OP-8	**Client**	
		Project #	
		Site Name	

Sample Type Ambient Air / Indoor Air / Sub-Slab Vapor / (Soil Gas) / Crawl Space Air / Other:

Sample Location	OP-8 NAN	**Canister ID**	006877 **Regulator ID** 009231
Sample Height	— **Sample Analysis** TO-15	**Canister**	6L Summa / (1L Summa) / Tedlar / Other:
Paired Sample	No ☐ Yes ☐ **Sample ID**	**Regulator Type**	24hr / 8hr / (200ml/min) / Other:
Sample Start Date/Time	11/2/18 @ 1413	**Sample End Date/Time**	11/2/18 @ 1414
Canister Initial Pressure	-27 PSI	**Canister End Pressure**	-2 PSI

Weather Conditions Day of Event

Weather	(sunny) - Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	2 ENE
Exterior Air Temperature (Start)	25°F	**Exterior Air Temperature (End)**	11
Exterior Barometeric Pressure (Start)	29.64" Hg	**Exterior Barometeric Pressure (End)**	11
Interior Air Temperature (Start)	—	**Interior Air Temperature (End)**	—
Interior Barometeric Pressure (Start)	—	**Interior Barometeric Pressure (End)**	—

Weather Conditions Preceeding

Weather	sunny - Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	
Exterior Air Temperature High		**Exterior Air Temperature Low**	
Exterior Barometeric Pressure High		**Exterior Barometeric Pressure Low**	
Precipitation		**Weather Information Source:**	

Leak Detection

Method of Leak Detection Shut in test passed > 1 Min

Helium shroud test passed = 0.0 ppm

Sampling

PID (ppm)	—
Tubing Type	teflon lined
Tubing Diameter	1/4
Tubing Purged (Y/N)	Y
Amount Purged	0.03L

Calculations:

$3' \times \frac{0.01\ L}{1} = 0.03L$

Volumes for Tubing Size per foot	
Inner Diameter (in)	Liters/Foot
3/16	0.005
1/4	0.01
1/2	0.039

Notes

Windows and doors closed for 24 hour period prior to and during sampling?

If no, duration open: N/A

Heating or ventilation system operating during time of sampling? N/A

Sampler Name Dale Peldsen **Sampler Signature** Dale Peldsen

Air Media Sampling Form

Stantec

Sample ID	GP-9	**Client**	
		Project #	
		Site Name	

Sample Type Ambient Air / Indoor Air / Sub-Slab Vapor / Soil Gas / Crawl Space Air / Other:

Sample Location	GP-9 12hr	**Canister ID**	007637 **Regulator ID** 008447
Sample Height	— **Sample Analysis** TO-15	**Canister**	6L Summa / 1L Summa / Tedlar / Other:
Paired Sample	No ☒ Yes ☐ **Sample ID**	**Regulator Type**	24hr / 8hr / 200ml/min / Other:
Sample Start Date/Time	11/2/18 @ 1427	**Sample End Date/Time**	11/2/18 @ 1433
Canister Initial Pressure	-29 " Hg	**Canister End Pressure**	-2 " Hg

Weather Conditions Day of Event

Weather	sunny - Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	2 mph ENE
Exterior Air Temperature (Start)	75°F	**Exterior Air Temperature (End)**	"
Exterior Barometeric Pressure (Start)	29.64" Hg	**Exterior Barometeric Pressure (End)**	"
Interior Air Temperature (Start)	—	**Interior Air Temperature (End)**	—
Interior Barometeric Pressure (Start)	—	**Interior Barometeric Pressure (End)**	—

Weather Conditions Preceeding

Weather	sunny - Part.Cldy - OverCast - Fog - Rain - Snow	**Wind** (Speed/Direction)	
Exterior Air Temperature High		**Exterior Air Temperature Low**	
Exterior Barometeric Pressure High		**Exterior Barometeric Pressure Low**	
Precipitation		**Weather Information Source:**	

Leak Detection

Method of Leak Detection Shut in test = passed > 1 min
Helium shroud test passed @ 0.0ppm

Sampling

PID (ppm)	—
Tubing Type	teflon lined
Tubing Diameter	1/4
Tubing Purged (Y/N)	Y
Amount Purged	0.03L

Calculations:

$3' \times \frac{0.01 L}{1} = 0.03 L$

Volumes for Tubing Size per foot	
Inner Diameter (in)	Liters/Foot
3/16	0.005
1/4	0.01
1/2	0.039

Notes

Windows and doors closed for 24 hour period prior to and during sampling?
If no, duration open: N/A

Heating or ventilation system operating during time of sampling? N/A

Sampler Name Jake Heldsen

Sampler Signature Jake Heldsen

APPENDIX C
Groundwater Sampling Field Data

Stantec

Groundwater Monitoring/Gauging Field Measurements

Technician: D. Beard
Site Name: E. 12th Ave, Anchorage
Date: 10/23/18
Weather: Rain

Job: 185750590
Client: Mun. of Anchorage
PM:

WELL I.D.	CASING DIA Inches	DTP (feet bgs)	DTW (feet bgs)	Product Thickness (feet)	Amount Bailed	DTP (feet bgs)	DTW (feet bgs)	Product Thickness (feet)	Comments
GP-9	2"		25.42						TD 28.33
		/	25.42	/					
			25.42						
GP-8	2"		25.46						TD 27.96
		/	25.46	/					
			25.46						
GP-7	2"		24.43						TD 27.65
		/	24.43	/					
			24.43						
GP-6	2"		25.20						TD 28.40
		/	25.20	/					
			25.20						
GP-5	2"		25.35						SHEEN IDENTIFIED DIESEL-LIKE ODOR TD 30.45
		/	25.35	/					
			25.35						

Signed:

Stantec

LOW FLOW WATER SAMPLE FIELD DATA SHEET

PROJECT NAME: Lim. Phase II DATE: 10/23/18 WELL I.D.: GP-5

CLIENT NAME: Mun. of Anchorage PROJECT NO.: 185750590

SITE LOCATION: 726 E. 12th Ave, Anchorage

SAMPLED BY: D. Bench

DATE PURGED 10/23/18 START (2400hr) 18:20

DATE SAMPLED " SAMPLE TIME (2400hr) _____

SAMPLE TYPE: Groundwater ____ Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" ____ 3" ____ 4" ____

Casing Volume: (liters per foot) (0.64) (1.44) (2.45)

DEPTH TO WATER (feet) = _____ PURGE RATE (L/min) = _____

DEPTH TO BOTTOM OF WELL (feet) = _____

WATER COLUMN HEIGHT (feet) = _____ (H = TD-SWL) ACTUAL PURGE (L) = _____

FIELD MEASUREMENTS

DTW	TIME (2400hr)	VOLUME (L)	TEMP. (degrees F)	CONDUCTIVITY (Ms/cm)	pH (units)	D.O. (mg/l)	O.R.P. (mv)
25.53	18:20	4.00	45.87	0.351	6.52	1.80	110.1
25.53	18:25	5.25	45.56	0.350	6.55	0.98	73.5
25.56	1830	6.50	45.39	0.348	6.53	0.97	72.8
25.57	1835	7.75	45.33	0.348	6.48	0.80	66.8
25.57	1840	9.00	45.35	0.348	6.49	0.83	64.8
25.57	1845	10.25	45.34	0.348	6.49	0.81	64.7
25.57	1850	11.50	45.37	0.348	6.49	0.76	62.5
Calculated Variance of Final Three Samples:							
Acceptable Variance Limits:			≤ 3%	≤ 3%	≤ 0.1	≤ 0.3 mg/L	≤ 10mv

DEPTH TO PURGE INTAKE DURING PURGE: _____ SAMPLE DTW: _____

SAMPLE ID:	TIME:	SIZE/NUMBER OF SAMPLES:	PRESERVATIVE
GP-5	1910	3 VOAs	HCL

PURGING EQUIPMENT: Hurricane elec. Submersible

EQUIPMENT CALIBRATION NOTES: YSI 556 - TTT Environment

Flow Through Cell Disconnected Prior to Sample Collection?: (Y) N WQ Meter Calibration Date 10/22/18

WELL PAD CONDITION: _____ WELL CASING CONDITION: Good

WELL VAULT CONDITION: _____ SEAL PRESENT?: _____ BOLTS PRESENT?: _____

WELL INTEGRITY: Good WELL TAG: _____ LOCK#: _____

COMMENTS:

* 4L purged prior to DATA RECORDING. SHEEN & Petrol-like ODOR in purge water.

SIGNATURE: _____

Stantec

LOW FLOW WATER SAMPLE FIELD DATA SHEET

PROJECT NAME: Lim. Phase II DATE: 10/23/18 WELL I.D.: GP-6

CLIENT NAME: Mun. of Anchorage PROJECT NO.: 185750590

SITE LOCATION: 726 E. 12th Ave, Anchorage

SAMPLED BY: DBeard

DATE PURGED 10/23/18 START (2400hr) 1710

DATE SAMPLED 1 SAMPLE TIME (2400hr) 1750

SAMPLE TYPE: Groundwater X Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" X (0.64) 3" ____ (1.44) 4" ____ (2.45)

Casing Volume: (liters per foot)

DEPTH TO WATER (feet) = 25.20 PURGE RATE (L/min) = 0.25

DEPTH TO BOTTOM OF WELL (feet) = 28.40

WATER COLUMN HEIGHT (feet) = 3.2 (H = TD-SWL) ACTUAL PURGE (L) = 11.50

FIELD MEASUREMENTS

DTW	TIME (2400hr)	VOLUME (L)	TEMP. (degrees F)	CONDUCTIVITY (Ms/cm)	pH (units)	D.O. (mg/l)	O.R.P. (mv)
25.21	1710	* 4.00	45.43	0.305	6.49	2.76	184.5
25.22	1715	5.25	45.59	0.306	6.66	2.22	171.8
25.21	1720	6.50	46.01	0.307	6.70	2.10	167.4
25.21	1725	7.75	46.18	0.307	6.71	1.75	165.6
25.20	1730	9.00	46.33	0.308	6.73	1.53	164.0
25.20	1735	10.25	46.39	0.307	6.73	1.48	162.4
25.20	1740	11.50	46.42	0.307	6.73	1.25	161.7
Calculated Variance of Final Three Samples:			0.19%	0.32%	Ø	0.28	2.3
Acceptable Variance Limits:			≤ 3%	≤ 3%	≤ 0.1	≤ 0.3 mg/L	≤ 10mv

DEPTH TO PURGE INTAKE DURING PURGE: 27.5' SAMPLE DTW: 25.20

SAMPLE ID:	TIME:	SIZE/NUMBER OF SAMPLES:	PRESERVATIVE
GP-6	1750	3 VOAs	HCL
GP-6-Dup	1755	3 VOAs	HCL

PURGING EQUIPMENT: Hurricane Submers. (electric)

EQUIPMENT CALIBRATION NOTES: YSI-556 TIT ENVIRON.

Flow Through Cell Disconnected Prior to Sample Collection?: (Y)/N WQ Meter Calibration Date 10/22/18

WELL PAD CONDITION: ____ WELL CASING CONDITION: Good

WELL VAULT CONDITION: ____ SEAL PRESENT?: ____ BOLTS PRESENT?: ____

WELL INTEGRITY: Good WELL TAG: ____ LOCK#: ____

COMMENTS:

* 4 liter purged prior to recording parameters

SIGNATURE: [signature]

Stantec

LOW FLOW WATER SAMPLE FIELD DATA SHEET

PROJECT NAME: Lim. Phase II DATE: 10/23/18 WELL I.D.: GP-7

CLIENT NAME: Mun. of Anchorage PROJECT NO.: 185750590

SITE LOCATION: 726 E. 17th Ave, Anchorage

SAMPLED BY: D Beard

DATE PURGED 10/23/18 START (2400hr) 15:55

DATE SAMPLED " SAMPLE TIME (2400hr) 16:35

SAMPLE TYPE: Groundwater X Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" X 3" ____ 4" ____

Casing Volume: (liters per foot) (0.64) (1.44) (2.45)

DEPTH TO WATER (feet) = 24.43 PURGE RATE (L/min) = 0.25

DEPTH TO BOTTOM OF WELL (feet) = 27.65

WATER COLUMN HEIGHT (feet) = 3.22 (H = TD-SWL) ACTUAL PURGE (L) = 12.75

FIELD MEASUREMENTS

DTW	TIME (2400hr)	VOLUME (L)	TEMP. (degrees F)	CONDUCTIVITY (Ms/cm)	pH (units)	D.O. (mg/l)	O.R.P. (mv)
24.50	1555	* 4.00	45.33	0.271	5.97	7.52	191.6
24.50	1600	5.25	46.08	0.273	6.41	5.54	166.6
24.50	1605	6.50	46.35	0.274	6.46	5.27	161.5
24.50	1610	7.75	46.43	0.274	6.50	5.15	159.1
24.50	1615	9.00	46.37	0.274	6.51	5.15	158.3
24.50	1620	10.25	46.44	0.274	6.55	5.24	157.4
24.50	1625	11.50	46.58	0.274	6.58	5.17	156.6
24.50	1630	12.75	46.62	0.274	6.60	5.19	156.0
Calculated Variance of Final Three Samples:			0.39%	0	0.10	0.07	1.4
Acceptable Variance Limits:			≤ 3%	≤ 3%	≤ 0.1	≤ 0.3 mg/L	≤ 10mv

DEPTH TO PURGE INTAKE DURING PURGE: 26.5 SAMPLE DTW: 24.50

SAMPLE ID:	TIME:	SIZE/NUMBER OF SAMPLES:	PRESERVATIVE
GP-7	1635	3 VOAs	HCL

PURGING EQUIPMENT: Hurricane Elec. Submersible

EQUIPMENT CALIBRATION NOTES: YSI-556 TTI ENVIRON.

Flow Through Cell Disconnected Prior to Sample Collection?: (Y) N WQ Meter Calibration Date 10/22/18

WELL PAD CONDITION: ____ WELL CASING CONDITION: Good

WELL VAULT CONDITION: ____ SEAL PRESENT?: ____ BOLTS PRESENT?: ____

WELL INTEGRITY: Good WELL TAG: ____ LOCK#: ____

COMMENTS:

* 4 L Purged prior to Recording Parameters

SIGNATURE: [signature]

Stantec

LOW FLOW WATER SAMPLE FIELD DATA SHEET

PROJECT NAME: Limited Ph. II DATE: 10/23/18 WELL I.D.: GP-8

CLIENT NAME: Mun. of Anchorage PROJECT NO.: 185750590

SITE LOCATION: 726 E. 12th Ave

SAMPLED BY: DBeard

DATE PURGED 10/23/18 START (2400hr) 1440

DATE SAMPLED " SAMPLE TIME (2400hr) 15:15

SAMPLE TYPE: Groundwater X Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" X (0.64) 3" ____ (1.44) 4" ____ (2.45)

Casing Volume: (liters per foot)

DEPTH TO WATER (feet) = 25.46 PURGE RATE (L/min) = 0.25

DEPTH TO BOTTOM OF WELL (feet) = 28.10

WATER COLUMN HEIGHT (feet) = 2.64 (H = TD-SWL) ACTUAL PURGE (L) = 12.75

FIELD MEASUREMENTS

DTW	TIME (2400hr)	VOLUME (L)	TEMP. (degrees F)	CONDUCTIVITY (Ms/cm)	pH (units)	D.O. (mg/l)	O.R.P. (mv)
25.70	1440	* 4.00	44.55	0.305	6.36	1.91	194.8
25.68	1445	5.25	45.62	0.305	6.71	2.06	164.2
25.63	1450	6.50	45.76	0.303	6.74	2.22	160.5
25.61	1455	7.75	45.80	0.304	6.76	2.29	156.2
25.60	1500	9.00	45.94	0.305	6.77	2.26	152.5
25.61	1505	10.25	46.19	0.306	6.78	2.18	149.4
25.61	1510	11.50	46.48	0.306	6.79	2.24	145.8
25.61	1515	12.75	46.61	0.306	6.79	2.28	143.3
Calculated Variance of Final Three Samples:			0.90%	0	0.01	0.10	6.1
Acceptable Variance Limits:			≤ 3%	≤ 3%	≤ 0.1	≤ 0.3 mg/L	≤ 10mv

DEPTH TO PURGE INTAKE DURING PURGE: 24.5 27.- SAMPLE DTW: 25.61

SAMPLE ID:	TIME:	SIZE/NUMBER OF SAMPLES:	PRESERVATIVE
GP-8	15:15	3 VOAs	HCL

PURGING EQUIPMENT: Hurricane Elec. Submers.

EQUIPMENT CALIBRATION NOTES: YSI-556 TIT Environ.

Flow Through Cell Disconnected Prior to Sample Collection?: (Y) N WQ Meter Calibration Date 10/22/18

WELL PAD CONDITION: ____ WELL CASING CONDITION: Good

WELL VAULT CONDITION: ____ SEAL PRESENT?: ____ BOLTS PRESENT?: ____

WELL INTEGRITY: Good WELL TAG: ____ LOCK#: ____

COMMENTS:

* 4L purged prior to parameters recorded

SIGNATURE: [signature]

Stantec

LOW FLOW WATER SAMPLE FIELD DATA SHEET

PROJECT NAME: Lim. Ph. II DATE: 10/23/18 WELL I.D.: GP-9

CLIENT NAME: Mun. of Anchorage PROJECT NO.: 156750590

SITE LOCATION: NE E. 12th Ave.

SAMPLED BY: DBaird

DATE PURGED 10/23/18 START (2400hr)

DATE SAMPLED 10/23/18 SAMPLE TIME (2400hr)

SAMPLE TYPE: Groundwater X Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" X (0.64) 3" ____ (1.44) 4" ____ (2.45)
Casing Volume: (liters per foot)

DEPTH TO WATER (feet) = 25.42 PURGE RATE (L/min) = 0.25

DEPTH TO BOTTOM OF WELL (feet) = 28.33

WATER COLUMN HEIGHT (feet) = 2.91 (H = TD-SWL) ACTUAL PURGE (L) = 0.

FIELD MEASUREMENTS

DTW	TIME (2400hr)	VOLUME (L)	TEMP. (degrees F)	CONDUCTIVITY (Ms/cm)	pH (units)	D.O. (mg/l)	O.R.P. (mv)
25.60	1332	* 4.00	45.15	0.295	6.07	2.42	182.1
25.61	1337	5.25	45.08	0.294	6.24	2.52	174.9
25.60	1342	6.50	45.26	0.293	6.39	2.57	174.1
25.60	1347	7.75	45.19	0.294	6.43	2.46	173.2
25.61	1352	9.00	45.14	0.293	6.46	2.54	170.0
25.60	1357	10.25	45.28	0.295	6.47	2.47	167.-
25.60	1402	11.50	45.29	0.293	6.44	2.54	164.7
Calculated Variance of Final Three Samples:			0.33%	0	0.03	0.07	5.3
Acceptable Variance Limits:			≤ 3%	≤ 3%	≤ 0.1	≤ 0.3 mg/L	≤ 10mv

DEPTH TO PURGE INTAKE DURING PURGE: 27' SAMPLE DTW: ~~1400~~ 25.60

SAMPLE ID:	TIME:	SIZE/NUMBER OF SAMPLES:	PRESERVATIVE
GP-9	1405	3 VOAs	HCL

PURGING EQUIPMENT: Hurricane Elec Submersible

EQUIPMENT CALIBRATION NOTES: YSI-556 TTI Environ.

Flow Through Cell Disconnected Prior to Sample Collection?: (Y) N WQ Meter Calibration Date 10/22/18

WELL PAD CONDITION: Good WELL CASING CONDITION: Good

WELL VAULT CONDITION: ____ SEAL PRESENT?: ____ BOLTS PRESENT?: ____

WELL INTEGRITY: Good WELL TAG: ____ LOCK#: ____

COMMENTS:
* 4L purged prior to recording parameters

SIGNATURE: ____ Page 1 of 5

APPENDIX D

Laboratory Reports

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 31, 2018

Stantec- Bellevue, WA

Sample Delivery Group:	L1036522
Samples Received:	10/19/2018
Project Number:	185750590/5A4
Description:	726 E. 12th Ave
Site:	726TH E 12 AVE
Report To:	Cyrus Gorman 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004

Entire Report Reviewed By:

Jared Starkey
Project Manager

GP-1-0.5 L1036522-01 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 10:40 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Mercury by Method 7471A	WG1184356	1	10/21/18 23:32	10/22/18 14:32	ABL
Metals (ICP) by Method 6010C	WG1185417	1	10/24/18 04:36	10/25/18 02:06	TRB
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/24/18 20:23	TD
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1.01	10/24/18 10:14	10/24/18 17:42	DMG

GP-2-0.5 L1036522-02 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 11:00 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Mercury by Method 7471A	WG1184356	1	10/21/18 23:32	10/22/18 14:35	ABL
Metals (ICP) by Method 6010C	WG1185417	1	10/24/18 04:36	10/25/18 02:09	TRB
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/24/18 20:37	TD
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/25/18 10:11	TD
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 18:03	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	5	10/24/18 10:14	10/25/18 16:32	DMG

GP-3-0.5 L1036522-03 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 11:21 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Mercury by Method 7471A	WG1184356	1	10/21/18 23:32	10/22/18 14:38	ABL
Metals (ICP) by Method 6010C	WG1185417	1	10/24/18 04:36	10/25/18 02:16	TRB
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/24/18 20:51	TD
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 18:24	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	5	10/24/18 10:14	10/25/18 21:42	DMG

GP-4-0.5 L1036522-04 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 11:30 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1	10/16/18 11:30	10/26/18 01:10	LRL
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/24/18 21:04	TD
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 18:45	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	5	10/24/18 10:14	10/25/18 22:03	DMG

GP-4-3 L1036522-05 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 11:35 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.01	10/16/18 11:35	10/26/18 01:29	LRL
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1184268	1	10/23/18 10:22	10/24/18 21:18	TD
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 19:06	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	5	10/24/18 10:14	10/25/18 22:24	DMG

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

GP-5-0.5 L1036522-06 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 12:08 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.09	10/16/18 12:08	10/26/18 01:48	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 11:10	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/31/18 00:55	JF

GP-5-10 L1036522-07 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 12:26 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.18	10/16/18 12:26	10/26/18 02:07	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 11:23	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 19:48	DMG

GP-5-0.5DUP L1036522-08 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 12:10 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.08	10/16/18 12:10	10/26/18 02:26	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 11:36	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 20:09	DMG

GP-6-0.5 L1036522-09 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 14:53 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1	10/16/18 14:53	10/26/18 02:45	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	5	10/27/18 13:16	10/28/18 14:58	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 20:30	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	5	10/24/18 10:14	10/25/18 16:11	DMG

GP-6-10 L1036522-10 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 15:10 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185858	1	10/25/18 09:00	10/25/18 09:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.07	10/16/18 15:10	10/26/18 03:04	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 11:48	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 20:51	DMG

GP-5-25 L1036522-11 Solid

Collected by: Drew Beard | Collected date/time: 10/16/18 17:45 | Received date/time: 10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1185866	1	10/25/18 14:59	10/25/18 15:11	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1.03	10/16/18 17:45	10/26/18 03:23	LRL
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	3	10/27/18 13:16	10/28/18 12:01	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1184273	1	10/24/18 10:14	10/24/18 21:12	DMG

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

TRIP BLANK L1036522-12 Solid

Collected by	Collected date/time	Received date/time
Drew Beard	10/16/18 00:00	10/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186559	1	10/16/18 00:00	10/26/18 03:42	LRL

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

Jared Starkey
Project Manager

Metals (ICP) by Method 6010C

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG1185417	(MSD) R3353665-7	Barium

The associated batch QC was outside the established quality control range for precision.

Batch	Lab Sample ID	Analytes
WG1185417	(MSD) R3353665-7	Barium

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

Surrogate recovery limits have been exceeded; values are outside upper control limits.

Batch	Analyte	Lab Sample ID
WG1186559	4-Bromofluorobenzene	L1036522-11

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG1186559	Methylene Chloride	L1036522-12

Semi-Volatile Organic Compounds (GC) by Method AK102/103

The associated batch QC was below the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1187254	(LCSD) R3354612-3, L1036522-06, 07, 08, 09, 10, 11	AK102 DRO C10-C25

The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Batch	Lab Sample ID	Analytes
WG1187254	(MS) R3354612-4, (MSD) R3354612-5	AK102 DRO C10-C25

Polychlorinated Biphenyls (GC) by Method 8082 A

RPD between the primary and confirmatory analysis exceeded 40%

Batch	Lab Sample ID	Analytes
WG1184268	(LCS) R3353725-2	PCB 1260
WG1184268	(LCSD) R3353725-3	PCB 1260
WG1184268	(MS) R3353725-4	PCB 1260
WG1184268	(MSD) R3353725-5	PCB 1016 and PCB 1260

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG1184268	(MS) R3353725-4, (MSD) R3353725-5	PCB 1016

The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Batch	Lab Sample ID	Analytes
WG1184268	(MSD) R3353725-5	PCB 1260

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.1		1	10/25/2018 09:12	WG1185858

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0297		0.00337	0.0241	1	10/22/2018 14:32	WG1184356

Metals (ICP) by Method 6010C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	3.98		0.554	2.41	1	10/25/2018 02:06	WG1185417
Barium	92.1		0.205	0.602	1	10/25/2018 02:06	WG1185417
Cadmium	0.185	J	0.0843	0.602	1	10/25/2018 02:06	WG1185417
Chromium	27.4		0.169	1.20	1	10/25/2018 02:06	WG1185417
Lead	5.46		0.229	0.602	1	10/25/2018 02:06	WG1185417
Selenium	U		0.746	2.41	1	10/25/2018 02:06	WG1185417
Silver	U		0.144	1.20	1	10/25/2018 02:06	WG1185417

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
PCB 1016	U		0.00421	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1221	U		0.00646	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1232	U		0.00502	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1242	U		0.00383	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1248	U		0.00379	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1254	U		0.00568	0.0205	1	10/24/2018 20:23	WG1184268
PCB 1260	U		0.00595	0.0205	1	10/24/2018 20:23	WG1184268
(S) Decachlorobiphenyl	*55.1*			*10.0-135*		*10/24/2018 20:23*	WG1184268
(S) Tetrachloro-m-xylene	*80.5*			*10.0-139*		*10/24/2018 20:23*	WG1184268

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Acenaphthene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Acenaphthylene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Benzo(a)anthracene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Benzo(a)pyrene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Benzo(b)fluoranthene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Benzo(g,h,i)perylene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Benzo(k)fluoranthene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Chrysene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Dibenz(a,h)anthracene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Fluoranthene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Fluorene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Naphthalene	U		0.00243	0.0243	1.01	10/24/2018 17:42	WG1184273
Phenanthrene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
Pyrene	U		0.000730	0.00729	1.01	10/24/2018 17:42	WG1184273
1-Methylnaphthalene	U		0.00243	0.0243	1.01	10/24/2018 17:42	WG1184273
2-Methylnaphthalene	U		0.00243	0.0243	1.01	10/24/2018 17:42	WG1184273
2-Chloronaphthalene	U		0.00243	0.0243	1.01	10/24/2018 17:42	WG1184273
(S) Nitrobenzene-d5	*95.8*			*14.0-149*		*10/24/2018 17:42*	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	*80.3*			*34.0-125*		*10/24/2018 17:42*	WG1184273
(S) p-Terphenyl-d14	*96.9*			*23.0-120*		*10/24/2018 17:42*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.4		1	10/25/2018 09:12	WG1185858

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0374		0.00306	0.0219	1	10/22/2018 14:35	WG1184356

Metals (ICP) by Method 6010C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	2.73		0.503	2.19	1	10/25/2018 02:09	WG1185417
Barium	114		0.186	0.547	1	10/25/2018 02:09	WG1185417
Cadmium	1.62		0.0766	0.547	1	10/25/2018 02:09	WG1185417
Chromium	36.3		0.153	1.09	1	10/25/2018 02:09	WG1185417
Lead	53.5		0.208	0.547	1	10/25/2018 02:09	WG1185417
Selenium	U		0.679	2.19	1	10/25/2018 02:09	WG1185417
Silver	U		0.131	1.09	1	10/25/2018 02:09	WG1185417

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
PCB 1016	U		0.00383	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1221	U		0.00588	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1232	U		0.00456	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1242	U		0.00348	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1248	U		0.00345	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1254	U		0.00517	0.0186	1	10/24/2018 20:37	WG1184268
PCB 1260	0.0247		0.00541	0.0186	1	10/25/2018 10:11	WG1184268
(S) Decachlorobiphenyl	*76.0*			*10.0-135*		*10/25/2018 10:11*	WG1184268
(S) Decachlorobiphenyl	*56.2*			*10.0-135*		*10/24/2018 20:37*	WG1184268
(S) Tetrachloro-m-xylene	*87.7*			*10.0-139*		*10/25/2018 10:11*	WG1184268
(S) Tetrachloro-m-xylene	*87.0*			*10.0-139*		*10/24/2018 20:37*	WG1184268

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	0.00327	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Acenaphthene	0.00118	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Acenaphthylene	U		0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Benzo(a)anthracene	0.00270	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Benzo(a)pyrene	0.00543	J	0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Benzo(b)fluoranthene	0.00827	J	0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Benzo(g,h,i)perylene	0.0169	J	0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Benzo(k)fluoranthene	0.00337	J	0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Chrysene	0.00384	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Dibenz(a,h)anthracene	U		0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Fluoranthene	0.00460	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Fluorene	0.00123	J	0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Indeno(1,2,3-cd)pyrene	0.00467	J	0.00328	0.0328	5	10/25/2018 16:32	WG1184273
Naphthalene	0.00662	J	0.00219	0.0219	1	10/24/2018 18:03	WG1184273
Phenanthrene	0.00696		0.000657	0.00657	1	10/24/2018 18:03	WG1184273
Pyrene	0.00706		0.000657	0.00657	1	10/24/2018 18:03	WG1184273
1-Methylnaphthalene	0.00669	J	0.00219	0.0219	1	10/24/2018 18:03	WG1184273
2-Methylnaphthalene	0.0188	J	0.00219	0.0219	1	10/24/2018 18:03	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.00219	0.0219	1	10/24/2018 18:03	WG1184273
(S) Nitrobenzene-d5	*81.0*			*14.0-149*		*10/25/2018 16:32*	WG1184273
(S) Nitrobenzene-d5	*102*			*14.0-149*		*10/24/2018 18:03*	WG1184273
(S) 2-Fluorobiphenyl	*84.8*			*34.0-125*		*10/24/2018 18:03*	WG1184273
(S) 2-Fluorobiphenyl	*75.9*			*34.0-125*		*10/25/2018 16:32*	WG1184273
(S) p-Terphenyl-d14	*90.4*			*23.0-120*		*10/24/2018 18:03*	WG1184273
(S) p-Terphenyl-d14	*74.9*			*23.0-120*		*10/25/2018 16:32*	WG1184273

Sample Narrative:

L1036522-02 WG1184273: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.6		1	10/25/2018 09:12	WG1185858

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0401		0.00302	0.0216	1	10/22/2018 14:38	WG1184356

Metals (ICP) by Method 6010C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	U		0.496	2.16	1	10/25/2018 02:16	WG1185417
Barium	66.8		0.183	0.540	1	10/25/2018 02:16	WG1185417
Cadmium	U		0.0756	0.540	1	10/25/2018 02:16	WG1185417
Chromium	37.0		0.151	1.08	1	10/25/2018 02:16	WG1185417
Lead	23.8		0.205	0.540	1	10/25/2018 02:16	WG1185417
Selenium	U		0.669	2.16	1	10/25/2018 02:16	WG1185417
Silver	U		0.130	1.08	1	10/25/2018 02:16	WG1185417

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
PCB 1016	U		0.00378	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1221	U		0.00580	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1232	U		0.00450	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1242	U		0.00343	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1248	U		0.00340	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1254	U		0.00509	0.0183	1	10/24/2018 20:51	WG1184268
PCB 1260	U		0.00533	0.0183	1	10/24/2018 20:51	WG1184268
(S) Decachlorobiphenyl	*51.7*			*10.0-135*		*10/24/2018 20:51*	WG1184268
(S) Tetrachloro-m-xylene	*87.9*			*10.0-139*		*10/24/2018 20:51*	WG1184268

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	0.00382	J	0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Acenaphthene	0.00109	J	0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Acenaphthylene	U		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Benzo(a)anthracene	0.0169		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Benzo(a)pyrene	0.0175	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Benzo(b)fluoranthene	0.0233	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Benzo(g,h,i)perylene	0.0229	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Benzo(k)fluoranthene	0.0113	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Chrysene	0.0163		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Dibenz(a,h)anthracene	0.00555	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Fluoranthene	0.0318		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Fluorene	0.00159	J	0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Indeno(1,2,3-cd)pyrene	0.0125	J	0.00324	0.0324	5	10/25/2018 21:42	WG1184273
Naphthalene	0.00307	J	0.00216	0.0216	1	10/24/2018 18:24	WG1184273
Phenanthrene	0.0132		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
Pyrene	0.0274		0.000648	0.00648	1	10/24/2018 18:24	WG1184273
1-Methylnaphthalene	U		0.00216	0.0216	1	10/24/2018 18:24	WG1184273
2-Methylnaphthalene	0.00353	J	0.00216	0.0216	1	10/24/2018 18:24	WG1184273
2-Chloronaphthalene	U		0.00216	0.0216	1	10/24/2018 18:24	WG1184273
(S) Nitrobenzene-d5	*91.0*			*14.0-149*		*10/25/2018 21:42*	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*106*			*14.0-149*		*10/24/2018 18:24*	WG1184273
(S) 2-Fluorobiphenyl	*86.2*			*34.0-125*		*10/24/2018 18:24*	WG1184273
(S) 2-Fluorobiphenyl	*80.9*			*34.0-125*		*10/25/2018 21:42*	WG1184273
(S) p-Terphenyl-d14	*86.7*			*23.0-120*		*10/24/2018 18:24*	WG1184273
(S) p-Terphenyl-d14	*77.0*			*23.0-120*		*10/25/2018 21:42*	WG1184273

Sample Narrative:

L1036522-03 WG1184273: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.3		1	10/25/2018 09:12	WG1185858

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		0.0142	0.0260	1	10/26/2018 01:10	WG1186559
Acrylonitrile	U		0.00197	0.0130	1	10/26/2018 01:10	WG1186559
Benzene	U		0.000415	0.00104	1	10/26/2018 01:10	WG1186559
Bromobenzene	U		0.00109	0.0130	1	10/26/2018 01:10	WG1186559
Bromodichloromethane	U		0.000818	0.00260	1	10/26/2018 01:10	WG1186559
Bromoform	U		0.00621	0.0260	1	10/26/2018 01:10	WG1186559
Bromomethane	U		0.00384	0.0130	1	10/26/2018 01:10	WG1186559
n-Butylbenzene	U		0.00399	0.0130	1	10/26/2018 01:10	WG1186559
sec-Butylbenzene	U		0.00263	0.0130	1	10/26/2018 01:10	WG1186559
tert-Butylbenzene	U		0.00161	0.00519	1	10/26/2018 01:10	WG1186559
Carbon tetrachloride	U		0.00112	0.00519	1	10/26/2018 01:10	WG1186559
Chlorobenzene	U		0.000595	0.00260	1	10/26/2018 01:10	WG1186559
Chlorodibromomethane	U		0.000467	0.00260	1	10/26/2018 01:10	WG1186559
Chloroethane	U		0.00112	0.00519	1	10/26/2018 01:10	WG1186559
Chloroform	U		0.000431	0.00260	1	10/26/2018 01:10	WG1186559
Chloromethane	U		0.00144	0.0130	1	10/26/2018 01:10	WG1186559
2-Chlorotoluene	U		0.000955	0.00260	1	10/26/2018 01:10	WG1186559
4-Chlorotoluene	U		0.00117	0.00519	1	10/26/2018 01:10	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00529	0.0260	1	10/26/2018 01:10	WG1186559
1,2-Dibromoethane	U		0.000545	0.00260	1	10/26/2018 01:10	WG1186559
Dibromomethane	U		0.00104	0.00519	1	10/26/2018 01:10	WG1186559
1,2-Dichlorobenzene	U		0.00151	0.00519	1	10/26/2018 01:10	WG1186559
1,3-Dichlorobenzene	U		0.00176	0.00519	1	10/26/2018 01:10	WG1186559
1,4-Dichlorobenzene	U		0.00204	0.00519	1	10/26/2018 01:10	WG1186559
Dichlorodifluoromethane	U		0.000849	0.00260	1	10/26/2018 01:10	WG1186559
1,1-Dichloroethane	U		0.000597	0.00260	1	10/26/2018 01:10	WG1186559
1,2-Dichloroethane	U		0.000493	0.00260	1	10/26/2018 01:10	WG1186559
1,1-Dichloroethene	U		0.000519	0.00260	1	10/26/2018 01:10	WG1186559
cis-1,2-Dichloroethene	U		0.000716	0.00260	1	10/26/2018 01:10	WG1186559
trans-1,2-Dichloroethene	U		0.00148	0.00519	1	10/26/2018 01:10	WG1186559
1,2-Dichloropropane	U		0.00132	0.00519	1	10/26/2018 01:10	WG1186559
1,1-Dichloropropene	U		0.000727	0.00260	1	10/26/2018 01:10	WG1186559
1,3-Dichloropropane	U		0.00182	0.00519	1	10/26/2018 01:10	WG1186559
cis-1,3-Dichloropropene	U		0.000704	0.00260	1	10/26/2018 01:10	WG1186559
trans-1,3-Dichloropropene	U		0.00159	0.00519	1	10/26/2018 01:10	WG1186559
2,2-Dichloropropane	U		0.000823	0.00260	1	10/26/2018 01:10	WG1186559
Di-isopropyl ether	U		0.000363	0.00104	1	10/26/2018 01:10	WG1186559
Ethylbenzene	U		0.000550	0.00260	1	10/26/2018 01:10	WG1186559
Hexachloro-1,3-butadiene	U		0.0132	0.0260	1	10/26/2018 01:10	WG1186559
Isopropylbenzene	U		0.000896	0.00260	1	10/26/2018 01:10	WG1186559
p-Isopropyltoluene	U		0.00242	0.00519	1	10/26/2018 01:10	WG1186559
2-Butanone (MEK)	0.0240	J	0.0130	0.0260	1	10/26/2018 01:10	WG1186559
Methylene Chloride	U		0.00689	0.0260	1	10/26/2018 01:10	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0104	0.0260	1	10/26/2018 01:10	WG1186559
Methyl tert-butyl ether	U		0.000306	0.00104	1	10/26/2018 01:10	WG1186559
Naphthalene	U		0.00324	0.0130	1	10/26/2018 01:10	WG1186559
n-Propylbenzene	U		0.00122	0.00519	1	10/26/2018 01:10	WG1186559
Styrene	U		0.00283	0.0130	1	10/26/2018 01:10	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000519	0.00260	1	10/26/2018 01:10	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000405	0.00260	1	10/26/2018 01:10	WG1186559

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		0.000701	0.00260	1	10/26/2018 01:10	WG1186559
Tetrachloroethene	U		0.000727	0.00260	1	10/26/2018 01:10	WG1186559
Toluene	0.00154	J	0.00130	0.00519	1	10/26/2018 01:10	WG1186559
1,2,3-Trichlorobenzene	U		0.000649	0.00260	1	10/26/2018 01:10	WG1186559
1,2,4-Trichlorobenzene	U		0.00500	0.0130	1	10/26/2018 01:10	WG1186559
1,1,1-Trichloroethane	U		0.000285	0.00260	1	10/26/2018 01:10	WG1186559
1,1,2-Trichloroethane	U		0.000917	0.00260	1	10/26/2018 01:10	WG1186559
Trichloroethene	U		0.000415	0.00104	1	10/26/2018 01:10	WG1186559
Trichlorofluoromethane	U		0.000519	0.00260	1	10/26/2018 01:10	WG1186559
1,2,3-Trichloropropane	U		0.00529	0.0130	1	10/26/2018 01:10	WG1186559
1,2,4-Trimethylbenzene	U		0.00120	0.00519	1	10/26/2018 01:10	WG1186559
1,2,3-Trimethylbenzene	U		0.00119	0.00519	1	10/26/2018 01:10	WG1186559
Vinyl chloride	U		0.000709	0.00260	1	10/26/2018 01:10	WG1186559
1,3,5-Trimethylbenzene	U		0.00112	0.00519	1	10/26/2018 01:10	WG1186559
Xylenes, Total	U		0.00496	0.00675	1	10/26/2018 01:10	WG1186559
(S) Toluene-d8	*108*			*75.0-131*		*10/26/2018 01:10*	WG1186559
(S) Dibromofluoromethane	*94.5*			*65.0-129*		*10/26/2018 01:10*	WG1186559
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*10/26/2018 01:10*	WG1186559

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.00363	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1221	U		0.00557	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1232	U		0.00433	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1242	U		0.00330	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1248	U		0.00327	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1254	U		0.00490	0.0176	1	10/24/2018 21:04	WG1184268
PCB 1260	U		0.00513	0.0176	1	10/24/2018 21:04	WG1184268
(S) Decachlorobiphenyl	*59.8*			*10.0-135*		*10/24/2018 21:04*	WG1184268
(S) Tetrachloro-m-xylene	*91.2*			*10.0-139*		*10/24/2018 21:04*	WG1184268

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00154	J	0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Acenaphthene	U		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Acenaphthylene	U		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Benzo(a)anthracene	0.00606	J	0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Benzo(a)pyrene	0.00719	J	0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Benzo(b)fluoranthene	0.00993	J	0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Benzo(g,h,i)perylene	0.00679	J	0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Benzo(k)fluoranthene	0.00512	J	0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Chrysene	0.00629		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Dibenz(a,h)anthracene	U		0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Fluoranthene	0.0118		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Fluorene	U		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Indeno(1,2,3-cd)pyrene	0.00475	J	0.00311	0.0311	5	10/25/2018 22:03	WG1184273
Naphthalene	U		0.00208	0.0208	1	10/24/2018 18:45	WG1184273
Phenanthrene	0.00543	J	0.000623	0.00623	1	10/24/2018 18:45	WG1184273
Pyrene	0.00982		0.000623	0.00623	1	10/24/2018 18:45	WG1184273
1-Methylnaphthalene	U		0.00208	0.0208	1	10/24/2018 18:45	WG1184273
2-Methylnaphthalene	U		0.00208	0.0208	1	10/24/2018 18:45	WG1184273
2-Chloronaphthalene	U		0.00208	0.0208	1	10/24/2018 18:45	WG1184273
(S) Nitrobenzene-d5	*110*			*14.0-149*		*10/24/2018 18:45*	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*96.6*			*14.0-149*		*10/25/2018 22:03*	WG1184273
(S) 2-Fluorobiphenyl	*89.1*			*34.0-125*		*10/24/2018 18:45*	WG1184273
(S) 2-Fluorobiphenyl	*86.5*			*34.0-125*		*10/25/2018 22:03*	WG1184273
(S) p-Terphenyl-d14	*82.1*			*23.0-120*		*10/25/2018 22:03*	WG1184273
(S) p-Terphenyl-d14	*91.3*			*23.0-120*		*10/24/2018 18:45*	WG1184273

Sample Narrative:

L1036522-04 WG1184273: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.3		1	10/25/2018 09:12	WG1185858

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	0.0560		0.0151	0.0277	1.01	10/26/2018 01:29	WG1186559
Acrylonitrile	U		0.00210	0.0138	1.01	10/26/2018 01:29	WG1186559
Benzene	U		0.000442	0.00111	1.01	10/26/2018 01:29	WG1186559
Bromobenzene	U		0.00116	0.0138	1.01	10/26/2018 01:29	WG1186559
Bromodichloromethane	U		0.000872	0.00277	1.01	10/26/2018 01:29	WG1186559
Bromoform	U		0.00661	0.0277	1.01	10/26/2018 01:29	WG1186559
Bromomethane	U		0.00410	0.0138	1.01	10/26/2018 01:29	WG1186559
n-Butylbenzene	U		0.00425	0.0138	1.01	10/26/2018 01:29	WG1186559
sec-Butylbenzene	U		0.00280	0.0138	1.01	10/26/2018 01:29	WG1186559
tert-Butylbenzene	U		0.00171	0.00553	1.01	10/26/2018 01:29	WG1186559
Carbon tetrachloride	U		0.00119	0.00553	1.01	10/26/2018 01:29	WG1186559
Chlorobenzene	U		0.000634	0.00277	1.01	10/26/2018 01:29	WG1186559
Chlorodibromomethane	U		0.000497	0.00277	1.01	10/26/2018 01:29	WG1186559
Chloroethane	U		0.00119	0.00553	1.01	10/26/2018 01:29	WG1186559
Chloroform	U		0.000459	0.00277	1.01	10/26/2018 01:29	WG1186559
Chloromethane	U		0.00153	0.0138	1.01	10/26/2018 01:29	WG1186559
2-Chlorotoluene	U		0.00102	0.00277	1.01	10/26/2018 01:29	WG1186559
4-Chlorotoluene	U		0.00125	0.00553	1.01	10/26/2018 01:29	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00564	0.0277	1.01	10/26/2018 01:29	WG1186559
1,2-Dibromoethane	U		0.000580	0.00277	1.01	10/26/2018 01:29	WG1186559
Dibromomethane	U		0.00111	0.00553	1.01	10/26/2018 01:29	WG1186559
1,2-Dichlorobenzene	U		0.00160	0.00553	1.01	10/26/2018 01:29	WG1186559
1,3-Dichlorobenzene	U		0.00188	0.00553	1.01	10/26/2018 01:29	WG1186559
1,4-Dichlorobenzene	U		0.00218	0.00553	1.01	10/26/2018 01:29	WG1186559
Dichlorodifluoromethane	U		0.000905	0.00277	1.01	10/26/2018 01:29	WG1186559
1,1-Dichloroethane	U		0.000636	0.00277	1.01	10/26/2018 01:29	WG1186559
1,2-Dichloroethane	U		0.000526	0.00277	1.01	10/26/2018 01:29	WG1186559
1,1-Dichloroethene	U		0.000553	0.00277	1.01	10/26/2018 01:29	WG1186559
cis-1,2-Dichloroethene	U		0.000763	0.00277	1.01	10/26/2018 01:29	WG1186559
trans-1,2-Dichloroethene	U		0.00158	0.00553	1.01	10/26/2018 01:29	WG1186559
1,2-Dichloropropane	U		0.00140	0.00553	1.01	10/26/2018 01:29	WG1186559
1,1-Dichloropropene	U		0.000774	0.00277	1.01	10/26/2018 01:29	WG1186559
1,3-Dichloropropane	U		0.00194	0.00553	1.01	10/26/2018 01:29	WG1186559
cis-1,3-Dichloropropene	U		0.000750	0.00277	1.01	10/26/2018 01:29	WG1186559
trans-1,3-Dichloropropene	U		0.00169	0.00553	1.01	10/26/2018 01:29	WG1186559
2,2-Dichloropropane	U		0.000877	0.00277	1.01	10/26/2018 01:29	WG1186559
Di-isopropyl ether	U		0.000388	0.00111	1.01	10/26/2018 01:29	WG1186559
Ethylbenzene	U		0.000586	0.00277	1.01	10/26/2018 01:29	WG1186559
Hexachloro-1,3-butadiene	U		0.0140	0.0277	1.01	10/26/2018 01:29	WG1186559
Isopropylbenzene	U		0.000955	0.00277	1.01	10/26/2018 01:29	WG1186559
p-Isopropyltoluene	U		0.00257	0.00553	1.01	10/26/2018 01:29	WG1186559
2-Butanone (MEK)	0.0654		0.0138	0.0277	1.01	10/26/2018 01:29	WG1186559
Methylene Chloride	U		0.00735	0.0277	1.01	10/26/2018 01:29	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0111	0.0277	1.01	10/26/2018 01:29	WG1186559
Methyl tert-butyl ether	U		0.000326	0.00111	1.01	10/26/2018 01:29	WG1186559
Naphthalene	U		0.00345	0.0138	1.01	10/26/2018 01:29	WG1186559
n-Propylbenzene	U		0.00130	0.00553	1.01	10/26/2018 01:29	WG1186559
Styrene	U		0.00302	0.0138	1.01	10/26/2018 01:29	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000553	0.00277	1.01	10/26/2018 01:29	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000432	0.00277	1.01	10/26/2018 01:29	WG1186559

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		0.000747	0.00277	1.01	10/26/2018 01:29	WG1186559
Tetrachloroethene	U		0.000774	0.00277	1.01	10/26/2018 01:29	WG1186559
Toluene	U		0.00138	0.00553	1.01	10/26/2018 01:29	WG1186559
1,2,3-Trichlorobenzene	U		0.000691	0.00277	1.01	10/26/2018 01:29	WG1186559
1,2,4-Trichlorobenzene	U		0.00533	0.0138	1.01	10/26/2018 01:29	WG1186559
1,1,1-Trichloroethane	U		0.000304	0.00277	1.01	10/26/2018 01:29	WG1186559
1,1,2-Trichloroethane	U		0.000977	0.00277	1.01	10/26/2018 01:29	WG1186559
Trichloroethene	U		0.000442	0.00111	1.01	10/26/2018 01:29	WG1186559
Trichlorofluoromethane	U		0.000553	0.00277	1.01	10/26/2018 01:29	WG1186559
1,2,3-Trichloropropane	U		0.00564	0.0138	1.01	10/26/2018 01:29	WG1186559
1,2,4-Trimethylbenzene	U		0.00128	0.00553	1.01	10/26/2018 01:29	WG1186559
1,2,3-Trimethylbenzene	U		0.00127	0.00553	1.01	10/26/2018 01:29	WG1186559
Vinyl chloride	U		0.000756	0.00277	1.01	10/26/2018 01:29	WG1186559
1,3,5-Trimethylbenzene	U		0.00119	0.00553	1.01	10/26/2018 01:29	WG1186559
Xylenes, Total	U		0.00529	0.00719	1.01	10/26/2018 01:29	WG1186559
(S) Toluene-d8	*107*			*75.0-131*		*10/26/2018 01:29*	WG1186559
(S) Dibromofluoromethane	*97.1*			*65.0-129*		*10/26/2018 01:29*	WG1186559
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*10/26/2018 01:29*	WG1186559

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.00383	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1221	U		0.00588	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1232	U		0.00457	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1242	U		0.00348	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1248	U		0.00345	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1254	U		0.00517	0.0186	1	10/24/2018 21:18	WG1184268
PCB 1260	U		0.00541	0.0186	1	10/24/2018 21:18	WG1184268
(S) Decachlorobiphenyl	*42.6*			*10.0-135*		*10/24/2018 21:18*	WG1184268
(S) Tetrachloro-m-xylene	*69.8*			*10.0-139*		*10/24/2018 21:18*	WG1184268

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.0310		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Acenaphthene	U		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Acenaphthylene	U		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Benzo(a)anthracene	0.168		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Benzo(a)pyrene	0.153		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Benzo(b)fluoranthene	0.193		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Benzo(g,h,i)perylene	0.125		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Benzo(k)fluoranthene	0.0755		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Chrysene	0.152		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Dibenz(a,h)anthracene	0.0363		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Fluoranthene	0.207		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Fluorene	0.00507	J	0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Indeno(1,2,3-cd)pyrene	0.101		0.00329	0.0329	5	10/25/2018 22:24	WG1184273
Naphthalene	0.0134	J	0.00219	0.0219	1	10/24/2018 19:06	WG1184273
Phenanthrene	0.0672		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
Pyrene	0.166		0.000657	0.00657	1	10/24/2018 19:06	WG1184273
1-Methylnaphthalene	0.0149	J	0.00219	0.0219	1	10/24/2018 19:06	WG1184273
2-Methylnaphthalene	0.0275		0.00219	0.0219	1	10/24/2018 19:06	WG1184273
2-Chloronaphthalene	U		0.00219	0.0219	1	10/24/2018 19:06	WG1184273
(S) Nitrobenzene-d5	*86.9*			*14.0-149*		*10/25/2018 22:24*	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*108*			*14.0-149*		*10/24/2018 19:06*	WG1184273
(S) 2-Fluorobiphenyl	*81.5*			*34.0-125*		*10/24/2018 19:06*	WG1184273
(S) 2-Fluorobiphenyl	*75.4*			*34.0-125*		*10/25/2018 22:24*	WG1184273
(S) p-Terphenyl-d14	*78.2*			*23.0-120*		*10/25/2018 22:24*	WG1184273
(S) p-Terphenyl-d14	*91.7*			*23.0-120*		*10/24/2018 19:06*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.7		1	10/25/2018 09:12	WG1185858

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	0.0717		0.0162	0.0297	1.09	10/26/2018 01:48	WG1186559
Acrylonitrile	U		0.00226	0.0149	1.09	10/26/2018 01:48	WG1186559
Benzene	0.00117	J	0.000475	0.00119	1.09	10/26/2018 01:48	WG1186559
Bromobenzene	U		0.00124	0.0149	1.09	10/26/2018 01:48	WG1186559
Bromodichloromethane	U		0.000937	0.00297	1.09	10/26/2018 01:48	WG1186559
Bromoform	U		0.00711	0.0297	1.09	10/26/2018 01:48	WG1186559
Bromomethane	U		0.00439	0.0149	1.09	10/26/2018 01:48	WG1186559
n-Butylbenzene	U		0.00456	0.0149	1.09	10/26/2018 01:48	WG1186559
sec-Butylbenzene	U		0.00301	0.0149	1.09	10/26/2018 01:48	WG1186559
tert-Butylbenzene	U		0.00184	0.00594	1.09	10/26/2018 01:48	WG1186559
Carbon tetrachloride	U		0.00129	0.00594	1.09	10/26/2018 01:48	WG1186559
Chlorobenzene	U		0.000680	0.00297	1.09	10/26/2018 01:48	WG1186559
Chlorodibromomethane	U		0.000534	0.00297	1.09	10/26/2018 01:48	WG1186559
Chloroethane	U		0.00129	0.00594	1.09	10/26/2018 01:48	WG1186559
Chloroform	U		0.000493	0.00297	1.09	10/26/2018 01:48	WG1186559
Chloromethane	U		0.00166	0.0149	1.09	10/26/2018 01:48	WG1186559
2-Chlorotoluene	U		0.00109	0.00297	1.09	10/26/2018 01:48	WG1186559
4-Chlorotoluene	U		0.00134	0.00594	1.09	10/26/2018 01:48	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00606	0.0297	1.09	10/26/2018 01:48	WG1186559
1,2-Dibromoethane	U		0.000624	0.00297	1.09	10/26/2018 01:48	WG1186559
Dibromomethane	U		0.00119	0.00594	1.09	10/26/2018 01:48	WG1186559
1,2-Dichlorobenzene	U		0.00172	0.00594	1.09	10/26/2018 01:48	WG1186559
1,3-Dichlorobenzene	U		0.00202	0.00594	1.09	10/26/2018 01:48	WG1186559
1,4-Dichlorobenzene	U		0.00234	0.00594	1.09	10/26/2018 01:48	WG1186559
Dichlorodifluoromethane	U		0.000973	0.00297	1.09	10/26/2018 01:48	WG1186559
1,1-Dichloroethane	U		0.000684	0.00297	1.09	10/26/2018 01:48	WG1186559
1,2-Dichloroethane	U		0.000565	0.00297	1.09	10/26/2018 01:48	WG1186559
1,1-Dichloroethene	U		0.000594	0.00297	1.09	10/26/2018 01:48	WG1186559
cis-1,2-Dichloroethene	U		0.000820	0.00297	1.09	10/26/2018 01:48	WG1186559
trans-1,2-Dichloroethene	U		0.00170	0.00594	1.09	10/26/2018 01:48	WG1186559
1,2-Dichloropropane	U		0.00150	0.00594	1.09	10/26/2018 01:48	WG1186559
1,1-Dichloropropene	U		0.000832	0.00297	1.09	10/26/2018 01:48	WG1186559
1,3-Dichloropropane	U		0.00208	0.00594	1.09	10/26/2018 01:48	WG1186559
cis-1,3-Dichloropropene	U		0.000806	0.00297	1.09	10/26/2018 01:48	WG1186559
trans-1,3-Dichloropropene	U		0.00182	0.00594	1.09	10/26/2018 01:48	WG1186559
2,2-Dichloropropane	U		0.000942	0.00297	1.09	10/26/2018 01:48	WG1186559
Di-isopropyl ether	U		0.000417	0.00119	1.09	10/26/2018 01:48	WG1186559
Ethylbenzene	0.00273	J	0.000630	0.00297	1.09	10/26/2018 01:48	WG1186559
Hexachloro-1,3-butadiene	U		0.0150	0.0297	1.09	10/26/2018 01:48	WG1186559
Isopropylbenzene	0.00238	J	0.00103	0.00297	1.09	10/26/2018 01:48	WG1186559
p-Isopropyltoluene	U		0.00277	0.00594	1.09	10/26/2018 01:48	WG1186559
2-Butanone (MEK)	0.0289	J	0.0148	0.0297	1.09	10/26/2018 01:48	WG1186559
Methylene Chloride	U		0.00790	0.0297	1.09	10/26/2018 01:48	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0119	0.0297	1.09	10/26/2018 01:48	WG1186559
Methyl tert-butyl ether	U		0.000351	0.00119	1.09	10/26/2018 01:48	WG1186559
Naphthalene	0.00400	J	0.00371	0.0149	1.09	10/26/2018 01:48	WG1186559
n-Propylbenzene	0.0103		0.00141	0.00594	1.09	10/26/2018 01:48	WG1186559
Styrene	U		0.00325	0.0149	1.09	10/26/2018 01:48	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000594	0.00297	1.09	10/26/2018 01:48	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000463	0.00297	1.09	10/26/2018 01:48	WG1186559

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		0.000803	0.00297	1.09	10/26/2018 01:48	WG1186559
Tetrachloroethene	U		0.000832	0.00297	1.09	10/26/2018 01:48	WG1186559
Toluene	0.00407	J	0.00148	0.00594	1.09	10/26/2018 01:48	WG1186559
1,2,3-Trichlorobenzene	U		0.000743	0.00297	1.09	10/26/2018 01:48	WG1186559
1,2,4-Trichlorobenzene	U		0.00573	0.0149	1.09	10/26/2018 01:48	WG1186559
1,1,1-Trichloroethane	U		0.000327	0.00297	1.09	10/26/2018 01:48	WG1186559
1,1,2-Trichloroethane	0.106		0.00105	0.00297	1.09	10/26/2018 01:48	WG1186559
Trichloroethene	U		0.000475	0.00119	1.09	10/26/2018 01:48	WG1186559
Trichlorofluoromethane	U		0.000594	0.00297	1.09	10/26/2018 01:48	WG1186559
1,2,3-Trichloropropane	U		0.00606	0.0149	1.09	10/26/2018 01:48	WG1186559
1,2,4-Trimethylbenzene	0.0899		0.00137	0.00594	1.09	10/26/2018 01:48	WG1186559
1,2,3-Trimethylbenzene	0.0244		0.00136	0.00594	1.09	10/26/2018 01:48	WG1186559
Vinyl chloride	U		0.000811	0.00297	1.09	10/26/2018 01:48	WG1186559
1,3,5-Trimethylbenzene	0.0282		0.00129	0.00594	1.09	10/26/2018 01:48	WG1186559
Xylenes, Total	0.0333		0.00568	0.00773	1.09	10/26/2018 01:48	WG1186559
(S) Toluene-d8	*110*			*75.0-131*		*10/26/2018 01:48*	WG1186559
(S) Dibromofluoromethane	*93.4*			*65.0-129*		*10/26/2018 01:48*	WG1186559
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*10/26/2018 01:48*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.56	21.8	1	10/28/2018 11:10	WG1187254
(S) o-Terphenyl	*57.4*			*50.0-150*		*10/28/2018 11:10*	WG1187254

Sample Narrative:

L1036522-06 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Acenaphthene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Acenaphthylene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Benzo(a)anthracene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Benzo(a)pyrene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Benzo(b)fluoranthene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Benzo(g,h,i)perylene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Benzo(k)fluoranthene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Chrysene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Dibenz(a,h)anthracene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Fluoranthene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Fluorene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Naphthalene	U		0.00218	0.0218	1	10/31/2018 00:55	WG1184273
Phenanthrene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
Pyrene	U		0.000654	0.00654	1	10/31/2018 00:55	WG1184273
1-Methylnaphthalene	U		0.00218	0.0218	1	10/31/2018 00:55	WG1184273
2-Methylnaphthalene	U		0.00218	0.0218	1	10/31/2018 00:55	WG1184273
2-Chloronaphthalene	U		0.00218	0.0218	1	10/31/2018 00:55	WG1184273
(S) Nitrobenzene-d5	*68.3*			*14.0-149*		*10/31/2018 00:55*	WG1184273
(S) 2-Fluorobiphenyl	*78.5*			*34.0-125*		*10/31/2018 00:55*	WG1184273
(S) p-Terphenyl-d14	*72.9*			*23.0-120*		*10/31/2018 00:55*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.9		1	10/25/2018 09:12	WG1185858

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		0.0166	0.0301	1.18	10/26/2018 02:07	WG1186559
Acrylonitrile	U		0.00229	0.0151	1.18	10/26/2018 02:07	WG1186559
Benzene	0.00258		0.000482	0.00121	1.18	10/26/2018 02:07	WG1186559
Bromobenzene	U		0.00127	0.0151	1.18	10/26/2018 02:07	WG1186559
Bromodichloromethane	U		0.000950	0.00301	1.18	10/26/2018 02:07	WG1186559
Bromoform	U		0.00721	0.0301	1.18	10/26/2018 02:07	WG1186559
Bromomethane	U		0.00446	0.0151	1.18	10/26/2018 02:07	WG1186559
n-Butylbenzene	U		0.00463	0.0151	1.18	10/26/2018 02:07	WG1186559
sec-Butylbenzene	U		0.00304	0.0151	1.18	10/26/2018 02:07	WG1186559
tert-Butylbenzene	U		0.00187	0.00603	1.18	10/26/2018 02:07	WG1186559
Carbon tetrachloride	U		0.00130	0.00603	1.18	10/26/2018 02:07	WG1186559
Chlorobenzene	U		0.000691	0.00301	1.18	10/26/2018 02:07	WG1186559
Chlorodibromomethane	U		0.000543	0.00301	1.18	10/26/2018 02:07	WG1186559
Chloroethane	U		0.00130	0.00603	1.18	10/26/2018 02:07	WG1186559
Chloroform	U		0.000501	0.00301	1.18	10/26/2018 02:07	WG1186559
Chloromethane	U		0.00168	0.0151	1.18	10/26/2018 02:07	WG1186559
2-Chlorotoluene	U		0.00110	0.00301	1.18	10/26/2018 02:07	WG1186559
4-Chlorotoluene	U		0.00136	0.00603	1.18	10/26/2018 02:07	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00615	0.0301	1.18	10/26/2018 02:07	WG1186559
1,2-Dibromoethane	U		0.000633	0.00301	1.18	10/26/2018 02:07	WG1186559
Dibromomethane	U		0.00121	0.00603	1.18	10/26/2018 02:07	WG1186559
1,2-Dichlorobenzene	U		0.00175	0.00603	1.18	10/26/2018 02:07	WG1186559
1,3-Dichlorobenzene	U		0.00205	0.00603	1.18	10/26/2018 02:07	WG1186559
1,4-Dichlorobenzene	U		0.00237	0.00603	1.18	10/26/2018 02:07	WG1186559
Dichlorodifluoromethane	U		0.000986	0.00301	1.18	10/26/2018 02:07	WG1186559
1,1-Dichloroethane	U		0.000693	0.00301	1.18	10/26/2018 02:07	WG1186559
1,2-Dichloroethane	U		0.000572	0.00301	1.18	10/26/2018 02:07	WG1186559
1,1-Dichloroethene	U		0.000603	0.00301	1.18	10/26/2018 02:07	WG1186559
cis-1,2-Dichloroethene	U		0.000832	0.00301	1.18	10/26/2018 02:07	WG1186559
trans-1,2-Dichloroethene	U		0.00173	0.00603	1.18	10/26/2018 02:07	WG1186559
1,2-Dichloropropane	U		0.00153	0.00603	1.18	10/26/2018 02:07	WG1186559
1,1-Dichloropropene	U		0.000844	0.00301	1.18	10/26/2018 02:07	WG1186559
1,3-Dichloropropane	U		0.00210	0.00603	1.18	10/26/2018 02:07	WG1186559
cis-1,3-Dichloropropene	U		0.000817	0.00301	1.18	10/26/2018 02:07	WG1186559
trans-1,3-Dichloropropene	U		0.00184	0.00603	1.18	10/26/2018 02:07	WG1186559
2,2-Dichloropropane	U		0.000956	0.00301	1.18	10/26/2018 02:07	WG1186559
Di-isopropyl ether	U		0.000422	0.00121	1.18	10/26/2018 02:07	WG1186559
Ethylbenzene	U		0.000639	0.00301	1.18	10/26/2018 02:07	WG1186559
Hexachloro-1,3-butadiene	U		0.0153	0.0301	1.18	10/26/2018 02:07	WG1186559
Isopropylbenzene	U		0.00104	0.00301	1.18	10/26/2018 02:07	WG1186559
p-Isopropyltoluene	U		0.00281	0.00603	1.18	10/26/2018 02:07	WG1186559
2-Butanone (MEK)	0.0415		0.0151	0.0301	1.18	10/26/2018 02:07	WG1186559
Methylene Chloride	U		0.00801	0.0301	1.18	10/26/2018 02:07	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0121	0.0301	1.18	10/26/2018 02:07	WG1186559
Methyl tert-butyl ether	U		0.000356	0.00121	1.18	10/26/2018 02:07	WG1186559
Naphthalene	U		0.00376	0.0151	1.18	10/26/2018 02:07	WG1186559
n-Propylbenzene	U		0.00142	0.00603	1.18	10/26/2018 02:07	WG1186559
Styrene	U		0.00329	0.0151	1.18	10/26/2018 02:07	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000603	0.00301	1.18	10/26/2018 02:07	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000470	0.00301	1.18	10/26/2018 02:07	WG1186559

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		0.000813	0.00301	1.18	10/26/2018 02:07	WG1186559
Tetrachloroethene	U		0.000844	0.00301	1.18	10/26/2018 02:07	WG1186559
Toluene	U		0.00151	0.00603	1.18	10/26/2018 02:07	WG1186559
1,2,3-Trichlorobenzene	U		0.000754	0.00301	1.18	10/26/2018 02:07	WG1186559
1,2,4-Trichlorobenzene	U		0.00581	0.0151	1.18	10/26/2018 02:07	WG1186559
1,1,1-Trichloroethane	U		0.000331	0.00301	1.18	10/26/2018 02:07	WG1186559
1,1,2-Trichloroethane	U		0.00106	0.00301	1.18	10/26/2018 02:07	WG1186559
Trichloroethene	U		0.000482	0.00121	1.18	10/26/2018 02:07	WG1186559
Trichlorofluoromethane	U		0.000603	0.00301	1.18	10/26/2018 02:07	WG1186559
1,2,3-Trichloropropane	U		0.00615	0.0151	1.18	10/26/2018 02:07	WG1186559
1,2,4-Trimethylbenzene	0.00151	J	0.00140	0.00603	1.18	10/26/2018 02:07	WG1186559
1,2,3-Trimethylbenzene	U		0.00139	0.00603	1.18	10/26/2018 02:07	WG1186559
Vinyl chloride	U		0.000823	0.00301	1.18	10/26/2018 02:07	WG1186559
1,3,5-Trimethylbenzene	U		0.00130	0.00603	1.18	10/26/2018 02:07	WG1186559
Xylenes, Total	U		0.00576	0.00784	1.18	10/26/2018 02:07	WG1186559
(S) Toluene-d8	*105*			*75.0-131*		*10/26/2018 02:07*	WG1186559
(S) Dibromofluoromethane	*95.1*			*65.0-129*		*10/26/2018 02:07*	WG1186559
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*10/26/2018 02:07*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.21	20.4	1	10/28/2018 11:23	WG1187254
(S) o-Terphenyl	*75.9*			*50.0-150*		*10/28/2018 11:23*	WG1187254

Sample Narrative:

L1036522-07 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Acenaphthene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Acenaphthylene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Benzo(a)anthracene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Benzo(a)pyrene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Benzo(b)fluoranthene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Benzo(g,h,i)perylene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Benzo(k)fluoranthene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Chrysene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Dibenz(a,h)anthracene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Fluoranthene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Fluorene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Naphthalene	U		0.00204	0.0204	1	10/24/2018 19:48	WG1184273
Phenanthrene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
Pyrene	U		0.000613	0.00613	1	10/24/2018 19:48	WG1184273
1-Methylnaphthalene	U		0.00204	0.0204	1	10/24/2018 19:48	WG1184273
2-Methylnaphthalene	U		0.00204	0.0204	1	10/24/2018 19:48	WG1184273
2-Chloronaphthalene	U		0.00204	0.0204	1	10/24/2018 19:48	WG1184273
(S) Nitrobenzene-d5	*91.5*			*14.0-149*		*10/24/2018 19:48*	WG1184273
(S) 2-Fluorobiphenyl	*90.4*			*34.0-125*		*10/24/2018 19:48*	WG1184273
(S) p-Terphenyl-d14	*98.4*			*23.0-120*		*10/24/2018 19:48*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.7		1	10/25/2018 09:12	WG1185858

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		0.0171	0.0311	1.08	10/26/2018 02:26	WG1186559
Acrylonitrile	U		0.00236	0.0156	1.08	10/26/2018 02:26	WG1186559
Benzene	0.00120	J	0.000498	0.00125	1.08	10/26/2018 02:26	WG1186559
Bromobenzene	U		0.00130	0.0156	1.08	10/26/2018 02:26	WG1186559
Bromodichloromethane	U		0.000981	0.00311	1.08	10/26/2018 02:26	WG1186559
Bromoform	U		0.00745	0.0311	1.08	10/26/2018 02:26	WG1186559
Bromomethane	U		0.00461	0.0156	1.08	10/26/2018 02:26	WG1186559
n-Butylbenzene	U		0.00478	0.0156	1.08	10/26/2018 02:26	WG1186559
sec-Butylbenzene	U		0.00315	0.0156	1.08	10/26/2018 02:26	WG1186559
tert-Butylbenzene	U		0.00193	0.00623	1.08	10/26/2018 02:26	WG1186559
Carbon tetrachloride	U		0.00135	0.00623	1.08	10/26/2018 02:26	WG1186559
Chlorobenzene	U		0.000714	0.00311	1.08	10/26/2018 02:26	WG1186559
Chlorodibromomethane	U		0.000560	0.00311	1.08	10/26/2018 02:26	WG1186559
Chloroethane	U		0.00135	0.00623	1.08	10/26/2018 02:26	WG1186559
Chloroform	U		0.000516	0.00311	1.08	10/26/2018 02:26	WG1186559
Chloromethane	U		0.00173	0.0156	1.08	10/26/2018 02:26	WG1186559
2-Chlorotoluene	U		0.00115	0.00311	1.08	10/26/2018 02:26	WG1186559
4-Chlorotoluene	U		0.00141	0.00623	1.08	10/26/2018 02:26	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00635	0.0311	1.08	10/26/2018 02:26	WG1186559
1,2-Dibromoethane	U		0.000654	0.00311	1.08	10/26/2018 02:26	WG1186559
Dibromomethane	U		0.00125	0.00623	1.08	10/26/2018 02:26	WG1186559
1,2-Dichlorobenzene	U		0.00181	0.00623	1.08	10/26/2018 02:26	WG1186559
1,3-Dichlorobenzene	U		0.00212	0.00623	1.08	10/26/2018 02:26	WG1186559
1,4-Dichlorobenzene	U		0.00246	0.00623	1.08	10/26/2018 02:26	WG1186559
Dichlorodifluoromethane	U		0.00102	0.00311	1.08	10/26/2018 02:26	WG1186559
1,1-Dichloroethane	U		0.000716	0.00311	1.08	10/26/2018 02:26	WG1186559
1,2-Dichloroethane	U		0.000591	0.00311	1.08	10/26/2018 02:26	WG1186559
1,1-Dichloroethene	U		0.000623	0.00311	1.08	10/26/2018 02:26	WG1186559
cis-1,2-Dichloroethene	U		0.000859	0.00311	1.08	10/26/2018 02:26	WG1186559
trans-1,2-Dichloroethene	U		0.00178	0.00623	1.08	10/26/2018 02:26	WG1186559
1,2-Dichloropropane	U		0.00158	0.00623	1.08	10/26/2018 02:26	WG1186559
1,1-Dichloropropene	U		0.000872	0.00311	1.08	10/26/2018 02:26	WG1186559
1,3-Dichloropropane	U		0.00218	0.00623	1.08	10/26/2018 02:26	WG1186559
cis-1,3-Dichloropropene	U		0.000844	0.00311	1.08	10/26/2018 02:26	WG1186559
trans-1,3-Dichloropropene	U		0.00190	0.00623	1.08	10/26/2018 02:26	WG1186559
2,2-Dichloropropane	U		0.000987	0.00311	1.08	10/26/2018 02:26	WG1186559
Di-isopropyl ether	U		0.000436	0.00125	1.08	10/26/2018 02:26	WG1186559
Ethylbenzene	U		0.000659	0.00311	1.08	10/26/2018 02:26	WG1186559
Hexachloro-1,3-butadiene	U		0.0158	0.0311	1.08	10/26/2018 02:26	WG1186559
Isopropylbenzene	U		0.00107	0.00311	1.08	10/26/2018 02:26	WG1186559
p-Isopropyltoluene	U		0.00291	0.00623	1.08	10/26/2018 02:26	WG1186559
2-Butanone (MEK)	0.0362		0.0156	0.0311	1.08	10/26/2018 02:26	WG1186559
Methylene Chloride	U		0.00827	0.0311	1.08	10/26/2018 02:26	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0125	0.0311	1.08	10/26/2018 02:26	WG1186559
Methyl tert-butyl ether	U		0.000368	0.00125	1.08	10/26/2018 02:26	WG1186559
Naphthalene	U		0.00389	0.0156	1.08	10/26/2018 02:26	WG1186559
n-Propylbenzene	U		0.00146	0.00623	1.08	10/26/2018 02:26	WG1186559
Styrene	U		0.00340	0.0156	1.08	10/26/2018 02:26	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000623	0.00311	1.08	10/26/2018 02:26	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000485	0.00311	1.08	10/26/2018 02:26	WG1186559

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		0.000840	0.00311	1.08	10/26/2018 02:26	WG1186559
Tetrachloroethene	U		0.000872	0.00311	1.08	10/26/2018 02:26	WG1186559
Toluene	0.00266	J	0.00156	0.00623	1.08	10/26/2018 02:26	WG1186559
1,2,3-Trichlorobenzene	U		0.000778	0.00311	1.08	10/26/2018 02:26	WG1186559
1,2,4-Trichlorobenzene	U		0.00600	0.0156	1.08	10/26/2018 02:26	WG1186559
1,1,1-Trichloroethane	U		0.000342	0.00311	1.08	10/26/2018 02:26	WG1186559
1,1,2-Trichloroethane	0.0128		0.00110	0.00311	1.08	10/26/2018 02:26	WG1186559
Trichloroethene	U		0.000498	0.00125	1.08	10/26/2018 02:26	WG1186559
Trichlorofluoromethane	U		0.000623	0.00311	1.08	10/26/2018 02:26	WG1186559
1,2,3-Trichloropropane	U		0.00635	0.0156	1.08	10/26/2018 02:26	WG1186559
1,2,4-Trimethylbenzene	0.0127		0.00144	0.00623	1.08	10/26/2018 02:26	WG1186559
1,2,3-Trimethylbenzene	0.00473	J	0.00143	0.00623	1.08	10/26/2018 02:26	WG1186559
Vinyl chloride	U		0.000851	0.00311	1.08	10/26/2018 02:26	WG1186559
1,3,5-Trimethylbenzene	0.00373	J	0.00135	0.00623	1.08	10/26/2018 02:26	WG1186559
Xylenes, Total	0.00772	J	0.00595	0.00809	1.08	10/26/2018 02:26	WG1186559
(S) Toluene-d8	*106*			*75.0-131*		*10/26/2018 02:26*	WG1186559
(S) Dibromofluoromethane	*97.7*			*65.0-129*		*10/26/2018 02:26*	WG1186559
(S) 4-Bromofluorobenzene	*103*			*67.0-138*		*10/26/2018 02:26*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	9.98	J J4	5.88	23.1	1	10/28/2018 11:36	WG1187254
(S) o-Terphenyl	*50.6*			*50.0-150*		*10/28/2018 11:36*	WG1187254

Sample Narrative:

L1036522-08 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Acenaphthene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Acenaphthylene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Benzo(a)anthracene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Benzo(a)pyrene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Benzo(b)fluoranthene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Benzo(g,h,i)perylene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Benzo(k)fluoranthene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Chrysene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Dibenz(a,h)anthracene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Fluoranthene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Fluorene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Naphthalene	U		0.00231	0.0231	1	10/24/2018 20:09	WG1184273
Phenanthrene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
Pyrene	U		0.000692	0.00692	1	10/24/2018 20:09	WG1184273
1-Methylnaphthalene	U		0.00231	0.0231	1	10/24/2018 20:09	WG1184273
2-Methylnaphthalene	U		0.00231	0.0231	1	10/24/2018 20:09	WG1184273
2-Chloronaphthalene	U		0.00231	0.0231	1	10/24/2018 20:09	WG1184273
(S) Nitrobenzene-d5	*89.2*			*14.0-149*		*10/24/2018 20:09*	WG1184273
(S) 2-Fluorobiphenyl	*88.2*			*34.0-125*		*10/24/2018 20:09*	WG1184273
(S) p-Terphenyl-d14	*96.9*			*23.0-120*		*10/24/2018 20:09*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.3		1	10/25/2018 09:12	WG1185858

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		0.0147	0.0268	1	10/26/2018 02:45	WG1186559
Acrylonitrile	U		0.00204	0.0134	1	10/26/2018 02:45	WG1186559
Benzene	0.00109		0.000429	0.00107	1	10/26/2018 02:45	WG1186559
Bromobenzene	U		0.00113	0.0134	1	10/26/2018 02:45	WG1186559
Bromodichloromethane	U		0.000845	0.00268	1	10/26/2018 02:45	WG1186559
Bromoform	U		0.00641	0.0268	1	10/26/2018 02:45	WG1186559
Bromomethane	U		0.00397	0.0134	1	10/26/2018 02:45	WG1186559
n-Butylbenzene	U		0.00412	0.0134	1	10/26/2018 02:45	WG1186559
sec-Butylbenzene	U		0.00271	0.0134	1	10/26/2018 02:45	WG1186559
tert-Butylbenzene	U		0.00166	0.00536	1	10/26/2018 02:45	WG1186559
Carbon tetrachloride	U		0.00116	0.00536	1	10/26/2018 02:45	WG1186559
Chlorobenzene	U		0.000614	0.00268	1	10/26/2018 02:45	WG1186559
Chlorodibromomethane	U		0.000483	0.00268	1	10/26/2018 02:45	WG1186559
Chloroethane	U		0.00116	0.00536	1	10/26/2018 02:45	WG1186559
Chloroform	U		0.000445	0.00268	1	10/26/2018 02:45	WG1186559
Chloromethane	U		0.00149	0.0134	1	10/26/2018 02:45	WG1186559
2-Chlorotoluene	U		0.000986	0.00268	1	10/26/2018 02:45	WG1186559
4-Chlorotoluene	U		0.00121	0.00536	1	10/26/2018 02:45	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00547	0.0268	1	10/26/2018 02:45	WG1186559
1,2-Dibromoethane	U		0.000563	0.00268	1	10/26/2018 02:45	WG1186559
Dibromomethane	U		0.00107	0.00536	1	10/26/2018 02:45	WG1186559
1,2-Dichlorobenzene	U		0.00155	0.00536	1	10/26/2018 02:45	WG1186559
1,3-Dichlorobenzene	U		0.00182	0.00536	1	10/26/2018 02:45	WG1186559
1,4-Dichlorobenzene	U		0.00211	0.00536	1	10/26/2018 02:45	WG1186559
Dichlorodifluoromethane	U		0.000877	0.00268	1	10/26/2018 02:45	WG1186559
1,1-Dichloroethane	U		0.000617	0.00268	1	10/26/2018 02:45	WG1186559
1,2-Dichloroethane	U		0.000509	0.00268	1	10/26/2018 02:45	WG1186559
1,1-Dichloroethene	U		0.000536	0.00268	1	10/26/2018 02:45	WG1186559
cis-1,2-Dichloroethene	U		0.000740	0.00268	1	10/26/2018 02:45	WG1186559
trans-1,2-Dichloroethene	U		0.00153	0.00536	1	10/26/2018 02:45	WG1186559
1,2-Dichloropropane	U		0.00136	0.00536	1	10/26/2018 02:45	WG1186559
1,1-Dichloropropene	U		0.000751	0.00268	1	10/26/2018 02:45	WG1186559
1,3-Dichloropropane	U		0.00188	0.00536	1	10/26/2018 02:45	WG1186559
cis-1,3-Dichloropropene	U		0.000727	0.00268	1	10/26/2018 02:45	WG1186559
trans-1,3-Dichloropropene	U		0.00164	0.00536	1	10/26/2018 02:45	WG1186559
2,2-Dichloropropane	U		0.000850	0.00268	1	10/26/2018 02:45	WG1186559
Di-isopropyl ether	U		0.000375	0.00107	1	10/26/2018 02:45	WG1186559
Ethylbenzene	0.000645	J	0.000568	0.00268	1	10/26/2018 02:45	WG1186559
Hexachloro-1,3-butadiene	U		0.0136	0.0268	1	10/26/2018 02:45	WG1186559
Isopropylbenzene	U		0.000925	0.00268	1	10/26/2018 02:45	WG1186559
p-Isopropyltoluene	U		0.00250	0.00536	1	10/26/2018 02:45	WG1186559
2-Butanone (MEK)	0.0463		0.0134	0.0268	1	10/26/2018 02:45	WG1186559
Methylene Chloride	U		0.00712	0.0268	1	10/26/2018 02:45	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0107	0.0268	1	10/26/2018 02:45	WG1186559
Methyl tert-butyl ether	U		0.000316	0.00107	1	10/26/2018 02:45	WG1186559
Naphthalene	U		0.00335	0.0134	1	10/26/2018 02:45	WG1186559
n-Propylbenzene	U		0.00127	0.00536	1	10/26/2018 02:45	WG1186559
Styrene	U		0.00293	0.0134	1	10/26/2018 02:45	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000536	0.00268	1	10/26/2018 02:45	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000418	0.00268	1	10/26/2018 02:45	WG1186559

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		0.000724	0.00268	1	10/26/2018 02:45	WG1186559
Tetrachloroethene	U		0.000751	0.00268	1	10/26/2018 02:45	WG1186559
Toluene	0.00526	J	0.00134	0.00536	1	10/26/2018 02:45	WG1186559
1,2,3-Trichlorobenzene	U		0.000670	0.00268	1	10/26/2018 02:45	WG1186559
1,2,4-Trichlorobenzene	U		0.00517	0.0134	1	10/26/2018 02:45	WG1186559
1,1,1-Trichloroethane	U		0.000295	0.00268	1	10/26/2018 02:45	WG1186559
1,1,2-Trichloroethane	U		0.000947	0.00268	1	10/26/2018 02:45	WG1186559
Trichloroethene	U		0.000429	0.00107	1	10/26/2018 02:45	WG1186559
Trichlorofluoromethane	U		0.000536	0.00268	1	10/26/2018 02:45	WG1186559
1,2,3-Trichloropropane	U		0.00547	0.0134	1	10/26/2018 02:45	WG1186559
1,2,4-Trimethylbenzene	0.00173	J	0.00124	0.00536	1	10/26/2018 02:45	WG1186559
1,2,3-Trimethylbenzene	U		0.00123	0.00536	1	10/26/2018 02:45	WG1186559
Vinyl chloride	U		0.000732	0.00268	1	10/26/2018 02:45	WG1186559
1,3,5-Trimethylbenzene	U		0.00116	0.00536	1	10/26/2018 02:45	WG1186559
Xylenes, Total	0.00554	J	0.00513	0.00697	1	10/26/2018 02:45	WG1186559
(S) Toluene-d8	*107*			*75.0-131*		*10/26/2018 02:45*	WG1186559
(S) Dibromofluoromethane	*95.8*			*65.0-129*		*10/26/2018 02:45*	WG1186559
(S) 4-Bromofluorobenzene	*103*			*67.0-138*		*10/26/2018 02:45*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	27.6	J J4	27.3	107	5	10/28/2018 14:58	WG1187254
(S) o-Terphenyl	*73.2*			*50.0-150*		*10/28/2018 14:58*	WG1187254

Sample Narrative:

L1036522-09 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.0133		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Acenaphthene	0.00193	J	0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Acenaphthylene	U		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Benzo(a)anthracene	0.0300		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Benzo(a)pyrene	0.0219	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Benzo(b)fluoranthene	0.0270	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Benzo(g,h,i)perylene	0.0192	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Benzo(k)fluoranthene	0.0105	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Chrysene	0.0311		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Dibenz(a,h)anthracene	0.00440	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Fluoranthene	0.0522		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Fluorene	0.00377	J	0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Indeno(1,2,3-cd)pyrene	0.0175	J	0.00322	0.0322	5	10/25/2018 16:11	WG1184273
Naphthalene	0.00469	J	0.00214	0.0214	1	10/24/2018 20:30	WG1184273
Phenanthrene	0.0480		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
Pyrene	0.0745		0.000643	0.00643	1	10/24/2018 20:30	WG1184273
1-Methylnaphthalene	0.00352	J	0.00214	0.0214	1	10/24/2018 20:30	WG1184273
2-Methylnaphthalene	0.00611	J	0.00214	0.0214	1	10/24/2018 20:30	WG1184273
2-Chloronaphthalene	U		0.00214	0.0214	1	10/24/2018 20:30	WG1184273
(S) Nitrobenzene-d5	*99.5*			*14.0-149*		*10/24/2018 20:30*	WG1184273
(S) Nitrobenzene-d5	*77.9*			*14.0-149*		*10/25/2018 16:11*	WG1184273
(S) 2-Fluorobiphenyl	*88.7*			*34.0-125*		*10/24/2018 20:30*	WG1184273
(S) 2-Fluorobiphenyl	*74.7*			*34.0-125*		*10/25/2018 16:11*	WG1184273
(S) p-Terphenyl-d14	*94.4*			*23.0-120*		*10/24/2018 20:30*	WG1184273

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*76.4*			*23.0-120*		*10/25/2018 16:11*	WG1184273

Sample Narrative:

L1036522-09 WG1184273: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.0		1	10/25/2018 09:12	WG1185858

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		0.0150	0.0276	1.07	10/26/2018 03:04	WG1186559
Acrylonitrile	U		0.00209	0.0138	1.07	10/26/2018 03:04	WG1186559
Benzene	U		0.000441	0.00110	1.07	10/26/2018 03:04	WG1186559
Bromobenzene	U		0.00115	0.0138	1.07	10/26/2018 03:04	WG1186559
Bromodichloromethane	U		0.000869	0.00276	1.07	10/26/2018 03:04	WG1186559
Bromoform	U		0.00660	0.0276	1.07	10/26/2018 03:04	WG1186559
Bromomethane	U		0.00408	0.0138	1.07	10/26/2018 03:04	WG1186559
n-Butylbenzene	U		0.00424	0.0138	1.07	10/26/2018 03:04	WG1186559
sec-Butylbenzene	U		0.00279	0.0138	1.07	10/26/2018 03:04	WG1186559
tert-Butylbenzene	U		0.00171	0.00551	1.07	10/26/2018 03:04	WG1186559
Carbon tetrachloride	U		0.00120	0.00551	1.07	10/26/2018 03:04	WG1186559
Chlorobenzene	U		0.000632	0.00276	1.07	10/26/2018 03:04	WG1186559
Chlorodibromomethane	U		0.000497	0.00276	1.07	10/26/2018 03:04	WG1186559
Chloroethane	U		0.00120	0.00551	1.07	10/26/2018 03:04	WG1186559
Chloroform	U		0.000458	0.00276	1.07	10/26/2018 03:04	WG1186559
Chloromethane	U		0.00154	0.0138	1.07	10/26/2018 03:04	WG1186559
2-Chlorotoluene	U		0.00101	0.00276	1.07	10/26/2018 03:04	WG1186559
4-Chlorotoluene	U		0.00125	0.00551	1.07	10/26/2018 03:04	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00563	0.0276	1.07	10/26/2018 03:04	WG1186559
1,2-Dibromoethane	U		0.000579	0.00276	1.07	10/26/2018 03:04	WG1186559
Dibromomethane	U		0.00110	0.00551	1.07	10/26/2018 03:04	WG1186559
1,2-Dichlorobenzene	U		0.00160	0.00551	1.07	10/26/2018 03:04	WG1186559
1,3-Dichlorobenzene	U		0.00188	0.00551	1.07	10/26/2018 03:04	WG1186559
1,4-Dichlorobenzene	U		0.00217	0.00551	1.07	10/26/2018 03:04	WG1186559
Dichlorodifluoromethane	U		0.000902	0.00276	1.07	10/26/2018 03:04	WG1186559
1,1-Dichloroethane	U		0.000634	0.00276	1.07	10/26/2018 03:04	WG1186559
1,2-Dichloroethane	U		0.000524	0.00276	1.07	10/26/2018 03:04	WG1186559
1,1-Dichloroethene	U		0.000551	0.00276	1.07	10/26/2018 03:04	WG1186559
cis-1,2-Dichloroethene	U		0.000761	0.00276	1.07	10/26/2018 03:04	WG1186559
trans-1,2-Dichloroethene	U		0.00158	0.00551	1.07	10/26/2018 03:04	WG1186559
1,2-Dichloropropane	U		0.00140	0.00551	1.07	10/26/2018 03:04	WG1186559
1,1-Dichloropropene	U		0.000772	0.00276	1.07	10/26/2018 03:04	WG1186559
1,3-Dichloropropane	U		0.00193	0.00551	1.07	10/26/2018 03:04	WG1186559
cis-1,3-Dichloropropene	U		0.000747	0.00276	1.07	10/26/2018 03:04	WG1186559
trans-1,3-Dichloropropene	U		0.00169	0.00551	1.07	10/26/2018 03:04	WG1186559
2,2-Dichloropropane	U		0.000874	0.00276	1.07	10/26/2018 03:04	WG1186559
Di-isopropyl ether	U		0.000385	0.00110	1.07	10/26/2018 03:04	WG1186559
Ethylbenzene	U		0.000584	0.00276	1.07	10/26/2018 03:04	WG1186559
Hexachloro-1,3-butadiene	U		0.0140	0.0276	1.07	10/26/2018 03:04	WG1186559
Isopropylbenzene	U		0.000951	0.00276	1.07	10/26/2018 03:04	WG1186559
p-Isopropyltoluene	U		0.00257	0.00551	1.07	10/26/2018 03:04	WG1186559
2-Butanone (MEK)	0.0348		0.0138	0.0276	1.07	10/26/2018 03:04	WG1186559
Methylene Chloride	U		0.00732	0.0276	1.07	10/26/2018 03:04	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0110	0.0276	1.07	10/26/2018 03:04	WG1186559
Methyl tert-butyl ether	U		0.000326	0.00110	1.07	10/26/2018 03:04	WG1186559
Naphthalene	U		0.00344	0.0138	1.07	10/26/2018 03:04	WG1186559
n-Propylbenzene	U		0.00130	0.00551	1.07	10/26/2018 03:04	WG1186559
Styrene	U		0.00301	0.0138	1.07	10/26/2018 03:04	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000551	0.00276	1.07	10/26/2018 03:04	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000430	0.00276	1.07	10/26/2018 03:04	WG1186559

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		0.000744	0.00276	1.07	10/26/2018 03:04	WG1186559
Tetrachloroethene	U		0.000772	0.00276	1.07	10/26/2018 03:04	WG1186559
Toluene	U		0.00138	0.00551	1.07	10/26/2018 03:04	WG1186559
1,2,3-Trichlorobenzene	U		0.000689	0.00276	1.07	10/26/2018 03:04	WG1186559
1,2,4-Trichlorobenzene	U		0.00532	0.0138	1.07	10/26/2018 03:04	WG1186559
1,1,1-Trichloroethane	U		0.000303	0.00276	1.07	10/26/2018 03:04	WG1186559
1,1,2-Trichloroethane	U		0.000974	0.00276	1.07	10/26/2018 03:04	WG1186559
Trichloroethene	U		0.000441	0.00110	1.07	10/26/2018 03:04	WG1186559
Trichlorofluoromethane	U		0.000551	0.00276	1.07	10/26/2018 03:04	WG1186559
1,2,3-Trichloropropane	U		0.00563	0.0138	1.07	10/26/2018 03:04	WG1186559
1,2,4-Trimethylbenzene	U		0.00128	0.00551	1.07	10/26/2018 03:04	WG1186559
1,2,3-Trimethylbenzene	U		0.00127	0.00551	1.07	10/26/2018 03:04	WG1186559
Vinyl chloride	U		0.000753	0.00276	1.07	10/26/2018 03:04	WG1186559
1,3,5-Trimethylbenzene	U		0.00120	0.00551	1.07	10/26/2018 03:04	WG1186559
Xylenes, Total	U		0.00527	0.00717	1.07	10/26/2018 03:04	WG1186559
(S) Toluene-d8	*103*			*75.0-131*		*10/26/2018 03:04*	WG1186559
(S) Dibromofluoromethane	*95.7*			*65.0-129*		*10/26/2018 03:04*	WG1186559
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*10/26/2018 03:04*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.26	20.6	1	10/28/2018 11:48	WG1187254
(S) o-Terphenyl	*70.2*			*50.0-150*		*10/28/2018 11:48*	WG1187254

Sample Narrative:

L1036522-10 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Acenaphthene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Acenaphthylene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Benzo(a)anthracene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Benzo(a)pyrene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Benzo(b)fluoranthene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Benzo(g,h,i)perylene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Benzo(k)fluoranthene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Chrysene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Dibenz(a,h)anthracene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Fluoranthene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Fluorene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Naphthalene	U		0.00206	0.0206	1	10/24/2018 20:51	WG1184273
Phenanthrene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
Pyrene	U		0.000618	0.00618	1	10/24/2018 20:51	WG1184273
1-Methylnaphthalene	U		0.00206	0.0206	1	10/24/2018 20:51	WG1184273
2-Methylnaphthalene	U		0.00206	0.0206	1	10/24/2018 20:51	WG1184273
2-Chloronaphthalene	U		0.00206	0.0206	1	10/24/2018 20:51	WG1184273
(S) Nitrobenzene-d5	*89.3*			*14.0-149*		*10/24/2018 20:51*	WG1184273
(S) 2-Fluorobiphenyl	*86.6*			*34.0-125*		*10/24/2018 20:51*	WG1184273
(S) p-Terphenyl-d14	*94.2*			*23.0-120*		*10/24/2018 20:51*	WG1184273

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.8		1	10/25/2018 15:11	WG1185866

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		0.0164	0.0300	1.03	10/26/2018 03:23	WG1186559
Acrylonitrile	U		0.00228	0.0150	1.03	10/26/2018 03:23	WG1186559
Benzene	0.00224		0.000480	0.00120	1.03	10/26/2018 03:23	WG1186559
Bromobenzene	U		0.00126	0.0150	1.03	10/26/2018 03:23	WG1186559
Bromodichloromethane	U		0.000946	0.00300	1.03	10/26/2018 03:23	WG1186559
Bromoform	U		0.00718	0.0300	1.03	10/26/2018 03:23	WG1186559
Bromomethane	U		0.00444	0.0150	1.03	10/26/2018 03:23	WG1186559
n-Butylbenzene	U		0.00462	0.0150	1.03	10/26/2018 03:23	WG1186559
sec-Butylbenzene	0.205		0.00303	0.0150	1.03	10/26/2018 03:23	WG1186559
tert-Butylbenzene	0.0122		0.00186	0.00600	1.03	10/26/2018 03:23	WG1186559
Carbon tetrachloride	U		0.00129	0.00600	1.03	10/26/2018 03:23	WG1186559
Chlorobenzene	0.0174		0.000688	0.00300	1.03	10/26/2018 03:23	WG1186559
Chlorodibromomethane	U		0.000541	0.00300	1.03	10/26/2018 03:23	WG1186559
Chloroethane	U		0.00129	0.00600	1.03	10/26/2018 03:23	WG1186559
Chloroform	U		0.000498	0.00300	1.03	10/26/2018 03:23	WG1186559
Chloromethane	U		0.00167	0.0150	1.03	10/26/2018 03:23	WG1186559
2-Chlorotoluene	U		0.00111	0.00300	1.03	10/26/2018 03:23	WG1186559
4-Chlorotoluene	U		0.00135	0.00600	1.03	10/26/2018 03:23	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00612	0.0300	1.03	10/26/2018 03:23	WG1186559
1,2-Dibromoethane	U		0.000631	0.00300	1.03	10/26/2018 03:23	WG1186559
Dibromomethane	U		0.00120	0.00600	1.03	10/26/2018 03:23	WG1186559
1,2-Dichlorobenzene	U		0.00174	0.00600	1.03	10/26/2018 03:23	WG1186559
1,3-Dichlorobenzene	U		0.00204	0.00600	1.03	10/26/2018 03:23	WG1186559
1,4-Dichlorobenzene	U		0.00237	0.00600	1.03	10/26/2018 03:23	WG1186559
Dichlorodifluoromethane	U		0.000981	0.00300	1.03	10/26/2018 03:23	WG1186559
1,1-Dichloroethane	U		0.000690	0.00300	1.03	10/26/2018 03:23	WG1186559
1,2-Dichloroethane	U		0.000570	0.00300	1.03	10/26/2018 03:23	WG1186559
1,1-Dichloroethene	U		0.000600	0.00300	1.03	10/26/2018 03:23	WG1186559
cis-1,2-Dichloroethene	U		0.000829	0.00300	1.03	10/26/2018 03:23	WG1186559
trans-1,2-Dichloroethene	U		0.00171	0.00600	1.03	10/26/2018 03:23	WG1186559
1,2-Dichloropropane	U		0.00153	0.00600	1.03	10/26/2018 03:23	WG1186559
1,1-Dichloropropene	U		0.000840	0.00300	1.03	10/26/2018 03:23	WG1186559
1,3-Dichloropropane	U		0.00210	0.00600	1.03	10/26/2018 03:23	WG1186559
cis-1,3-Dichloropropene	U		0.000814	0.00300	1.03	10/26/2018 03:23	WG1186559
trans-1,3-Dichloropropene	U		0.00184	0.00600	1.03	10/26/2018 03:23	WG1186559
2,2-Dichloropropane	U		0.000952	0.00300	1.03	10/26/2018 03:23	WG1186559
Di-isopropyl ether	U		0.000420	0.00120	1.03	10/26/2018 03:23	WG1186559
Ethylbenzene	0.00249	J	0.000636	0.00300	1.03	10/26/2018 03:23	WG1186559
Hexachloro-1,3-butadiene	U		0.0153	0.0300	1.03	10/26/2018 03:23	WG1186559
Isopropylbenzene	0.00702		0.00104	0.00300	1.03	10/26/2018 03:23	WG1186559
p-Isopropyltoluene	0.0103		0.00280	0.00600	1.03	10/26/2018 03:23	WG1186559
2-Butanone (MEK)	0.0857		0.0150	0.0300	1.03	10/26/2018 03:23	WG1186559
Methylene Chloride	U		0.00797	0.0300	1.03	10/26/2018 03:23	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0120	0.0300	1.03	10/26/2018 03:23	WG1186559
Methyl tert-butyl ether	U		0.000354	0.00120	1.03	10/26/2018 03:23	WG1186559
Naphthalene	0.239		0.00374	0.0150	1.03	10/26/2018 03:23	WG1186559
n-Propylbenzene	0.0220		0.00142	0.00600	1.03	10/26/2018 03:23	WG1186559
Styrene	U		0.00328	0.0150	1.03	10/26/2018 03:23	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000600	0.00300	1.03	10/26/2018 03:23	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000469	0.00300	1.03	10/26/2018 03:23	WG1186559

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		0.000810	0.00300	1.03	10/26/2018 03:23	WG1186559
Tetrachloroethene	U		0.000840	0.00300	1.03	10/26/2018 03:23	WG1186559
Toluene	0.00278	J	0.00150	0.00600	1.03	10/26/2018 03:23	WG1186559
1,2,3-Trichlorobenzene	U		0.000751	0.00300	1.03	10/26/2018 03:23	WG1186559
1,2,4-Trichlorobenzene	U		0.00578	0.0150	1.03	10/26/2018 03:23	WG1186559
1,1,1-Trichloroethane	U		0.000330	0.00300	1.03	10/26/2018 03:23	WG1186559
1,1,2-Trichloroethane	0.170		0.00106	0.00300	1.03	10/26/2018 03:23	WG1186559
Trichloroethene	U		0.000480	0.00120	1.03	10/26/2018 03:23	WG1186559
Trichlorofluoromethane	U		0.000600	0.00300	1.03	10/26/2018 03:23	WG1186559
1,2,3-Trichloropropane	U		0.00612	0.0150	1.03	10/26/2018 03:23	WG1186559
1,2,4-Trimethylbenzene	0.0524		0.00139	0.00600	1.03	10/26/2018 03:23	WG1186559
1,2,3-Trimethylbenzene	U		0.00138	0.00600	1.03	10/26/2018 03:23	WG1186559
Vinyl chloride	U		0.000819	0.00300	1.03	10/26/2018 03:23	WG1186559
1,3,5-Trimethylbenzene	U		0.00129	0.00600	1.03	10/26/2018 03:23	WG1186559
Xylenes, Total	U		0.00573	0.00780	1.03	10/26/2018 03:23	WG1186559
(S) Toluene-d8	*91.9*			*75.0-131*		*10/26/2018 03:23*	WG1186559
(S) Dibromofluoromethane	*98.8*			*65.0-129*		*10/26/2018 03:23*	WG1186559
(S) 4-Bromofluorobenzene	*321*	J1		*67.0-138*		*10/26/2018 03:23*	WG1186559

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	132	J4	17.8	69.9	3	10/28/2018 12:01	WG1187254
(S) o-Terphenyl	*78.5*			*50.0-150*		*10/28/2018 12:01*	WG1187254

Sample Narrative:

L1036522-11 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Acenaphthene	0.00967		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Acenaphthylene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Benzo(a)anthracene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Benzo(a)pyrene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Benzo(b)fluoranthene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Benzo(g,h,i)perylene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Benzo(k)fluoranthene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Chrysene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Dibenz(a,h)anthracene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Fluoranthene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Fluorene	0.0184		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Indeno(1,2,3-cd)pyrene	U		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Naphthalene	0.00782	J	0.00233	0.0233	1	10/24/2018 21:12	WG1184273
Phenanthrene	0.0154		0.000699	0.00699	1	10/24/2018 21:12	WG1184273
Pyrene	0.000790	J	0.000699	0.00699	1	10/24/2018 21:12	WG1184273
1-Methylnaphthalene	0.0203	J	0.00233	0.0233	1	10/24/2018 21:12	WG1184273
2-Methylnaphthalene	U		0.00233	0.0233	1	10/24/2018 21:12	WG1184273
2-Chloronaphthalene	U		0.00233	0.0233	1	10/24/2018 21:12	WG1184273
(S) Nitrobenzene-d5	*101*			*14.0-149*		*10/24/2018 21:12*	WG1184273
(S) 2-Fluorobiphenyl	*82.8*			*34.0-125*		*10/24/2018 21:12*	WG1184273
(S) p-Terphenyl-d14	*96.5*			*23.0-120*		*10/24/2018 21:12*	WG1184273

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	U		0.0137	0.0250	1	10/26/2018 03:42	WG1186559
Acrylonitrile	U		0.00190	0.0125	1	10/26/2018 03:42	WG1186559
Benzene	U		0.000400	0.00100	1	10/26/2018 03:42	WG1186559
Bromobenzene	U		0.00105	0.0125	1	10/26/2018 03:42	WG1186559
Bromodichloromethane	U		0.000788	0.00250	1	10/26/2018 03:42	WG1186559
Bromoform	U		0.00598	0.0250	1	10/26/2018 03:42	WG1186559
Bromomethane	U		0.00370	0.0125	1	10/26/2018 03:42	WG1186559
n-Butylbenzene	U		0.00384	0.0125	1	10/26/2018 03:42	WG1186559
sec-Butylbenzene	U		0.00253	0.0125	1	10/26/2018 03:42	WG1186559
tert-Butylbenzene	U		0.00155	0.00500	1	10/26/2018 03:42	WG1186559
Carbon tetrachloride	U		0.00108	0.00500	1	10/26/2018 03:42	WG1186559
Chlorobenzene	U		0.000573	0.00250	1	10/26/2018 03:42	WG1186559
Chlorodibromomethane	U		0.000450	0.00250	1	10/26/2018 03:42	WG1186559
Chloroethane	U		0.00108	0.00500	1	10/26/2018 03:42	WG1186559
Chloroform	U		0.000415	0.00250	1	10/26/2018 03:42	WG1186559
Chloromethane	U		0.00139	0.0125	1	10/26/2018 03:42	WG1186559
2-Chlorotoluene	U		0.000920	0.00250	1	10/26/2018 03:42	WG1186559
4-Chlorotoluene	U		0.00113	0.00500	1	10/26/2018 03:42	WG1186559
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250	1	10/26/2018 03:42	WG1186559
1,2-Dibromoethane	U		0.000525	0.00250	1	10/26/2018 03:42	WG1186559
Dibromomethane	U		0.00100	0.00500	1	10/26/2018 03:42	WG1186559
1,2-Dichlorobenzene	U		0.00145	0.00500	1	10/26/2018 03:42	WG1186559
1,3-Dichlorobenzene	U		0.00170	0.00500	1	10/26/2018 03:42	WG1186559
1,4-Dichlorobenzene	U		0.00197	0.00500	1	10/26/2018 03:42	WG1186559
Dichlorodifluoromethane	U		0.000818	0.00250	1	10/26/2018 03:42	WG1186559
1,1-Dichloroethane	U		0.000575	0.00250	1	10/26/2018 03:42	WG1186559
1,2-Dichloroethane	U		0.000475	0.00250	1	10/26/2018 03:42	WG1186559
1,1-Dichloroethene	U		0.000500	0.00250	1	10/26/2018 03:42	WG1186559
cis-1,2-Dichloroethene	U		0.000690	0.00250	1	10/26/2018 03:42	WG1186559
trans-1,2-Dichloroethene	U		0.00143	0.00500	1	10/26/2018 03:42	WG1186559
1,2-Dichloropropane	U		0.00127	0.00500	1	10/26/2018 03:42	WG1186559
1,1-Dichloropropene	U		0.000700	0.00250	1	10/26/2018 03:42	WG1186559
1,3-Dichloropropane	U		0.00175	0.00500	1	10/26/2018 03:42	WG1186559
cis-1,3-Dichloropropene	U		0.000678	0.00250	1	10/26/2018 03:42	WG1186559
trans-1,3-Dichloropropene	U		0.00153	0.00500	1	10/26/2018 03:42	WG1186559
2,2-Dichloropropane	U		0.000793	0.00250	1	10/26/2018 03:42	WG1186559
Di-isopropyl ether	U		0.000350	0.00100	1	10/26/2018 03:42	WG1186559
Ethylbenzene	U		0.000530	0.00250	1	10/26/2018 03:42	WG1186559
Hexachloro-1,3-butadiene	U		0.0127	0.0250	1	10/26/2018 03:42	WG1186559
Isopropylbenzene	U		0.000863	0.00250	1	10/26/2018 03:42	WG1186559
p-Isopropyltoluene	U		0.00233	0.00500	1	10/26/2018 03:42	WG1186559
2-Butanone (MEK)	U		0.0125	0.0250	1	10/26/2018 03:42	WG1186559
Methylene Chloride	0.00825	B J	0.00664	0.0250	1	10/26/2018 03:42	WG1186559
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250	1	10/26/2018 03:42	WG1186559
Methyl tert-butyl ether	U		0.000295	0.00100	1	10/26/2018 03:42	WG1186559
Naphthalene	0.00407	J	0.00312	0.0125	1	10/26/2018 03:42	WG1186559
n-Propylbenzene	U		0.00118	0.00500	1	10/26/2018 03:42	WG1186559
Styrene	U		0.00273	0.0125	1	10/26/2018 03:42	WG1186559
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250	1	10/26/2018 03:42	WG1186559
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250	1	10/26/2018 03:42	WG1186559
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250	1	10/26/2018 03:42	WG1186559
Tetrachloroethene	U		0.000700	0.00250	1	10/26/2018 03:42	WG1186559
Toluene	0.00654		0.00125	0.00500	1	10/26/2018 03:42	WG1186559
1,2,3-Trichlorobenzene	U		0.000625	0.00250	1	10/26/2018 03:42	WG1186559
1,2,4-Trichlorobenzene	U		0.00482	0.0125	1	10/26/2018 03:42	WG1186559
1,1,1-Trichloroethane	U		0.000275	0.00250	1	10/26/2018 03:42	WG1186559

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	U		0.000883	0.00250	1	10/26/2018 03:42	WG1186559
Trichloroethene	U		0.000400	0.00100	1	10/26/2018 03:42	WG1186559
Trichlorofluoromethane	U		0.000500	0.00250	1	10/26/2018 03:42	WG1186559
1,2,3-Trichloropropane	U		0.00510	0.0125	1	10/26/2018 03:42	WG1186559
1,2,4-Trimethylbenzene	U		0.00116	0.00500	1	10/26/2018 03:42	WG1186559
1,2,3-Trimethylbenzene	U		0.00115	0.00500	1	10/26/2018 03:42	WG1186559
Vinyl chloride	U		0.000683	0.00250	1	10/26/2018 03:42	WG1186559
1,3,5-Trimethylbenzene	U		0.00108	0.00500	1	10/26/2018 03:42	WG1186559
Xylenes, Total	U		0.00478	0.00650	1	10/26/2018 03:42	WG1186559
(S) Toluene-d8	*105*			*75.0-131*		*10/26/2018 03:42*	WG1186559
(S) Dibromofluoromethane	*96.6*			*65.0-129*		*10/26/2018 03:42*	WG1186559
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*10/26/2018 03:42*	WG1186559

Method Blank (MB)

(MB) R3354132-1 10/25/18 09:12

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1036522-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1036522-01 10/25/18 09:12 • (DUP) R3354132-3 10/25/18 09:12

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	83.1	85.6	1	2.94		10

Laboratory Control Sample (LCS)

(LCS) R3354132-2 10/25/18 09:12

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

Method Blank (MB)

(MB) R3354124-1 10/25/18 15:11

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1036544-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1036544-02 10/25/18 15:11 • (DUP) R3354124-3 10/25/18 15:11

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	73.8	74.0	1	0.194		10

Laboratory Control Sample (LCS)

(LCS) R3354124-2 10/25/18 15:11

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

Method Blank (MB)

(MB) R3352835-1 10/22/18 13:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.00280	0.0200

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

(LCS) R3352835-2 10/22/18 13:53 • (LCSD) R3352835-3 10/22/18 13:56

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 %
Mercury	0.300	0.313	0.295	104	98.5	80.0-120			5.83	20

L1036674-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1036674-02 10/22/18 13:59 • (MS) R3352835-4 10/22/18 14:01 • (MSD) R3352835-5 10/22/18 14:04

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.356	U	0.366	0.362	103	102	1	75.0-125			1.05	20

Method Blank (MB)

(MB) R3353665-1 10/25/18 01:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.170	0.500
Cadmium	U		0.0700	0.500
Chromium	U		0.140	1.00
Lead	U		0.190	0.500
Selenium	U		0.620	2.00
Silver	U		0.120	1.00

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

(LCS) R3353665-2 10/25/18 01:44 • (LCSD) R3353665-3 10/25/18 01:46

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 %
Arsenic	100	92.7	96.4	92.7	96.4	80.0-120			3.87	20
Barium	100	97.2	102	97.2	102	80.0-120			4.40	20
Cadmium	100	92.5	96.3	92.5	96.3	80.0-120			4.02	20
Chromium	100	95.4	99.1	95.4	99.1	80.0-120			3.86	20
Lead	100	93.6	97.7	93.6	97.7	80.0-120			4.33	20
Selenium	100	92.1	97.2	92.1	97.2	80.0-120			5.38	20
Silver	20.0	17.4	18.1	87.0	90.4	80.0-120			3.87	20

L1036747-40 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1036747-40 10/25/18 01:49 • (MS) R3353665-6 10/25/18 02:01 • (MSD) R3353665-7 10/25/18 02:03

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 %
Arsenic	100	9.37	125	112	115	102	1	75.0-125			11.1	20
Barium	100	95.7	203	250	107	155	1	75.0-125		J3 J5	21.1	20
Cadmium	100	ND	92.7	99.2	92.5	99.0	1	75.0-125			6.78	20
Chromium	100	4.30	95.5	98.3	91.2	94.0	1	75.0-125			2.95	20
Lead	100	33.3	138	129	104	95.9	1	75.0-125			6.32	20
Selenium	100	ND	91.6	98.1	91.6	98.1	1	75.0-125			6.87	20
Silver	20.0	ND	17.1	18.4	85.3	92.0	1	75.0-125			7.54	20

Method Blank (MB)

(MB) R3354173-2 10/26/18 00:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0137	0.0250
Acrylonitrile	U		0.00190	0.0125
Benzene	U		0.000400	0.00100
Bromobenzene	U		0.00105	0.0125
Bromodichloromethane	U		0.000788	0.00250
Bromoform	U		0.00598	0.0250
Bromomethane	U		0.00370	0.0125
n-Butylbenzene	U		0.00384	0.0125
sec-Butylbenzene	U		0.00253	0.0125
tert-Butylbenzene	U		0.00155	0.00500
Carbon tetrachloride	U		0.00108	0.00500
Chlorobenzene	U		0.000573	0.00250
Chlorodibromomethane	U		0.000450	0.00250
Chloroethane	U		0.00108	0.00500
Chloroform	U		0.000415	0.00250
Chloromethane	U		0.00139	0.0125
2-Chlorotoluene	U		0.000920	0.00250
4-Chlorotoluene	U		0.00113	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250
1,2-Dibromoethane	U		0.000525	0.00250
Dibromomethane	U		0.00100	0.00500
1,2-Dichlorobenzene	U		0.00145	0.00500
1,3-Dichlorobenzene	U		0.00170	0.00500
1,4-Dichlorobenzene	U		0.00197	0.00500
Dichlorodifluoromethane	U		0.000818	0.00250
1,1-Dichloroethane	U		0.000575	0.00250
1,2-Dichloroethane	U		0.000475	0.00250
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
1,2-Dichloropropane	U		0.00127	0.00500
1,1-Dichloropropene	U		0.000700	0.00250
1,3-Dichloropropane	U		0.00175	0.00500
cis-1,3-Dichloropropene	U		0.000678	0.00250
trans-1,3-Dichloropropene	U		0.00153	0.00500
2,2-Dichloropropane	U		0.000793	0.00250
Di-isopropyl ether	U		0.000350	0.00100
Ethylbenzene	U		0.000530	0.00250
Hexachloro-1,3-butadiene	U		0.0127	0.0250
Isopropylbenzene	U		0.000863	0.00250

Method Blank (MB)

(MB) R3354173-2 10/26/18 00:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00233	0.00500
2-Butanone (MEK)	U		0.0125	0.0250
Methylene Chloride	0.00736	J	0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250
Methyl tert-butyl ether	U		0.000295	0.00100
Naphthalene	U		0.00312	0.0125
n-Propylbenzene	U		0.00118	0.00500
Styrene	U		0.00273	0.0125
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250
Tetrachloroethene	U		0.000700	0.00250
Toluene	U		0.00125	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250
1,2,3-Trichlorobenzene	U		0.000625	0.00250
1,2,4-Trichlorobenzene	U		0.00482	0.0125
1,1,1-Trichloroethane	U		0.000275	0.00250
1,1,2-Trichloroethane	U		0.000883	0.00250
Trichloroethene	U		0.000400	0.00100
Trichlorofluoromethane	U		0.000500	0.00250
1,2,3-Trichloropropane	U		0.00510	0.0125
1,2,3-Trimethylbenzene	U		0.00115	0.00500
1,2,4-Trimethylbenzene	U		0.00116	0.00500
1,3,5-Trimethylbenzene	U		0.00108	0.00500
Vinyl chloride	U		0.000683	0.00250
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*108*			*75.0-131*
(S) Dibromofluoromethane	*94.3*			*65.0-129*
(S) 4-Bromofluorobenzene	*102*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3354173-1 10/25/18 22:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.689	110	10.0-160	
Acrylonitrile	0.625	0.549	87.9	45.0-153	
Benzene	0.125	0.126	101	70.0-123	
Bromobenzene	0.125	0.118	94.4	73.0-121	
Bromodichloromethane	0.125	0.100	80.2	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3354173-1 10/25/18 22:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.116	93.2	64.0-132	
Bromomethane	0.125	0.128	102	56.0-147	
n-Butylbenzene	0.125	0.119	95.1	68.0-135	
sec-Butylbenzene	0.125	0.125	99.8	74.0-130	
tert-Butylbenzene	0.125	0.127	102	75.0-127	
Carbon tetrachloride	0.125	0.136	109	66.0-128	
Chlorobenzene	0.125	0.132	105	76.0-128	
Chlorodibromomethane	0.125	0.128	103	74.0-127	
Chloroethane	0.125	0.130	104	61.0-134	
Chloroform	0.125	0.130	104	72.0-123	
Chloromethane	0.125	0.132	105	51.0-138	
2-Chlorotoluene	0.125	0.140	112	75.0-124	
4-Chlorotoluene	0.125	0.128	102	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.106	85.1	59.0-130	
1,2-Dibromoethane	0.125	0.127	101	74.0-128	
Dibromomethane	0.125	0.133	107	75.0-122	
1,2-Dichlorobenzene	0.125	0.127	102	76.0-124	
1,3-Dichlorobenzene	0.125	0.123	98.5	76.0-125	
1,4-Dichlorobenzene	0.125	0.117	93.2	77.0-121	
Dichlorodifluoromethane	0.125	0.126	100	43.0-156	
1,1-Dichloroethane	0.125	0.127	101	70.0-127	
1,2-Dichloroethane	0.125	0.124	99.2	65.0-131	
1,1-Dichloroethene	0.125	0.133	106	65.0-131	
cis-1,2-Dichloroethene	0.125	0.131	105	73.0-125	
trans-1,2-Dichloroethene	0.125	0.122	97.9	71.0-125	
1,2-Dichloropropane	0.125	0.128	103	74.0-125	
1,1-Dichloropropene	0.125	0.130	104	73.0-125	
1,3-Dichloropropane	0.125	0.121	97.0	80.0-125	
cis-1,3-Dichloropropene	0.125	0.119	94.9	76.0-127	
trans-1,3-Dichloropropene	0.125	0.126	101	73.0-127	
2,2-Dichloropropane	0.125	0.169	135	59.0-135	
Di-isopropyl ether	0.125	0.117	93.8	60.0-136	
Ethylbenzene	0.125	0.136	109	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.125	100	57.0-150	
Isopropylbenzene	0.125	0.129	103	72.0-127	
p-Isopropyltoluene	0.125	0.131	105	72.0-133	
2-Butanone (MEK)	0.625	0.618	98.8	30.0-160	
Methylene Chloride	0.125	0.130	104	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.699	112	56.0-143	
Methyl tert-butyl ether	0.125	0.131	105	66.0-132	

Laboratory Control Sample (LCS)

(LCS) R3354173-1 10/25/18 22:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.113	90.7	59.0-130	
n-Propylbenzene	0.125	0.126	101	74.0-126	
Styrene	0.125	0.123	98.6	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.127	102	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.119	94.9	68.0-128	
Tetrachloroethene	0.125	0.150	120	70.0-136	
Toluene	0.125	0.128	102	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.118	94.0	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.0973	77.8	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.112	89.5	62.0-137	
1,1,1-Trichloroethane	0.125	0.147	117	69.0-126	
1,1,2-Trichloroethane	0.125	0.116	93.2	78.0-123	
Trichloroethene	0.125	0.136	109	76.0-126	
Trichlorofluoromethane	0.125	0.138	111	61.0-142	
1,2,3-Trichloropropane	0.125	0.129	103	67.0-129	
1,2,3-Trimethylbenzene	0.125	0.124	98.8	74.0-124	
1,2,4-Trimethylbenzene	0.125	0.121	97.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.130	104	73.0-127	
Vinyl chloride	0.125	0.128	103	63.0-134	
Xylenes, Total	0.375	0.406	108	72.0-127	
(S) Toluene-d8			*102*	*75.0-131*	
(S) Dibromofluoromethane			*100*	*65.0-129*	
(S) 4-Bromofluorobenzene			*103*	*67.0-138*	

Method Blank (MB)

(MB) R3354612-1 10/28/18 10:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
AK102 DRO C10-C25	U		5.10	20.0
(S) o-Terphenyl	*74.3*			*50.0-150*

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

(LCS) R3354612-2 10/28/18 10:45 • (LCSD) R3354612-3 10/28/18 10:58

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 %
AK102 DRO C10-C25	100	77.2	68.4	77.2	68.4	75.0-125		J4	12.1	20
(S) o-Terphenyl				*94.0*	*75.9*	*50.0-150*				

L1037324-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037324-01 10/28/18 13:17 • (MS) R3354612-4 10/28/18 13:30 • (MSD) R3354612-5 10/28/18 13:43

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 %
AK102 DRO C10-C25	100	U	69.0	64.5	69.0	64.5	1	75.0-125	J6	J6	6.74	20
(S) o-Terphenyl					*65.3*	*64.7*		*50.0-150*				

Sample Narrative:

OS: Duplicate analysis was performed.

Method Blank (MB)

(MB) R3353725-1 10/24/18 16:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	*74.3*			*10.0-135*
(S) Tetrachloro-m-xylene	*77.2*			*10.0-139*

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

(LCS) R3353725-2 10/24/18 16:30 • (LCSD) R3353725-3 10/24/18 16:44

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 %
PCB 1260	0.167	0.0853	0.0753	51.1	45.1	37.0-145	P	P	12.5	37
PCB 1016	0.167	0.105	0.0949	62.9	56.8	36.0-141			10.1	35
(S) Decachlorobiphenyl				*57.5*	*52.0*	*10.0-135*				
(S) Tetrachloro-m-xylene				*63.8*	*60.1*	*10.0-139*				

L1036359-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1036359-05 10/24/18 17:52 • (MS) R3353725-4 10/24/18 18:06 • (MSD) R3353725-5 10/24/18 18:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.195	0.770	0.970	0.713	102	0.000	1	10.0-160	P	J6 P	30.5	38
PCB 1016	0.195	U	1.05	0.842	540	432	1	10.0-160	J5	J5 P	22.3	37
(S) Decachlorobiphenyl					*61.0*	*53.3*		*10.0-135*				
(S) Tetrachloro-m-xylene					*77.5*	*101*		*10.0-139*				

Method Blank (MB)

(MB) R3353715-3 10/24/18 16:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	*106*			*14.0-149*
(S) 2-Fluorobiphenyl	*109*			*34.0-125*
(S) p-Terphenyl-d14	*113*			*23.0-120*

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

(LCS) R3353715-1 10/24/18 15:36 • (LCSD) R3353715-2 10/24/18 15:57

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 %
Anthracene	0.0800	0.0834	0.0811	104	101	50.0-126			2.80	20
Acenaphthene	0.0800	0.0882	0.0864	110	108	50.0-120			2.06	20
Acenaphthylene	0.0800	0.0806	0.0790	101	98.8	50.0-120			2.01	20
Benzo(a)anthracene	0.0800	0.0848	0.0812	106	102	45.0-120			4.34	20
Benzo(a)pyrene	0.0800	0.0739	0.0717	92.4	89.6	42.0-120			3.02	20
Benzo(b)fluoranthene	0.0800	0.0900	0.0834	113	104	42.0-121			7.61	20
Benzo(g,h,i)perylene	0.0800	0.0848	0.0834	106	104	45.0-125			1.66	20
Benzo(k)fluoranthene	0.0800	0.0891	0.0910	111	114	49.0-125			2.11	20
Chrysene	0.0800	0.0913	0.0891	114	111	49.0-122			2.44	20
Dibenz(a,h)anthracene	0.0800	0.0952	0.0935	119	117	47.0-125			1.80	20
Fluoranthene	0.0800	0.0921	0.0903	115	113	49.0-129			1.97	20

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

(LCS) R3353715-1 10/24/18 15:36 • (LCSD) R3353715-2 10/24/18 15:57

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 %
Fluorene	0.0800	0.0840	0.0819	105	102	49.0-120			2.53	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0893	0.0872	112	109	46.0-125			2.38	20
Naphthalene	0.0800	0.0803	0.0798	100	99.8	50.0-120			0.625	20
Phenanthrene	0.0800	0.0912	0.0892	114	112	47.0-120			2.22	20
Pyrene	0.0800	0.0870	0.0845	109	106	43.0-123			2.92	20
1-Methylnaphthalene	0.0800	0.0881	0.0880	110	110	51.0-121			0.114	20
2-Methylnaphthalene	0.0800	0.0801	0.0793	100	99.1	50.0-120			1.00	20
2-Chloronaphthalene	0.0800	0.0887	0.0888	111	111	50.0-120			0.113	20
(S) Nitrobenzene-d5				*101*	*106*	*14.0-149*				
(S) 2-Fluorobiphenyl				*99.8*	*107*	*34.0-125*				
(S) p-Terphenyl-d14				*101*	*109*	*23.0-120*				

L1036610-25 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1036610-25 10/24/18 23:17 • (MS) R3353715-4 10/24/18 23:38 • (MSD) R3353715-5 10/24/18 23:59

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0949	ND	0.0720	0.0772	75.9	81.4	1	10.0-145			7.00	30
Acenaphthene	0.0949	ND	0.0673	0.0683	70.9	72.0	1	14.0-127			1.57	27
Acenaphthylene	0.0949	ND	0.0664	0.0671	70.0	70.8	1	21.0-124			1.07	25
Benzo(a)anthracene	0.0949	ND	0.0790	0.0823	83.3	86.8	1	10.0-139			4.12	30
Benzo(a)pyrene	0.0949	ND	0.0782	0.0845	82.4	89.0	1	10.0-141			7.73	31
Benzo(b)fluoranthene	0.0949	ND	0.0751	0.0840	79.1	88.5	1	10.0-140			11.2	36
Benzo(g,h,i)perylene	0.0949	ND	0.0346	0.0368	36.5	38.8	1	10.0-140			5.98	33
Benzo(k)fluoranthene	0.0949	ND	0.0853	0.0937	89.9	98.8	1	10.0-137			9.41	31
Chrysene	0.0949	ND	0.0814	0.0858	85.8	90.4	1	10.0-145			5.25	30
Dibenz(a,h)anthracene	0.0949	ND	0.0457	0.0442	48.1	46.6	1	10.0-132			3.17	31
Fluoranthene	0.0949	ND	0.0728	0.0786	76.8	82.9	1	10.0-153			7.67	33
Fluorene	0.0949	ND	0.0616	0.0639	64.9	67.4	1	11.0-130			3.78	29
Indeno(1,2,3-cd)pyrene	0.0949	ND	0.0390	0.0406	41.1	42.8	1	10.0-137			3.87	32
Naphthalene	0.0949	ND	0.0738	0.0709	71.0	68.0	1	10.0-135			3.93	27
Phenanthrene	0.0949	ND	0.0657	0.0711	69.3	74.9	1	10.0-144			7.81	31
Pyrene	0.0949	ND	0.0695	0.0784	73.3	82.6	1	10.0-148			12.0	35
1-Methylnaphthalene	0.0949	ND	0.0741	0.0757	78.1	79.8	1	10.0-142			2.06	28
2-Methylnaphthalene	0.0949	ND	0.0701	0.0702	70.1	70.2	1	10.0-137			0.169	28
2-Chloronaphthalene	0.0949	ND	0.0758	0.0752	79.9	79.3	1	29.0-120			0.786	24
(S) Nitrobenzene-d5					*93.9*	*94.5*		*14.0-149*				
(S) 2-Fluorobiphenyl					*64.7*	*58.0*		*34.0-125*				
(S) p-Terphenyl-d14					*79.9*	*82.4*		*23.0-120*				

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

(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.
ND	Not detected at the Reporting Limit (or MDL where applicable).
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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P	RPD between the primary and confirmatory analysis exceeded 40%.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

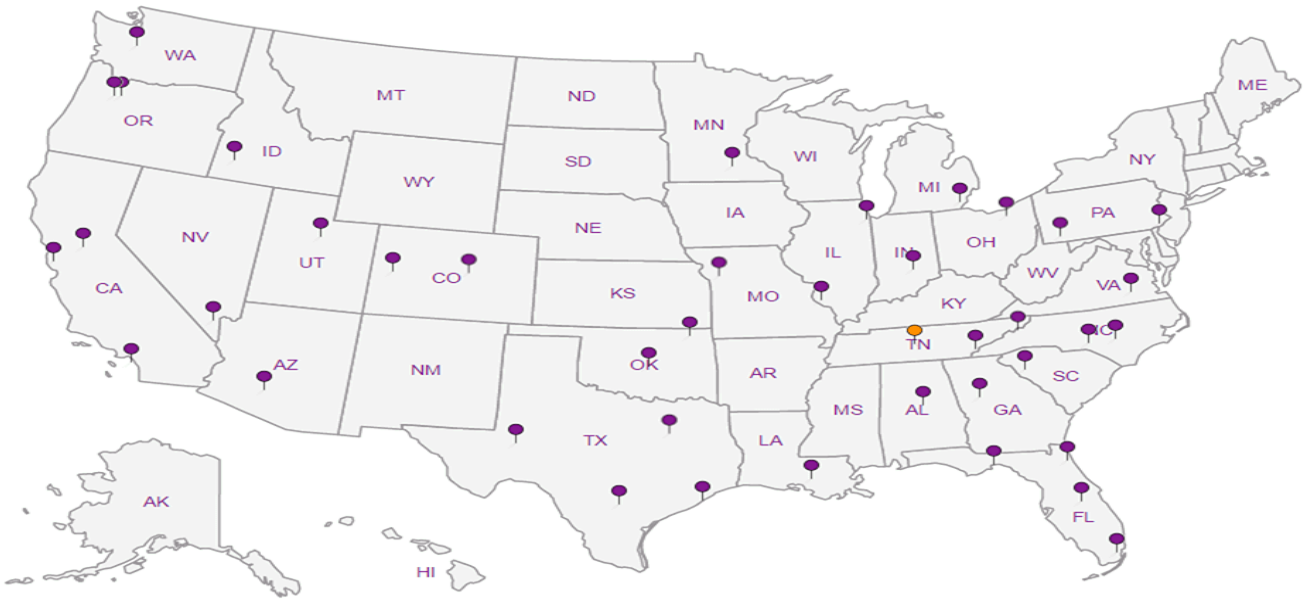
Third Party Federal Accreditations

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

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

Our Locations

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



Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Pres Chk

Report to: Cyrus Gorman

Email To: cyrus.gorman@stantec.com; collin.macheel@stantec.com

Project Description: 726 E. 12th Ave

City/State Collected: Anchorage, AK

Phone: 206-494-5029
Fax: 425-869-1190

Client Project # 185750590/SAF

Lab Project # STANTECBWA-AK

Collected by (print): Drew Beard

Site/Facility ID # 726TH E 12 AVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N___ Y___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

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

L# L1636522

E063

Acctnum: STANTECBWA
Template: T141751
Prelogin: P676584
TSR: 110 - Brian Ford
PB: TO 10-11-18
Shipped Via: FedEx 2nd Day

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK102 4ozClr-NoPres	Ignitibility 4ozClr-NoPres	MRCRA8 Metals 4ozClr-NoPres	PAHs SV8270PAHSIMD 4ozClr-NoPres	PCBs SV8082 4ozClr-NoPres	TCLP RCRA8 Metals 8ozClr-NoPres	pH 2ozClr-NoPres / VOC's 5026 Soil MeoPres	water AK102 100ml Amb HCl	water PAH 8270SIMD 100ml Amb-NoPres	water VOCs V8260C 40mlAmb-HCl	Remarks	Sample # (lab only)
CP-1-0.5	GRAB	SS	0.5	10/16/18	1040	3			X	X	X							-01
CP-2-0.5		SS	0.5		1100	3			X	X	X							02
CP-3-0.5		SS	0.5		1121	3			X	X	X							03
CP-4-0.5		SS	0.5		1130	4				X	X		X					04
CP-4-3		SS	3		1135	4				X	X		X					05
CP-5-0.5		SS	0.5		1208	4	X			X	X		X					06
CP-5-10		SS	10		1226	4	X			X	X		X					07
CP-5-0.5 Dup		SS	0.5		1210	4	X			X	X		X					08
CP-6-0.5		SS	0.5		1453	4	X			X	X		X					09
CP-6-10	↓	SS	10	↓	1510	4	X			X	X		X					10

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

Remarks:

RAD SCREEN: <0.5 mR/hr pH _____ Temp _____ Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 4492 6231 4489

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / NO HCL / MeoH TBR
	10/17/18	1530		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.4 / 1.3 -0.1°C Bottles Received: 46
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) MCI	Date: 10/18/18 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 2 of 2

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

Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Pres Chk

Report to: **Cyrus Gorman**

Email To: cyrus.gorman@stantec.com; collin.macheel@stantec.com

Project Description: 726 E 12th Ave

City/State Collected: Anchorage, AK

Phone: 206-494-5029
Fax: 425-869-1190

Client Project # 185750590/5.A.4

Lab Project # STANTECBWA-AK

Collected by (print): Dan Beard

Site/Facility ID # 726TH E 12 AVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

L# L1036522

Table #

Acctnum: STANTECBWA

Template: T141751

Prelogin: P676584

TSR: 110 - Brian Ford

PB: TB 10-11-18

Shipped Via: FedEX 2nd Day

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK102 4ozClr-NoPres	Ignitibility 4ozClr-NoPres	MRCRA8 Metals 4ozClr-NoPres	PAHs SV8270PAHSIMD 4ozClr-NoPres	PCBs SV8082 4ozClr-NoPres	TCLP RCRA8 Metals 8ozClr-NoPres	pH 2ozClr-NoPres / Vac's 5026-Sil MeOH pres	water AK102 100ml Amb HCl	water PAH 8270SIMD 100ml Amb-NoPres	water VOCs V8260C 40mlAmb-HCl	Remarks	Sample # (lab only)
GP-5-25	GRAB	SS	25'	10/16/18	1745	4	X			X	X(2)		X					-11
TRIP BLANK	—	SS	—	—	—	1							X					12
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																

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

Remarks:

RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
	10/17/18	1530		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.4 1.3 -0.1 °C Bottles Received: 46
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) 8CI	Date: 10/19/18 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Brian Ford

From: Von Raesfeld, Sarah <sarah.vonraesfeld@stantec.com>
Sent: Monday, October 22, 2018 2:04 PM
To: Brian Ford
Cc: Gorman, Cyrus
Subject: L1036522 Login revisions
Attachments: ln01L1036522.pdf

Hi Brian,

Please remove pH for samples L1036522-04 through -11.

Thanks,
Sarah

Stantec
Sarah Von Raesfeld
Project Chemist
1340 Treat Blvd. Suite 300
Walnut Creek, CA 94597
Direct: (925) 627-4654
Cell: (925) 451-9870
sarah.vonraesfeld@stantec.com

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 31, 2018

Stantec- Bellevue, WA

Sample Delivery Group:	L1037317
Samples Received:	10/23/2018
Project Number:	185750590
Description:	
Site:	726TH E 12 AVE
Report To:	Cyrus Gorman 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004

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.

TABLE OF CONTENTS

GP-9-0.5 L1037317-01 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 09:30 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.07	10/19/18 09:30	10/26/18 14:57	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.06	10/19/18 09:30	10/28/18 15:48	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	50	10/27/18 13:16	10/28/18 15:23	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/30/18 01:08	LEA

GP-9-10 L1037317-02 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 09:40 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.04	10/19/18 09:40	10/26/18 15:15	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.02	10/19/18 09:40	10/28/18 16:08	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 12:14	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/28/18 08:40	LEA

GP-8-0.5 L1037317-03 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 11:40 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.23	10/19/18 11:40	10/26/18 15:34	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.23	10/19/18 11:40	10/28/18 16:28	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 12:27	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/28/18 09:00	LEA

GP-8-10 L1037317-04 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 11:50 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.06	10/19/18 11:50	10/26/18 15:52	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.06	10/19/18 11:50	10/28/18 16:47	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 12:39	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/28/18 09:21	LEA

GP-7-0.5 L1037317-05 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 14:00 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.01	10/19/18 14:00	10/26/18 16:11	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.01	10/19/18 14:00	10/28/18 17:07	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 12:52	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/28/18 09:42	LEA

GP-7-10 L1037317-06 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 14:20 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187333	1	10/27/18 13:02	10/27/18 13:14	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1.09	10/19/18 14:20	10/26/18 16:29	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1.09	10/19/18 14:20	10/28/18 17:28	JAH
Semi-Volatile Organic Compounds (GC) by Method AK102/103	WG1187254	1	10/27/18 13:16	10/28/18 13:05	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1187246	1	10/27/18 10:01	10/28/18 10:03	LEA

IDW L1037317-07 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 14:30 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187334	1	10/29/18 10:13	10/29/18 10:18	JD
Wet Chemistry by Method 9045D	WG1186183	1	10/25/18 08:25	10/25/18 12:06	KBW
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1186140	1	10/25/18 09:44	10/26/18 23:38	RP

TRIP BLANK L1037317-08 Solid

Collected by: Drew Beard | Collected date/time: 10/19/18 08:00 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1186927	1	10/19/18 08:00	10/26/18 12:28	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187558	1	10/19/18 08:00	10/28/18 15:27	JAH

IDW L1037317-09 Waste

Collected by: Drew Beard | Collected date/time: 10/19/18 08:00 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG1186274	1	10/25/18 10:21	10/25/18 10:21	CGD
Wet Chemistry by Method D93/1010A	WG1186656	1	10/26/18 17:36	10/26/18 17:36	TCC
Mercury by Method 7470A	WG1186793	1	10/26/18 08:44	10/29/18 16:18	ABL
Metals (ICP) by Method 6010C	WG1186873	1	10/26/18 13:08	10/27/18 10:01	TRB

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

Jared Starkey
Project Manager

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

Batch	Method	Lab Sample ID
WG1186183	9045D	L1037317-07

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

The associated batch QC was above the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1186927	(LCS) R3354494-1, L1037317-01, 02, 03, 04, 05, 06, 08	1,1-Dichloropropene

The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Batch	Lab Sample ID	Analytes
WG1186927	(MS) R3354494-3, (MSD) R3354494-4, L1037317-01	1,2,3-Trimethylbenzene, 1,3,5-Trimethylbenzene, Ethylbenzene, Naphthalene, n-Propylbenzene, Toluene and Xylenes, Total

The sample concentration is too high to evaluate accurate spike recoveries.

Batch	Lab Sample ID	Analytes
WG1186927	(MS) R3354494-3, (MSD) R3354494-4	1,2,4-Trimethylbenzene

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG1186927	(MSD) R3354494-4, L1037317-01	Trichlorofluoromethane

The associated batch QC was outside the established quality control range for precision.

Batch	Lab Sample ID	Analytes
WG1186927	(MSD) R3354494-4, L1037317-01	36 analytes

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Surrogate recovery cannot be used for control limit evaluation due to dilution.

Batch	Analyte	Lab Sample ID
WG1187254	o-Terphenyl	L1037317-01

Semi-Volatile Organic Compounds (GC) by Method AK102/103

The associated batch QC was below the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1187254	(LCSD) R3354612-3, L1037317-01, 02, 03, 04, 05, 06	AK102 DRO C10-C25

The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Batch	Lab Sample ID	Analytes
WG1187254	(MS) R3354612-4, (MSD) R3354612-5	AK102 DRO C10-C25

Polychlorinated Biphenyls (GC) by Method 8082 A

The associated batch QC was below the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1186140	(LCS) R3354457-2, (LCSD) R3354457-3, L1037317-07	PCB 1016 and PCB 1260

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

The associated batch QC was above the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1187246	(LCSD) R3354609-1, L1037317-01, 02, 03, 04, 05, 06	1-Methylnaphthalene

The associated batch QC was outside the established quality control range for precision.

Batch	Lab Sample ID	Analytes
WG1187246	(LCSD) R3354609-1, L1037317-01, 02, 03, 04, 05, 06	19 analytes

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.6		1	10/27/2018 13:14	WG1187333

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		0.0162	0.0296	1.06	10/28/2018 15:48	WG1187558
Acrylonitrile	U		0.00227	0.0149	1.07	10/26/2018 14:57	WG1186927
Benzene	U		0.000473	0.00118	1.06	10/28/2018 15:48	WG1187558
Bromobenzene	U		0.00125	0.0149	1.07	10/26/2018 14:57	WG1186927
Bromodichloromethane	U		0.000941	0.00299	1.07	10/26/2018 14:57	WG1186927
Bromoform	U		0.00714	0.0299	1.07	10/26/2018 14:57	WG1186927
Bromomethane	U	J3	0.00442	0.0149	1.07	10/26/2018 14:57	WG1186927
n-Butylbenzene	0.0141	J J3	0.00459	0.0149	1.07	10/26/2018 14:57	WG1186927
sec-Butylbenzene	U	J3	0.00302	0.0149	1.07	10/26/2018 14:57	WG1186927
tert-Butylbenzene	U	J3	0.00185	0.00597	1.07	10/26/2018 14:57	WG1186927
Carbon tetrachloride	U	J3	0.00129	0.00597	1.07	10/26/2018 14:57	WG1186927
Chlorobenzene	U	J3	0.000684	0.00299	1.07	10/26/2018 14:57	WG1186927
Chlorodibromomethane	U		0.000538	0.00299	1.07	10/26/2018 14:57	WG1186927
Chloroethane	U	J3	0.00129	0.00597	1.07	10/26/2018 14:57	WG1186927
Chloroform	U	J3	0.000496	0.00299	1.07	10/26/2018 14:57	WG1186927
Chloromethane	U	J3	0.00166	0.0149	1.07	10/26/2018 14:57	WG1186927
2-Chlorotoluene	U	J3	0.00110	0.00299	1.07	10/26/2018 14:57	WG1186927
4-Chlorotoluene	U	J3	0.00135	0.00597	1.07	10/26/2018 14:57	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00609	0.0299	1.07	10/26/2018 14:57	WG1186927
1,2-Dibromoethane	U		0.000627	0.00299	1.07	10/26/2018 14:57	WG1186927
Dibromomethane	U		0.00119	0.00597	1.07	10/26/2018 14:57	WG1186927
1,2-Dichlorobenzene	U		0.00173	0.00597	1.07	10/26/2018 14:57	WG1186927
1,3-Dichlorobenzene	U		0.00203	0.00597	1.07	10/26/2018 14:57	WG1186927
1,4-Dichlorobenzene	U		0.00236	0.00597	1.07	10/26/2018 14:57	WG1186927
Dichlorodifluoromethane	U	J3	0.000977	0.00299	1.07	10/26/2018 14:57	WG1186927
1,1-Dichloroethane	U	J3	0.000686	0.00299	1.07	10/26/2018 14:57	WG1186927
1,2-Dichloroethane	U		0.000567	0.00299	1.07	10/26/2018 14:57	WG1186927
1,1-Dichloroethene	U	J3	0.000597	0.00299	1.07	10/26/2018 14:57	WG1186927
cis-1,2-Dichloroethene	U	J3	0.000824	0.00299	1.07	10/26/2018 14:57	WG1186927
trans-1,2-Dichloroethene	U	J3	0.00171	0.00597	1.07	10/26/2018 14:57	WG1186927
1,2-Dichloropropane	U	J3	0.00152	0.00597	1.07	10/26/2018 14:57	WG1186927
1,1-Dichloropropene	U	J3 J4	0.000836	0.00299	1.07	10/26/2018 14:57	WG1186927
1,3-Dichloropropane	U		0.00209	0.00597	1.07	10/26/2018 14:57	WG1186927
cis-1,3-Dichloropropene	U		0.000809	0.00299	1.07	10/26/2018 14:57	WG1186927
trans-1,3-Dichloropropene	U		0.00183	0.00597	1.07	10/26/2018 14:57	WG1186927
2,2-Dichloropropane	U	J3	0.000946	0.00299	1.07	10/26/2018 14:57	WG1186927
Di-isopropyl ether	U		0.000417	0.00119	1.07	10/26/2018 14:57	WG1186927
Ethylbenzene	0.00149	J	0.000627	0.00296	1.06	10/28/2018 15:48	WG1187558
Hexachloro-1,3-butadiene	U	J3	0.0152	0.0299	1.07	10/26/2018 14:57	WG1186927
Isopropylbenzene	U		0.00102	0.00296	1.06	10/28/2018 15:48	WG1187558
p-Isopropyltoluene	U	J3	0.00278	0.00597	1.07	10/26/2018 14:57	WG1186927
2-Butanone (MEK)	U	J3	0.0150	0.0299	1.07	10/26/2018 14:57	WG1186927
Methylene Chloride	U		0.00792	0.0299	1.07	10/26/2018 14:57	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0119	0.0299	1.07	10/26/2018 14:57	WG1186927
Methyl tert-butyl ether	U		0.000353	0.00119	1.07	10/26/2018 14:57	WG1186927
Naphthalene	U		0.00369	0.0148	1.06	10/28/2018 15:48	WG1187558
n-Propylbenzene	U		0.00140	0.00592	1.06	10/28/2018 15:48	WG1187558
Styrene	U		0.00326	0.0149	1.07	10/26/2018 14:57	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000597	0.00299	1.07	10/26/2018 14:57	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000465	0.00299	1.07	10/26/2018 14:57	WG1186927

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	J3	0.000806	0.00299	1.07	10/26/2018 14:57	WG1186927
Tetrachloroethene	U	J3	0.000836	0.00299	1.07	10/26/2018 14:57	WG1186927
Toluene	0.127	J3 J6	0.00150	0.00597	1.07	10/26/2018 14:57	WG1186927
1,2,3-Trichlorobenzene	U		0.000747	0.00299	1.07	10/26/2018 14:57	WG1186927
1,2,4-Trichlorobenzene	U		0.00576	0.0149	1.07	10/26/2018 14:57	WG1186927
1,1,1-Trichloroethane	U	J3	0.000328	0.00299	1.07	10/26/2018 14:57	WG1186927
1,1,2-Trichloroethane	U		0.00105	0.00299	1.07	10/26/2018 14:57	WG1186927
Trichloroethene	U	J3	0.000478	0.00119	1.07	10/26/2018 14:57	WG1186927
Trichlorofluoromethane	U	J3 J5	0.000597	0.00299	1.07	10/26/2018 14:57	WG1186927
1,2,3-Trichloropropane	U		0.00609	0.0149	1.07	10/26/2018 14:57	WG1186927
1,2,4-Trimethylbenzene	0.00300	J	0.00137	0.00592	1.06	10/28/2018 15:48	WG1187558
1,2,3-Trimethylbenzene	0.00202	J	0.00136	0.00592	1.06	10/28/2018 15:48	WG1187558
Vinyl chloride	U	J3	0.000816	0.00299	1.07	10/26/2018 14:57	WG1186927
1,3,5-Trimethylbenzene	U		0.00127	0.00592	1.06	10/28/2018 15:48	WG1187558
Xylenes, Total	0.00816		0.00566	0.00769	1.06	10/28/2018 15:48	WG1187558
(S) Toluene-d8	*105*			*75.0-131*		*10/26/2018 14:57*	WG1186927
(S) Toluene-d8	*104*			*75.0-131*		*10/28/2018 15:48*	WG1187558
(S) Dibromofluoromethane	*102*			*65.0-129*		*10/26/2018 14:57*	WG1186927
(S) Dibromofluoromethane	*85.7*			*65.0-129*		*10/28/2018 15:48*	WG1187558
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/26/2018 14:57*	WG1186927
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*10/28/2018 15:48*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	285	1120	50	10/28/2018 15:23	WG1187254
(S) o-Terphenyl	*82.0*	J7		*50.0-150*		*10/28/2018 15:23*	WG1187254

Sample Narrative:

L1037317-01 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Acenaphthene	0.00271	J J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Acenaphthylene	U	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Benzo(a)anthracene	0.0362	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Benzo(a)pyrene	0.0415	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Benzo(b)fluoranthene	U	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Benzo(g,h,i)perylene	0.0712	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Benzo(k)fluoranthene	U	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Chrysene	0.0456	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Dibenz(a,h)anthracene	0.00511	J J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Fluoranthene	0.0982	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Fluorene	0.00538	J J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Indeno(1,2,3-cd)pyrene	0.0393	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Naphthalene	0.0133	J J3	0.00223	0.0223	1	10/30/2018 01:08	WG1187246
Phenanthrene	0.0446	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
Pyrene	0.0739	J3	0.000670	0.00670	1	10/30/2018 01:08	WG1187246
1-Methylnaphthalene	0.00451	J J3 J4	0.00223	0.0223	1	10/30/2018 01:08	WG1187246
2-Methylnaphthalene	0.00771	J J3	0.00223	0.0223	1	10/30/2018 01:08	WG1187246
2-Chloronaphthalene	U	J3	0.00223	0.0223	1	10/30/2018 01:08	WG1187246
(S) Nitrobenzene-d5	*84.1*			*14.0-149*		*10/30/2018 01:08*	WG1187246
(S) 2-Fluorobiphenyl	*111*			*34.0-125*		*10/30/2018 01:08*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*107*			*23.0-120*		*10/30/2018 01:08*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.9		1	10/27/2018 13:14	WG1187333

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		0.0145	0.0263	1.02	10/28/2018 16:08	WG1187558
Acrylonitrile	U		0.00204	0.0134	1.04	10/26/2018 15:15	WG1186927
Benzene	U		0.000429	0.00107	1.04	10/26/2018 15:15	WG1186927
Bromobenzene	U		0.00113	0.0134	1.04	10/26/2018 15:15	WG1186927
Bromodichloromethane	U		0.000846	0.00268	1.04	10/26/2018 15:15	WG1186927
Bromoform	U		0.00642	0.0268	1.04	10/26/2018 15:15	WG1186927
Bromomethane	U		0.00397	0.0134	1.04	10/26/2018 15:15	WG1186927
n-Butylbenzene	U		0.00412	0.0134	1.04	10/26/2018 15:15	WG1186927
sec-Butylbenzene	U		0.00271	0.0134	1.04	10/26/2018 15:15	WG1186927
tert-Butylbenzene	U		0.00166	0.00537	1.04	10/26/2018 15:15	WG1186927
Carbon tetrachloride	U		0.00116	0.00537	1.04	10/26/2018 15:15	WG1186927
Chlorobenzene	U		0.000615	0.00268	1.04	10/26/2018 15:15	WG1186927
Chlorodibromomethane	U		0.000483	0.00268	1.04	10/26/2018 15:15	WG1186927
Chloroethane	U		0.00116	0.00537	1.04	10/26/2018 15:15	WG1186927
Chloroform	0.00108	J	0.000446	0.00268	1.04	10/26/2018 15:15	WG1186927
Chloromethane	U		0.00149	0.0134	1.04	10/26/2018 15:15	WG1186927
2-Chlorotoluene	U		0.000988	0.00268	1.04	10/26/2018 15:15	WG1186927
4-Chlorotoluene	U		0.00122	0.00537	1.04	10/26/2018 15:15	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00547	0.0268	1.04	10/26/2018 15:15	WG1186927
1,2-Dibromoethane	U		0.000564	0.00268	1.04	10/26/2018 15:15	WG1186927
Dibromomethane	U		0.00107	0.00537	1.04	10/26/2018 15:15	WG1186927
1,2-Dichlorobenzene	U		0.00156	0.00537	1.04	10/26/2018 15:15	WG1186927
1,3-Dichlorobenzene	U		0.00183	0.00537	1.04	10/26/2018 15:15	WG1186927
1,4-Dichlorobenzene	U		0.00212	0.00537	1.04	10/26/2018 15:15	WG1186927
Dichlorodifluoromethane	U		0.000878	0.00268	1.04	10/26/2018 15:15	WG1186927
1,1-Dichloroethane	U		0.000617	0.00268	1.04	10/26/2018 15:15	WG1186927
1,2-Dichloroethane	U		0.000510	0.00268	1.04	10/26/2018 15:15	WG1186927
1,1-Dichloroethene	U		0.000537	0.00268	1.04	10/26/2018 15:15	WG1186927
cis-1,2-Dichloroethene	U		0.000741	0.00268	1.04	10/26/2018 15:15	WG1186927
trans-1,2-Dichloroethene	U		0.00154	0.00537	1.04	10/26/2018 15:15	WG1186927
1,2-Dichloropropane	U		0.00136	0.00537	1.04	10/26/2018 15:15	WG1186927
1,1-Dichloropropene	U	J4	0.000752	0.00268	1.04	10/26/2018 15:15	WG1186927
1,3-Dichloropropane	U		0.00188	0.00537	1.04	10/26/2018 15:15	WG1186927
cis-1,3-Dichloropropene	U		0.000728	0.00268	1.04	10/26/2018 15:15	WG1186927
trans-1,3-Dichloropropene	U		0.00164	0.00537	1.04	10/26/2018 15:15	WG1186927
2,2-Dichloropropane	U		0.000852	0.00268	1.04	10/26/2018 15:15	WG1186927
Di-isopropyl ether	U		0.000376	0.00107	1.04	10/26/2018 15:15	WG1186927
Ethylbenzene	U		0.000558	0.00263	1.02	10/28/2018 16:08	WG1187558
Hexachloro-1,3-butadiene	U		0.0136	0.0268	1.04	10/26/2018 15:15	WG1186927
Isopropylbenzene	U		0.000908	0.00263	1.02	10/28/2018 16:08	WG1187558
p-Isopropyltoluene	U		0.00250	0.00537	1.04	10/26/2018 15:15	WG1186927
2-Butanone (MEK)	U		0.0134	0.0268	1.04	10/26/2018 15:15	WG1186927
Methylene Chloride	U		0.00712	0.0268	1.04	10/26/2018 15:15	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0107	0.0268	1.04	10/26/2018 15:15	WG1186927
Methyl tert-butyl ether	U		0.000317	0.00107	1.04	10/26/2018 15:15	WG1186927
Naphthalene	U		0.00328	0.0132	1.02	10/28/2018 16:08	WG1187558
n-Propylbenzene	U		0.00124	0.00526	1.02	10/28/2018 16:08	WG1187558
Styrene	U		0.00293	0.0134	1.04	10/26/2018 15:15	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000537	0.00268	1.04	10/26/2018 15:15	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000419	0.00268	1.04	10/26/2018 15:15	WG1186927

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		0.000725	0.00268	1.04	10/26/2018 15:15	WG1186927
Tetrachloroethene	U		0.000752	0.00268	1.04	10/26/2018 15:15	WG1186927
Toluene	U		0.00132	0.00526	1.02	10/28/2018 16:08	WG1187558
1,2,3-Trichlorobenzene	U		0.000671	0.00268	1.04	10/26/2018 15:15	WG1186927
1,2,4-Trichlorobenzene	U		0.00517	0.0134	1.04	10/26/2018 15:15	WG1186927
1,1,1-Trichloroethane	U		0.000295	0.00268	1.04	10/26/2018 15:15	WG1186927
1,1,2-Trichloroethane	U		0.000948	0.00268	1.04	10/26/2018 15:15	WG1186927
Trichloroethene	U		0.000429	0.00107	1.04	10/26/2018 15:15	WG1186927
Trichlorofluoromethane	U		0.000537	0.00268	1.04	10/26/2018 15:15	WG1186927
1,2,3-Trichloropropane	U		0.00547	0.0134	1.04	10/26/2018 15:15	WG1186927
1,2,4-Trimethylbenzene	U		0.00122	0.00526	1.02	10/28/2018 16:08	WG1187558
1,2,3-Trimethylbenzene	U		0.00121	0.00526	1.02	10/28/2018 16:08	WG1187558
Vinyl chloride	U		0.000733	0.00268	1.04	10/26/2018 15:15	WG1186927
1,3,5-Trimethylbenzene	U		0.00114	0.00526	1.02	10/28/2018 16:08	WG1187558
Xylenes, Total	U		0.00504	0.00684	1.02	10/28/2018 16:08	WG1187558
(S) Toluene-d8	*102*			*75.0-131*		*10/26/2018 15:15*	WG1186927
(S) Toluene-d8	*99.5*			*75.0-131*		*10/28/2018 16:08*	WG1187558
(S) Dibromofluoromethane	*105*			*65.0-129*		*10/26/2018 15:15*	WG1186927
(S) Dibromofluoromethane	*85.2*			*65.0-129*		*10/28/2018 16:08*	WG1187558
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*10/26/2018 15:15*	WG1186927
(S) 4-Bromofluorobenzene	*103*			*67.0-138*		*10/28/2018 16:08*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.26	20.6	1	10/28/2018 12:14	WG1187254
(S) o-Terphenyl	*74.4*			*50.0-150*		*10/28/2018 12:14*	WG1187254

Sample Narrative:

L1037317-02 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Acenaphthene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Acenaphthylene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Benzo(a)anthracene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Benzo(a)pyrene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Benzo(b)fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Benzo(g,h,i)perylene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Benzo(k)fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Chrysene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Dibenz(a,h)anthracene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Fluorene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Indeno(1,2,3-cd)pyrene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Naphthalene	U	J3	0.00206	0.0206	1	10/28/2018 08:40	WG1187246
Phenanthrene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
Pyrene	U	J3	0.000619	0.00619	1	10/28/2018 08:40	WG1187246
1-Methylnaphthalene	U	J3 J4	0.00206	0.0206	1	10/28/2018 08:40	WG1187246
2-Methylnaphthalene	U	J3	0.00206	0.0206	1	10/28/2018 08:40	WG1187246
2-Chloronaphthalene	U	J3	0.00206	0.0206	1	10/28/2018 08:40	WG1187246
(S) Nitrobenzene-d5	*78.7*			*14.0-149*		*10/28/2018 08:40*	WG1187246
(S) 2-Fluorobiphenyl	*93.7*			*34.0-125*		*10/28/2018 08:40*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*117*			*23.0-120*		*10/28/2018 08:40*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.6		1	10/27/2018 13:14	WG1187333

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		0.0178	0.0325	1.23	10/28/2018 16:28	WG1187558
Acrylonitrile	U		0.00247	0.0162	1.23	10/26/2018 15:34	WG1186927
Benzene	U		0.000520	0.00130	1.23	10/26/2018 15:34	WG1186927
Bromobenzene	U		0.00136	0.0162	1.23	10/26/2018 15:34	WG1186927
Bromodichloromethane	U		0.00102	0.00325	1.23	10/26/2018 15:34	WG1186927
Bromoform	U		0.00778	0.0325	1.23	10/26/2018 15:34	WG1186927
Bromomethane	U		0.00481	0.0162	1.23	10/26/2018 15:34	WG1186927
n-Butylbenzene	U		0.00499	0.0162	1.23	10/26/2018 15:34	WG1186927
sec-Butylbenzene	U		0.00329	0.0162	1.23	10/26/2018 15:34	WG1186927
tert-Butylbenzene	U		0.00202	0.00650	1.23	10/26/2018 15:34	WG1186927
Carbon tetrachloride	U		0.00141	0.00650	1.23	10/26/2018 15:34	WG1186927
Chlorobenzene	U		0.000745	0.00325	1.23	10/26/2018 15:34	WG1186927
Chlorodibromomethane	U		0.000585	0.00325	1.23	10/26/2018 15:34	WG1186927
Chloroethane	U		0.00141	0.00650	1.23	10/26/2018 15:34	WG1186927
Chloroform	0.00233	J	0.000539	0.00325	1.23	10/26/2018 15:34	WG1186927
Chloromethane	U		0.00181	0.0162	1.23	10/26/2018 15:34	WG1186927
2-Chlorotoluene	U		0.00119	0.00325	1.23	10/26/2018 15:34	WG1186927
4-Chlorotoluene	U		0.00147	0.00650	1.23	10/26/2018 15:34	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00663	0.0325	1.23	10/26/2018 15:34	WG1186927
1,2-Dibromoethane	U		0.000683	0.00325	1.23	10/26/2018 15:34	WG1186927
Dibromomethane	U		0.00130	0.00650	1.23	10/26/2018 15:34	WG1186927
1,2-Dichlorobenzene	U		0.00188	0.00650	1.23	10/26/2018 15:34	WG1186927
1,3-Dichlorobenzene	U		0.00221	0.00650	1.23	10/26/2018 15:34	WG1186927
1,4-Dichlorobenzene	U		0.00256	0.00650	1.23	10/26/2018 15:34	WG1186927
Dichlorodifluoromethane	U		0.00107	0.00325	1.23	10/26/2018 15:34	WG1186927
1,1-Dichloroethane	U		0.000747	0.00325	1.23	10/26/2018 15:34	WG1186927
1,2-Dichloroethane	U		0.000617	0.00325	1.23	10/26/2018 15:34	WG1186927
1,1-Dichloroethene	U		0.000650	0.00325	1.23	10/26/2018 15:34	WG1186927
cis-1,2-Dichloroethene	U		0.000897	0.00325	1.23	10/26/2018 15:34	WG1186927
trans-1,2-Dichloroethene	U		0.00186	0.00650	1.23	10/26/2018 15:34	WG1186927
1,2-Dichloropropane	U		0.00165	0.00650	1.23	10/26/2018 15:34	WG1186927
1,1-Dichloropropene	U	J4	0.000910	0.00325	1.23	10/26/2018 15:34	WG1186927
1,3-Dichloropropane	U		0.00227	0.00650	1.23	10/26/2018 15:34	WG1186927
cis-1,3-Dichloropropene	U		0.000881	0.00325	1.23	10/26/2018 15:34	WG1186927
trans-1,3-Dichloropropene	U		0.00199	0.00650	1.23	10/26/2018 15:34	WG1186927
2,2-Dichloropropane	U		0.00103	0.00325	1.23	10/26/2018 15:34	WG1186927
Di-isopropyl ether	U		0.000454	0.00130	1.23	10/26/2018 15:34	WG1186927
Ethylbenzene	U		0.000689	0.00325	1.23	10/28/2018 16:28	WG1187558
Hexachloro-1,3-butadiene	U		0.0165	0.0325	1.23	10/26/2018 15:34	WG1186927
Isopropylbenzene	U		0.00112	0.00325	1.23	10/28/2018 16:28	WG1187558
p-Isopropyltoluene	U		0.00302	0.00650	1.23	10/26/2018 15:34	WG1186927
2-Butanone (MEK)	U		0.0163	0.0325	1.23	10/26/2018 15:34	WG1186927
Methylene Chloride	U		0.00863	0.0325	1.23	10/26/2018 15:34	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0130	0.0325	1.23	10/26/2018 15:34	WG1186927
Methyl tert-butyl ether	U		0.000384	0.00130	1.23	10/26/2018 15:34	WG1186927
Naphthalene	U		0.00406	0.0162	1.23	10/28/2018 16:28	WG1187558
n-Propylbenzene	U		0.00153	0.00650	1.23	10/28/2018 16:28	WG1187558
Styrene	U		0.00355	0.0162	1.23	10/26/2018 15:34	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000650	0.00325	1.23	10/26/2018 15:34	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000507	0.00325	1.23	10/26/2018 15:34	WG1186927

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		0.000877	0.00325	1.23	10/26/2018 15:34	WG1186927
Tetrachloroethene	0.00181	J	0.000910	0.00325	1.23	10/26/2018 15:34	WG1186927
Toluene	0.00612	J	0.00163	0.00650	1.23	10/28/2018 16:28	WG1187558
1,2,3-Trichlorobenzene	U		0.000813	0.00325	1.23	10/26/2018 15:34	WG1186927
1,2,4-Trichlorobenzene	U		0.00627	0.0162	1.23	10/26/2018 15:34	WG1186927
1,1,1-Trichloroethane	U		0.000357	0.00325	1.23	10/26/2018 15:34	WG1186927
1,1,2-Trichloroethane	U		0.00115	0.00325	1.23	10/26/2018 15:34	WG1186927
Trichloroethene	U		0.000520	0.00130	1.23	10/26/2018 15:34	WG1186927
Trichlorofluoromethane	U		0.000650	0.00325	1.23	10/26/2018 15:34	WG1186927
1,2,3-Trichloropropane	U		0.00663	0.0162	1.23	10/26/2018 15:34	WG1186927
1,2,4-Trimethylbenzene	U		0.00151	0.00650	1.23	10/28/2018 16:28	WG1187558
1,2,3-Trimethylbenzene	U		0.00149	0.00650	1.23	10/28/2018 16:28	WG1187558
Vinyl chloride	U		0.000888	0.00325	1.23	10/26/2018 15:34	WG1186927
1,3,5-Trimethylbenzene	U		0.00141	0.00650	1.23	10/28/2018 16:28	WG1187558
Xylenes, Total	U		0.00621	0.00845	1.23	10/28/2018 16:28	WG1187558
(S) Toluene-d8	*100*			*75.0-131*		*10/26/2018 15:34*	WG1186927
(S) Toluene-d8	*104*			*75.0-131*		*10/28/2018 16:28*	WG1187558
(S) Dibromofluoromethane	*107*			*65.0-129*		*10/26/2018 15:34*	WG1186927
(S) Dibromofluoromethane	*88.6*			*65.0-129*		*10/28/2018 16:28*	WG1187558
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/26/2018 15:34*	WG1186927
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*10/28/2018 16:28*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	35.1	J4	5.39	21.1	1	10/28/2018 12:27	WG1187254
(S) o-Terphenyl	*53.5*			*50.0-150*		*10/28/2018 12:27*	WG1187254

Sample Narrative:

L1037317-03 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Acenaphthene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Acenaphthylene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Benzo(a)anthracene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Benzo(a)pyrene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Benzo(b)fluoranthene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Benzo(g,h,i)perylene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Benzo(k)fluoranthene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Chrysene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Dibenz(a,h)anthracene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Fluoranthene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Fluorene	U	J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Indeno(1,2,3-cd)pyrene	0.000706	J J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Naphthalene	U	J3	0.00211	0.0211	1	10/28/2018 09:00	WG1187246
Phenanthrene	0.00392	J J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
Pyrene	0.00141	J J3	0.000634	0.00634	1	10/28/2018 09:00	WG1187246
1-Methylnaphthalene	0.00294	J J3 J4	0.00211	0.0211	1	10/28/2018 09:00	WG1187246
2-Methylnaphthalene	0.00644	J J3	0.00211	0.0211	1	10/28/2018 09:00	WG1187246
2-Chloronaphthalene	U	J3	0.00211	0.0211	1	10/28/2018 09:00	WG1187246
(S) Nitrobenzene-d5	*84.5*			*14.0-149*		*10/28/2018 09:00*	WG1187246
(S) 2-Fluorobiphenyl	*101*			*34.0-125*		*10/28/2018 09:00*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*119*			*23.0-120*		*10/28/2018 09:00*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.4		1	10/27/2018 13:14	WG1187333

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		0.0149	0.0272	1.06	10/28/2018 16:47	WG1187558
Acrylonitrile	U		0.00206	0.0136	1.06	10/26/2018 15:52	WG1186927
Benzene	U		0.000435	0.00109	1.06	10/26/2018 15:52	WG1186927
Bromobenzene	U		0.00114	0.0136	1.06	10/26/2018 15:52	WG1186927
Bromodichloromethane	U		0.000857	0.00272	1.06	10/26/2018 15:52	WG1186927
Bromoform	U		0.00651	0.0272	1.06	10/26/2018 15:52	WG1186927
Bromomethane	U		0.00402	0.0136	1.06	10/26/2018 15:52	WG1186927
n-Butylbenzene	U		0.00418	0.0136	1.06	10/26/2018 15:52	WG1186927
sec-Butylbenzene	U		0.00275	0.0136	1.06	10/26/2018 15:52	WG1186927
tert-Butylbenzene	U		0.00168	0.00544	1.06	10/26/2018 15:52	WG1186927
Carbon tetrachloride	U		0.00117	0.00544	1.06	10/26/2018 15:52	WG1186927
Chlorobenzene	U		0.000623	0.00272	1.06	10/26/2018 15:52	WG1186927
Chlorodibromomethane	U		0.000490	0.00272	1.06	10/26/2018 15:52	WG1186927
Chloroethane	U		0.00117	0.00544	1.06	10/26/2018 15:52	WG1186927
Chloroform	0.000943	J	0.000452	0.00272	1.06	10/26/2018 15:52	WG1186927
Chloromethane	U		0.00151	0.0136	1.06	10/26/2018 15:52	WG1186927
2-Chlorotoluene	U		0.00100	0.00272	1.06	10/26/2018 15:52	WG1186927
4-Chlorotoluene	U		0.00123	0.00544	1.06	10/26/2018 15:52	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00555	0.0272	1.06	10/26/2018 15:52	WG1186927
1,2-Dibromoethane	U		0.000571	0.00272	1.06	10/26/2018 15:52	WG1186927
Dibromomethane	U		0.00109	0.00544	1.06	10/26/2018 15:52	WG1186927
1,2-Dichlorobenzene	U		0.00158	0.00544	1.06	10/26/2018 15:52	WG1186927
1,3-Dichlorobenzene	U		0.00185	0.00544	1.06	10/26/2018 15:52	WG1186927
1,4-Dichlorobenzene	U		0.00214	0.00544	1.06	10/26/2018 15:52	WG1186927
Dichlorodifluoromethane	U		0.000890	0.00272	1.06	10/26/2018 15:52	WG1186927
1,1-Dichloroethane	U		0.000626	0.00272	1.06	10/26/2018 15:52	WG1186927
1,2-Dichloroethane	U		0.000517	0.00272	1.06	10/26/2018 15:52	WG1186927
1,1-Dichloroethene	U		0.000544	0.00272	1.06	10/26/2018 15:52	WG1186927
cis-1,2-Dichloroethene	U		0.000750	0.00272	1.06	10/26/2018 15:52	WG1186927
trans-1,2-Dichloroethene	U		0.00156	0.00544	1.06	10/26/2018 15:52	WG1186927
1,2-Dichloropropane	U		0.00139	0.00544	1.06	10/26/2018 15:52	WG1186927
1,1-Dichloropropene	U	J4	0.000761	0.00272	1.06	10/26/2018 15:52	WG1186927
1,3-Dichloropropane	U		0.00191	0.00544	1.06	10/26/2018 15:52	WG1186927
cis-1,3-Dichloropropene	U		0.000738	0.00272	1.06	10/26/2018 15:52	WG1186927
trans-1,3-Dichloropropene	U		0.00166	0.00544	1.06	10/26/2018 15:52	WG1186927
2,2-Dichloropropane	U		0.000862	0.00272	1.06	10/26/2018 15:52	WG1186927
Di-isopropyl ether	U		0.000381	0.00109	1.06	10/26/2018 15:52	WG1186927
Ethylbenzene	U		0.000577	0.00272	1.06	10/28/2018 16:47	WG1187558
Hexachloro-1,3-butadiene	U		0.0139	0.0272	1.06	10/26/2018 15:52	WG1186927
Isopropylbenzene	U		0.000939	0.00272	1.06	10/28/2018 16:47	WG1187558
p-Isopropyltoluene	U		0.00253	0.00544	1.06	10/26/2018 15:52	WG1186927
2-Butanone (MEK)	U		0.0135	0.0272	1.06	10/26/2018 15:52	WG1186927
Methylene Chloride	U		0.00722	0.0272	1.06	10/26/2018 15:52	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0109	0.0272	1.06	10/26/2018 15:52	WG1186927
Methyl tert-butyl ether	U		0.000321	0.00109	1.06	10/26/2018 15:52	WG1186927
Naphthalene	U		0.00340	0.0136	1.06	10/28/2018 16:47	WG1187558
n-Propylbenzene	U		0.00128	0.00544	1.06	10/28/2018 16:47	WG1187558
Styrene	U		0.00297	0.0136	1.06	10/26/2018 15:52	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000544	0.00272	1.06	10/26/2018 15:52	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000424	0.00272	1.06	10/26/2018 15:52	WG1186927

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		0.000735	0.00272	1.06	10/26/2018 15:52	WG1186927
Tetrachloroethene	0.000959	J	0.000761	0.00272	1.06	10/26/2018 15:52	WG1186927
Toluene	0.00277	J	0.00135	0.00544	1.06	10/28/2018 16:47	WG1187558
1,2,3-Trichlorobenzene	U		0.000679	0.00272	1.06	10/26/2018 15:52	WG1186927
1,2,4-Trichlorobenzene	U		0.00524	0.0136	1.06	10/26/2018 15:52	WG1186927
1,1,1-Trichloroethane	U		0.000300	0.00272	1.06	10/26/2018 15:52	WG1186927
1,1,2-Trichloroethane	U		0.000961	0.00272	1.06	10/26/2018 15:52	WG1186927
Trichloroethene	U		0.000435	0.00109	1.06	10/26/2018 15:52	WG1186927
Trichlorofluoromethane	U		0.000544	0.00272	1.06	10/26/2018 15:52	WG1186927
1,2,3-Trichloropropane	U		0.00555	0.0136	1.06	10/26/2018 15:52	WG1186927
1,2,4-Trimethylbenzene	U		0.00126	0.00544	1.06	10/28/2018 16:47	WG1187558
1,2,3-Trimethylbenzene	U		0.00125	0.00544	1.06	10/28/2018 16:47	WG1187558
Vinyl chloride	U		0.000743	0.00272	1.06	10/26/2018 15:52	WG1186927
1,3,5-Trimethylbenzene	U		0.00117	0.00544	1.06	10/28/2018 16:47	WG1187558
Xylenes, Total	U		0.00520	0.00707	1.06	10/28/2018 16:47	WG1187558
(S) Toluene-d8	*101*			*75.0-131*		*10/26/2018 15:52*	WG1186927
(S) Toluene-d8	*104*			*75.0-131*		*10/28/2018 16:47*	WG1187558
(S) Dibromofluoromethane	*105*			*65.0-129*		*10/26/2018 15:52*	WG1186927
(S) Dibromofluoromethane	*87.7*			*65.0-129*		*10/28/2018 16:47*	WG1187558
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/26/2018 15:52*	WG1186927
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*10/28/2018 16:47*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.23	20.5	1	10/28/2018 12:39	WG1187254
(S) o-Terphenyl	*74.4*			*50.0-150*		*10/28/2018 12:39*	WG1187254

Sample Narrative:

L1037317-04 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Acenaphthene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Acenaphthylene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Benzo(a)anthracene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Benzo(a)pyrene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Benzo(b)fluoranthene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Benzo(g,h,i)perylene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Benzo(k)fluoranthene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Chrysene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Dibenz(a,h)anthracene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Fluoranthene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Fluorene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Indeno(1,2,3-cd)pyrene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Naphthalene	U	J3	0.00205	0.0205	1	10/28/2018 09:21	WG1187246
Phenanthrene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
Pyrene	U	J3	0.000616	0.00616	1	10/28/2018 09:21	WG1187246
1-Methylnaphthalene	U	J3 J4	0.00205	0.0205	1	10/28/2018 09:21	WG1187246
2-Methylnaphthalene	U	J3	0.00205	0.0205	1	10/28/2018 09:21	WG1187246
2-Chloronaphthalene	U	J3	0.00205	0.0205	1	10/28/2018 09:21	WG1187246
(S) Nitrobenzene-d5	*76.9*			*14.0-149*		*10/28/2018 09:21*	WG1187246
(S) 2-Fluorobiphenyl	*89.6*			*34.0-125*		*10/28/2018 09:21*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*113*			*23.0-120*		*10/28/2018 09:21*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.5		1	10/27/2018 13:14	WG1187333

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		0.0148	0.0270	1.01	10/28/2018 17:07	WG1187558
Acrylonitrile	U		0.00205	0.0135	1.01	10/26/2018 16:11	WG1186927
Benzene	U		0.000432	0.00108	1.01	10/26/2018 16:11	WG1186927
Bromobenzene	U		0.00113	0.0135	1.01	10/26/2018 16:11	WG1186927
Bromodichloromethane	U		0.000851	0.00270	1.01	10/26/2018 16:11	WG1186927
Bromoform	U		0.00646	0.0270	1.01	10/26/2018 16:11	WG1186927
Bromomethane	U		0.00400	0.0135	1.01	10/26/2018 16:11	WG1186927
n-Butylbenzene	U		0.00415	0.0135	1.01	10/26/2018 16:11	WG1186927
sec-Butylbenzene	U		0.00274	0.0135	1.01	10/26/2018 16:11	WG1186927
tert-Butylbenzene	U		0.00167	0.00540	1.01	10/26/2018 16:11	WG1186927
Carbon tetrachloride	U		0.00117	0.00540	1.01	10/26/2018 16:11	WG1186927
Chlorobenzene	U		0.000619	0.00270	1.01	10/26/2018 16:11	WG1186927
Chlorodibromomethane	U		0.000486	0.00270	1.01	10/26/2018 16:11	WG1186927
Chloroethane	U		0.00117	0.00540	1.01	10/26/2018 16:11	WG1186927
Chloroform	0.00181	J	0.000448	0.00270	1.01	10/26/2018 16:11	WG1186927
Chloromethane	U		0.00150	0.0135	1.01	10/26/2018 16:11	WG1186927
2-Chlorotoluene	U		0.000994	0.00270	1.01	10/26/2018 16:11	WG1186927
4-Chlorotoluene	U		0.00122	0.00540	1.01	10/26/2018 16:11	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00551	0.0270	1.01	10/26/2018 16:11	WG1186927
1,2-Dibromoethane	U		0.000567	0.00270	1.01	10/26/2018 16:11	WG1186927
Dibromomethane	U		0.00108	0.00540	1.01	10/26/2018 16:11	WG1186927
1,2-Dichlorobenzene	U		0.00156	0.00540	1.01	10/26/2018 16:11	WG1186927
1,3-Dichlorobenzene	U		0.00184	0.00540	1.01	10/26/2018 16:11	WG1186927
1,4-Dichlorobenzene	U		0.00213	0.00540	1.01	10/26/2018 16:11	WG1186927
Dichlorodifluoromethane	U		0.000884	0.00270	1.01	10/26/2018 16:11	WG1186927
1,1-Dichloroethane	U		0.000621	0.00270	1.01	10/26/2018 16:11	WG1186927
1,2-Dichloroethane	U		0.000513	0.00270	1.01	10/26/2018 16:11	WG1186927
1,1-Dichloroethene	U		0.000540	0.00270	1.01	10/26/2018 16:11	WG1186927
cis-1,2-Dichloroethene	U		0.000746	0.00270	1.01	10/26/2018 16:11	WG1186927
trans-1,2-Dichloroethene	U		0.00154	0.00540	1.01	10/26/2018 16:11	WG1186927
1,2-Dichloropropane	U		0.00137	0.00540	1.01	10/26/2018 16:11	WG1186927
1,1-Dichloropropene	U	J4	0.000756	0.00270	1.01	10/26/2018 16:11	WG1186927
1,3-Dichloropropane	U		0.00189	0.00540	1.01	10/26/2018 16:11	WG1186927
cis-1,3-Dichloropropene	U		0.000733	0.00270	1.01	10/26/2018 16:11	WG1186927
trans-1,3-Dichloropropene	U		0.00165	0.00540	1.01	10/26/2018 16:11	WG1186927
2,2-Dichloropropane	U		0.000857	0.00270	1.01	10/26/2018 16:11	WG1186927
Di-isopropyl ether	U		0.000379	0.00108	1.01	10/26/2018 16:11	WG1186927
Ethylbenzene	U		0.000572	0.00270	1.01	10/28/2018 17:07	WG1187558
Hexachloro-1,3-butadiene	U		0.0137	0.0270	1.01	10/26/2018 16:11	WG1186927
Isopropylbenzene	U		0.000933	0.00270	1.01	10/26/2018 16:11	WG1186927
p-Isopropyltoluene	U		0.00251	0.00540	1.01	10/26/2018 16:11	WG1186927
2-Butanone (MEK)	U		0.0135	0.0270	1.01	10/26/2018 16:11	WG1186927
Methylene Chloride	U		0.00718	0.0270	1.01	10/26/2018 16:11	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0108	0.0270	1.01	10/26/2018 16:11	WG1186927
Methyl tert-butyl ether	U		0.000319	0.00108	1.01	10/26/2018 16:11	WG1186927
Naphthalene	U		0.00337	0.0135	1.01	10/26/2018 16:11	WG1186927
n-Propylbenzene	U		0.00127	0.00540	1.01	10/28/2018 17:07	WG1187558
Styrene	U		0.00295	0.0135	1.01	10/26/2018 16:11	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000540	0.00270	1.01	10/26/2018 16:11	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000421	0.00270	1.01	10/26/2018 16:11	WG1186927

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		0.000729	0.00270	1.01	10/26/2018 16:11	WG1186927
Tetrachloroethene	U		0.000756	0.00270	1.01	10/26/2018 16:11	WG1186927
Toluene	U		0.00135	0.00540	1.01	10/28/2018 17:07	WG1187558
1,2,3-Trichlorobenzene	U		0.000675	0.00270	1.01	10/26/2018 16:11	WG1186927
1,2,4-Trichlorobenzene	U		0.00521	0.0135	1.01	10/26/2018 16:11	WG1186927
1,1,1-Trichloroethane	U		0.000297	0.00270	1.01	10/26/2018 16:11	WG1186927
1,1,2-Trichloroethane	U		0.000954	0.00270	1.01	10/26/2018 16:11	WG1186927
Trichloroethene	U		0.000432	0.00108	1.01	10/26/2018 16:11	WG1186927
Trichlorofluoromethane	U		0.000540	0.00270	1.01	10/26/2018 16:11	WG1186927
1,2,3-Trichloropropane	U		0.00551	0.0135	1.01	10/26/2018 16:11	WG1186927
1,2,4-Trimethylbenzene	U		0.00125	0.00540	1.01	10/28/2018 17:07	WG1187558
1,2,3-Trimethylbenzene	U		0.00124	0.00540	1.01	10/28/2018 17:07	WG1187558
Vinyl chloride	U		0.000738	0.00270	1.01	10/26/2018 16:11	WG1186927
1,3,5-Trimethylbenzene	U		0.00117	0.00540	1.01	10/28/2018 17:07	WG1187558
Xylenes, Total	U		0.00517	0.00702	1.01	10/28/2018 17:07	WG1187558
(S) Toluene-d8	*101*			*75.0-131*		*10/26/2018 16:11*	WG1186927
(S) Toluene-d8	*103*			*75.0-131*		*10/28/2018 17:07*	WG1187558
(S) Dibromofluoromethane	*108*			*65.0-129*		*10/26/2018 16:11*	WG1186927
(S) Dibromofluoromethane	*89.5*			*65.0-129*		*10/28/2018 17:07*	WG1187558
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*10/26/2018 16:11*	WG1186927
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*10/28/2018 17:07*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	9.39	J J4	5.46	21.4	1	10/28/2018 12:52	WG1187254
(S) o-Terphenyl	*66.3*			*50.0-150*		*10/28/2018 12:52*	WG1187254

Sample Narrative:

L1037317-05 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Acenaphthene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Acenaphthylene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Benzo(a)anthracene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Benzo(a)pyrene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Benzo(b)fluoranthene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Benzo(g,h,i)perylene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Benzo(k)fluoranthene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Chrysene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Dibenz(a,h)anthracene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Fluoranthene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Fluorene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Indeno(1,2,3-cd)pyrene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Naphthalene	U	J3	0.00214	0.0214	1	10/28/2018 09:42	WG1187246
Phenanthrene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
Pyrene	U	J3	0.000642	0.00642	1	10/28/2018 09:42	WG1187246
1-Methylnaphthalene	U	J3 J4	0.00214	0.0214	1	10/28/2018 09:42	WG1187246
2-Methylnaphthalene	U	J3	0.00214	0.0214	1	10/28/2018 09:42	WG1187246
2-Chloronaphthalene	U	J3	0.00214	0.0214	1	10/28/2018 09:42	WG1187246
(S) Nitrobenzene-d5	*90.9*			*14.0-149*		*10/28/2018 09:42*	WG1187246
(S) 2-Fluorobiphenyl	*100*			*34.0-125*		*10/28/2018 09:42*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*110*			*23.0-120*		*10/28/2018 09:42*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.9		1	10/27/2018 13:14	WG1187333

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		0.0154	0.0281	1.09	10/28/2018 17:28	WG1187558
Acrylonitrile	U		0.00214	0.0141	1.09	10/26/2018 16:29	WG1186927
Benzene	U		0.000450	0.00112	1.09	10/26/2018 16:29	WG1186927
Bromobenzene	U		0.00118	0.0141	1.09	10/26/2018 16:29	WG1186927
Bromodichloromethane	U		0.000887	0.00281	1.09	10/26/2018 16:29	WG1186927
Bromoform	U		0.00673	0.0281	1.09	10/26/2018 16:29	WG1186927
Bromomethane	U		0.00416	0.0141	1.09	10/26/2018 16:29	WG1186927
n-Butylbenzene	U		0.00431	0.0141	1.09	10/26/2018 16:29	WG1186927
sec-Butylbenzene	U		0.00285	0.0141	1.09	10/26/2018 16:29	WG1186927
tert-Butylbenzene	U		0.00174	0.00562	1.09	10/26/2018 16:29	WG1186927
Carbon tetrachloride	U		0.00122	0.00562	1.09	10/26/2018 16:29	WG1186927
Chlorobenzene	U		0.000644	0.00281	1.09	10/26/2018 16:29	WG1186927
Chlorodibromomethane	U		0.000506	0.00281	1.09	10/26/2018 16:29	WG1186927
Chloroethane	U		0.00122	0.00562	1.09	10/26/2018 16:29	WG1186927
Chloroform	0.00114	J	0.000466	0.00281	1.09	10/26/2018 16:29	WG1186927
Chloromethane	U		0.00157	0.0141	1.09	10/26/2018 16:29	WG1186927
2-Chlorotoluene	U		0.00103	0.00281	1.09	10/26/2018 16:29	WG1186927
4-Chlorotoluene	U		0.00127	0.00562	1.09	10/26/2018 16:29	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00574	0.0281	1.09	10/26/2018 16:29	WG1186927
1,2-Dibromoethane	U		0.000590	0.00281	1.09	10/26/2018 16:29	WG1186927
Dibromomethane	U		0.00112	0.00562	1.09	10/26/2018 16:29	WG1186927
1,2-Dichlorobenzene	U		0.00163	0.00562	1.09	10/26/2018 16:29	WG1186927
1,3-Dichlorobenzene	U		0.00191	0.00562	1.09	10/26/2018 16:29	WG1186927
1,4-Dichlorobenzene	U		0.00222	0.00562	1.09	10/26/2018 16:29	WG1186927
Dichlorodifluoromethane	U		0.000921	0.00281	1.09	10/26/2018 16:29	WG1186927
1,1-Dichloroethane	U		0.000647	0.00281	1.09	10/26/2018 16:29	WG1186927
1,2-Dichloroethane	U		0.000535	0.00281	1.09	10/26/2018 16:29	WG1186927
1,1-Dichloroethene	U		0.000562	0.00281	1.09	10/26/2018 16:29	WG1186927
cis-1,2-Dichloroethene	U		0.000776	0.00281	1.09	10/26/2018 16:29	WG1186927
trans-1,2-Dichloroethene	U		0.00161	0.00562	1.09	10/26/2018 16:29	WG1186927
1,2-Dichloropropane	U		0.00142	0.00562	1.09	10/26/2018 16:29	WG1186927
1,1-Dichloropropene	U	J4	0.000787	0.00281	1.09	10/26/2018 16:29	WG1186927
1,3-Dichloropropane	U		0.00197	0.00562	1.09	10/26/2018 16:29	WG1186927
cis-1,3-Dichloropropene	U		0.000763	0.00281	1.09	10/26/2018 16:29	WG1186927
trans-1,3-Dichloropropene	U		0.00172	0.00562	1.09	10/26/2018 16:29	WG1186927
2,2-Dichloropropane	U		0.000892	0.00281	1.09	10/26/2018 16:29	WG1186927
Di-isopropyl ether	U		0.000394	0.00112	1.09	10/26/2018 16:29	WG1186927
Ethylbenzene	U		0.000597	0.00281	1.09	10/28/2018 17:28	WG1187558
Hexachloro-1,3-butadiene	U		0.0142	0.0281	1.09	10/26/2018 16:29	WG1186927
Isopropylbenzene	U		0.000971	0.00281	1.09	10/28/2018 17:28	WG1187558
p-Isopropyltoluene	U		0.00262	0.00562	1.09	10/26/2018 16:29	WG1186927
2-Butanone (MEK)	U		0.0140	0.0281	1.09	10/26/2018 16:29	WG1186927
Methylene Chloride	U		0.00747	0.0281	1.09	10/26/2018 16:29	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0112	0.0281	1.09	10/26/2018 16:29	WG1186927
Methyl tert-butyl ether	U		0.000332	0.00112	1.09	10/26/2018 16:29	WG1186927
Naphthalene	U		0.00351	0.0141	1.09	10/26/2018 16:29	WG1186927
n-Propylbenzene	U		0.00133	0.00562	1.09	10/28/2018 17:28	WG1187558
Styrene	U		0.00308	0.0141	1.09	10/26/2018 16:29	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000562	0.00281	1.09	10/26/2018 16:29	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000439	0.00281	1.09	10/26/2018 16:29	WG1186927

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		0.000760	0.00281	1.09	10/26/2018 16:29	WG1186927
Tetrachloroethene	U		0.000787	0.00281	1.09	10/26/2018 16:29	WG1186927
Toluene	U		0.00140	0.00562	1.09	10/28/2018 17:28	WG1187558
1,2,3-Trichlorobenzene	U		0.000703	0.00281	1.09	10/26/2018 16:29	WG1186927
1,2,4-Trichlorobenzene	U		0.00542	0.0141	1.09	10/26/2018 16:29	WG1186927
1,1,1-Trichloroethane	U		0.000310	0.00281	1.09	10/26/2018 16:29	WG1186927
1,1,2-Trichloroethane	U		0.000993	0.00281	1.09	10/26/2018 16:29	WG1186927
Trichloroethene	U		0.000450	0.00112	1.09	10/26/2018 16:29	WG1186927
Trichlorofluoromethane	U		0.000562	0.00281	1.09	10/26/2018 16:29	WG1186927
1,2,3-Trichloropropane	U		0.00574	0.0141	1.09	10/26/2018 16:29	WG1186927
1,2,4-Trimethylbenzene	U		0.00130	0.00562	1.09	10/28/2018 17:28	WG1187558
1,2,3-Trimethylbenzene	U		0.00129	0.00562	1.09	10/28/2018 17:28	WG1187558
Vinyl chloride	U		0.000768	0.00281	1.09	10/26/2018 16:29	WG1186927
1,3,5-Trimethylbenzene	U		0.00122	0.00562	1.09	10/28/2018 17:28	WG1187558
Xylenes, Total	U		0.00538	0.00731	1.09	10/28/2018 17:28	WG1187558
(S) Toluene-d8	*101*			*75.0-131*		*10/26/2018 16:29*	WG1186927
(S) Toluene-d8	*104*			*75.0-131*		*10/28/2018 17:28*	WG1187558
(S) Dibromofluoromethane	*108*			*65.0-129*		*10/26/2018 16:29*	WG1186927
(S) Dibromofluoromethane	*87.5*			*65.0-129*		*10/28/2018 17:28*	WG1187558
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/26/2018 16:29*	WG1186927
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*10/28/2018 17:28*	WG1187558

Semi-Volatile Organic Compounds (GC) by Method AK102/103

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J4	5.26	20.6	1	10/28/2018 13:05	WG1187254
(S) o-Terphenyl	*79.7*			*50.0-150*		*10/28/2018 13:05*	WG1187254

Sample Narrative:

L1037317-06 WG1187254: Lcsd fails low, cannot be re-extracted due to holding time.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Acenaphthene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Acenaphthylene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Benzo(a)anthracene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Benzo(a)pyrene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Benzo(b)fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Benzo(g,h,i)perylene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Benzo(k)fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Chrysene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Dibenz(a,h)anthracene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Fluoranthene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Fluorene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Indeno(1,2,3-cd)pyrene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Naphthalene	U	J3	0.00206	0.0206	1	10/28/2018 10:03	WG1187246
Phenanthrene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
Pyrene	U	J3	0.000619	0.00619	1	10/28/2018 10:03	WG1187246
1-Methylnaphthalene	U	J3 J4	0.00206	0.0206	1	10/28/2018 10:03	WG1187246
2-Methylnaphthalene	U	J3	0.00206	0.0206	1	10/28/2018 10:03	WG1187246
2-Chloronaphthalene	U	J3	0.00206	0.0206	1	10/28/2018 10:03	WG1187246
(S) Nitrobenzene-d5	*74.8*			*14.0-149*		*10/28/2018 10:03*	WG1187246
(S) 2-Fluorobiphenyl	*87.7*			*34.0-125*		*10/28/2018 10:03*	WG1187246

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) p-Terphenyl-d14	*114*			*23.0-120*		*10/28/2018 10:03*	WG1187246

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.3		1	10/29/2018 10:18	WG1187334

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.35	T8	1	10/25/2018 12:06	WG1186183

Sample Narrative:

L1037317-07 WG1186183: 7.35 at 21C

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
PCB 1016	U	J4	0.00364	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1221	U		0.00558	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1232	U		0.00433	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1242	U		0.00330	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1248	U		0.00327	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1254	U		0.00490	0.0177	1	10/26/2018 23:38	WG1186140
PCB 1260	U	J4	0.00513	0.0177	1	10/26/2018 23:38	WG1186140
(S) Decachlorobiphenyl	*69.4*			*10.0-135*		*10/26/2018 23:38*	WG1186140
(S) Tetrachloro-m-xylene	*89.3*			*10.0-139*		*10/26/2018 23:38*	WG1186140

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	U		0.0137	0.0250	1	10/28/2018 15:27	WG1187558
Acrylonitrile	U		0.00190	0.0125	1	10/26/2018 12:28	WG1186927
Benzene	U		0.000400	0.00100	1	10/26/2018 12:28	WG1186927
Bromobenzene	U		0.00105	0.0125	1	10/26/2018 12:28	WG1186927
Bromodichloromethane	U		0.000788	0.00250	1	10/26/2018 12:28	WG1186927
Bromoform	U		0.00598	0.0250	1	10/26/2018 12:28	WG1186927
Bromomethane	U		0.00370	0.0125	1	10/26/2018 12:28	WG1186927
n-Butylbenzene	U		0.00384	0.0125	1	10/26/2018 12:28	WG1186927
sec-Butylbenzene	U		0.00253	0.0125	1	10/26/2018 12:28	WG1186927
tert-Butylbenzene	U		0.00155	0.00500	1	10/26/2018 12:28	WG1186927
Carbon tetrachloride	U		0.00108	0.00500	1	10/26/2018 12:28	WG1186927
Chlorobenzene	U		0.000573	0.00250	1	10/26/2018 12:28	WG1186927
Chlorodibromomethane	U		0.000450	0.00250	1	10/26/2018 12:28	WG1186927
Chloroethane	U		0.00108	0.00500	1	10/26/2018 12:28	WG1186927
Chloroform	0.00126	J	0.000415	0.00250	1	10/26/2018 12:28	WG1186927
Chloromethane	U		0.00139	0.0125	1	10/26/2018 12:28	WG1186927
2-Chlorotoluene	U		0.000920	0.00250	1	10/26/2018 12:28	WG1186927
4-Chlorotoluene	U		0.00113	0.00500	1	10/26/2018 12:28	WG1186927
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250	1	10/26/2018 12:28	WG1186927
1,2-Dibromoethane	U		0.000525	0.00250	1	10/26/2018 12:28	WG1186927
Dibromomethane	U		0.00100	0.00500	1	10/26/2018 12:28	WG1186927
1,2-Dichlorobenzene	U		0.00145	0.00500	1	10/26/2018 12:28	WG1186927
1,3-Dichlorobenzene	U		0.00170	0.00500	1	10/26/2018 12:28	WG1186927
1,4-Dichlorobenzene	U		0.00197	0.00500	1	10/26/2018 12:28	WG1186927
Dichlorodifluoromethane	U		0.000818	0.00250	1	10/26/2018 12:28	WG1186927
1,1-Dichloroethane	U		0.000575	0.00250	1	10/26/2018 12:28	WG1186927
1,2-Dichloroethane	U		0.000475	0.00250	1	10/26/2018 12:28	WG1186927
1,1-Dichloroethene	U		0.000500	0.00250	1	10/26/2018 12:28	WG1186927
cis-1,2-Dichloroethene	U		0.000690	0.00250	1	10/26/2018 12:28	WG1186927
trans-1,2-Dichloroethene	U		0.00143	0.00500	1	10/26/2018 12:28	WG1186927
1,2-Dichloropropane	U		0.00127	0.00500	1	10/26/2018 12:28	WG1186927
1,1-Dichloropropene	U	J4	0.000700	0.00250	1	10/26/2018 12:28	WG1186927
1,3-Dichloropropane	U		0.00175	0.00500	1	10/26/2018 12:28	WG1186927
cis-1,3-Dichloropropene	U		0.000678	0.00250	1	10/26/2018 12:28	WG1186927
trans-1,3-Dichloropropene	U		0.00153	0.00500	1	10/26/2018 12:28	WG1186927
2,2-Dichloropropane	U		0.000793	0.00250	1	10/26/2018 12:28	WG1186927
Di-isopropyl ether	U		0.000350	0.00100	1	10/26/2018 12:28	WG1186927
Ethylbenzene	0.00146	J	0.000530	0.00250	1	10/26/2018 12:28	WG1186927
Hexachloro-1,3-butadiene	U		0.0127	0.0250	1	10/26/2018 12:28	WG1186927
Isopropylbenzene	U		0.000863	0.00250	1	10/26/2018 12:28	WG1186927
p-Isopropyltoluene	U		0.00233	0.00500	1	10/26/2018 12:28	WG1186927
2-Butanone (MEK)	U		0.0125	0.0250	1	10/26/2018 12:28	WG1186927
Methylene Chloride	U		0.00664	0.0250	1	10/26/2018 12:28	WG1186927
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250	1	10/26/2018 12:28	WG1186927
Methyl tert-butyl ether	U		0.000295	0.00100	1	10/26/2018 12:28	WG1186927
Naphthalene	U		0.00312	0.0125	1	10/26/2018 12:28	WG1186927
n-Propylbenzene	U		0.00118	0.00500	1	10/26/2018 12:28	WG1186927
Styrene	0.00285	J	0.00273	0.0125	1	10/26/2018 12:28	WG1186927
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250	1	10/26/2018 12:28	WG1186927
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250	1	10/26/2018 12:28	WG1186927
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250	1	10/26/2018 12:28	WG1186927
Tetrachloroethene	U		0.000700	0.00250	1	10/26/2018 12:28	WG1186927
Toluene	0.0427		0.00125	0.00500	1	10/26/2018 12:28	WG1186927
1,2,3-Trichlorobenzene	U		0.000625	0.00250	1	10/26/2018 12:28	WG1186927
1,2,4-Trichlorobenzene	U		0.00482	0.0125	1	10/26/2018 12:28	WG1186927
1,1,1-Trichloroethane	U		0.000275	0.00250	1	10/26/2018 12:28	WG1186927

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 mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	U		0.000883	0.00250	1	10/26/2018 12:28	WG1186927
Trichloroethene	U		0.000400	0.00100	1	10/26/2018 12:28	WG1186927
Trichlorofluoromethane	U		0.000500	0.00250	1	10/26/2018 12:28	WG1186927
1,2,3-Trichloropropane	U		0.00510	0.0125	1	10/26/2018 12:28	WG1186927
1,2,4-Trimethylbenzene	0.00520		0.00116	0.00500	1	10/26/2018 12:28	WG1186927
1,2,3-Trimethylbenzene	0.00121	J	0.00115	0.00500	1	10/26/2018 12:28	WG1186927
Vinyl chloride	U		0.000683	0.00250	1	10/26/2018 12:28	WG1186927
1,3,5-Trimethylbenzene	0.00133	J	0.00108	0.00500	1	10/26/2018 12:28	WG1186927
Xylenes, Total	0.00625	J	0.00478	0.00650	1	10/26/2018 12:28	WG1186927
(S) Toluene-d8	*100*			*75.0-131*		*10/26/2018 12:28*	WG1186927
(S) Toluene-d8	*103*			*75.0-131*		*10/28/2018 15:27*	WG1187558
(S) Dibromofluoromethane	*108*			*65.0-129*		*10/26/2018 12:28*	WG1186927
(S) Dibromofluoromethane	*85.9*			*65.0-129*		*10/28/2018 15:27*	WG1187558
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/26/2018 12:28*	WG1186927
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*10/28/2018 15:27*	WG1187558

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		10/25/2018 10:21:16 AM	WG1186274
Fluid	1		10/25/2018 10:21:16 AM	WG1186274
Initial pH	6.31		10/25/2018 10:21:16 AM	WG1186274
Final pH	4.89		10/25/2018 10:21:16 AM	WG1186274

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	Deg. F				
Ignitability	DNI at 170		1	10/26/2018 17:36	WG1186656

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	10/29/2018 16:18	WG1186793

Metals (ICP) by Method 6010C

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Arsenic	ND		0.100	5	1	10/27/2018 10:01	WG1186873
Barium	0.268		0.100	100	1	10/27/2018 10:01	WG1186873
Cadmium	ND		0.100	1	1	10/27/2018 10:01	WG1186873
Chromium	ND		0.100	5	1	10/27/2018 10:01	WG1186873
Lead	ND		0.100	5	1	10/27/2018 10:01	WG1186873
Selenium	ND		0.100	1	1	10/27/2018 10:01	WG1186873
Silver	ND		0.100	5	1	10/27/2018 10:01	WG1186873

Method Blank (MB)

(MB) R3354701-1 10/27/18 13:14

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1037317-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1037317-01 10/27/18 13:14 • (DUP) R3354701-3 10/27/18 13:14

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	89.6	88.2	1	1.59		10

Laboratory Control Sample (LCS)

(LCS) R3354701-2 10/27/18 13:14

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

Method Blank (MB)

(MB) R3355012-1 10/29/18 10:18

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1037322-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1037322-01 10/29/18 10:18 • (DUP) R3355012-3 10/29/18 10:18

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.4	87.1	1	0.871		10

Laboratory Control Sample (LCS)

(LCS) R3355012-2 10/29/18 10:18

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

L1037563-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1037563-04 10/25/18 12:06 • (DUP) R3353812-3 10/25/18 12:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.91	8.96	1	0.560		1

Sample Narrative:

OS: 8.91 at 18.2C

DUP: 8.96 at 18.2C

Laboratory Control Sample (LCS)

(LCS) R3353812-1 10/25/18 12:06

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 16.1C

L1037652-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1037652-01 10/26/18 17:36 • (DUP) R3354393-2 10/26/18 17:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170	DNI at 170	1	0.000		10

L1037795-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1037795-01 10/26/18 17:36 • (DUP) R3354393-3 10/26/18 17:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170	DNI at 170	1	0.000		10

Laboratory Control Sample (LCS)

(LCS) R3354393-1 10/26/18 17:36

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	Deg. F	Deg. F	%	%	
Ignitability	82.0	85.2	104	96.0-104	

Method Blank (MB)

(MB) R3354874-1 10/29/18 13:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.00330	0.0100

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

(LCS) R3354874-2 10/29/18 13:47 • (LCSD) R3354874-3 10/29/18 13:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0305	0.0301	102	100	80.0-120			1.12	20

L1037258-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037258-01 10/29/18 13:52 • (MS) R3354874-4 10/29/18 13:54 • (MSD) R3354874-5 10/29/18 13:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0280	0.0281	93.5	93.6	1	75.0-125			0.0955	20

L1037464-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037464-01 10/29/18 15:31 • (MS) R3354874-8 10/29/18 15:33 • (MSD) R3354874-9 10/29/18 15:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0298	0.0299	99.4	99.7	1	75.0-125			0.289	20

Method Blank (MB)

(MB) R3354403-1 10/27/18 09:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0330	0.100
Barium	U		0.0330	0.100
Cadmium	U		0.0330	0.100
Chromium	U		0.0330	0.100
Lead	U		0.0330	0.100
Selenium	U		0.0330	0.100
Silver	U		0.0330	0.100

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

(LCS) R3354403-2 10/27/18 09:20 • (LCSD) R3354403-3 10/27/18 09:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	10.2	10.2	102	102	80.0-120			0.204	20
Barium	10.0	10.0	10.1	100	101	80.0-120			1.21	20
Cadmium	10.0	10.1	10.2	101	102	80.0-120			0.732	20
Chromium	10.0	9.79	9.91	97.9	99.1	80.0-120			1.19	20
Lead	10.0	10.2	10.3	102	103	80.0-120			1.17	20
Selenium	10.0	10.4	10.5	104	105	80.0-120			0.558	20
Silver	2.00	1.93	1.96	96.6	98.2	80.0-120			1.69	20

L1037278-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037278-02 10/27/18 09:25 • (MS) R3354403-5 10/27/18 09:30 • (MSD) R3354403-6 10/27/18 09:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.3	10.4	103	104	1	75.0-125			1.55	20
Barium	10.0	1.55	11.4	11.6	98.5	101	1	75.0-125			1.85	20
Cadmium	10.0	ND	10.2	10.3	102	103	1	75.0-125			1.26	20
Chromium	10.0	ND	9.86	9.90	98.6	99.0	1	75.0-125			0.412	20
Lead	10.0	ND	10.3	10.4	103	104	1	75.0-125			1.25	20
Selenium	10.0	ND	10.4	10.6	104	106	1	75.0-125			1.44	20
Silver	2.00	ND	1.97	2.00	98.7	100	1	75.0-125			1.48	20

L1037464-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037464-01 10/27/18 09:35 • (MS) R3354403-7 10/27/18 09:37 • (MSD) R3354403-8 10/27/18 09:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.74	9.87	97.4	98.7	1	75.0-125			1.37	20
Barium	10.0	ND	10.1	10.2	100	102	1	75.0-125			1.46	20
Cadmium	10.0	ND	9.84	9.96	98.4	99.6	1	75.0-125			1.20	20
Chromium	10.0	ND	9.74	9.90	97.4	99.0	1	75.0-125			1.55	20
Lead	10.0	ND	9.95	10.0	99.5	100	1	75.0-125			0.785	20
Selenium	10.0	ND	9.80	9.91	98.0	99.1	1	75.0-125			1.08	20
Silver	2.00	ND	1.91	1.93	95.3	96.3	1	75.0-125			1.06	20

Method Blank (MB)

(MB) R3354494-2 10/26/18 11:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acrylonitrile	U		0.00190	0.0125
Benzene	U		0.000400	0.00100
Bromobenzene	U		0.00105	0.0125
Bromodichloromethane	U		0.000788	0.00250
Bromoform	U		0.00598	0.0250
Bromomethane	U		0.00370	0.0125
n-Butylbenzene	U		0.00384	0.0125
sec-Butylbenzene	U		0.00253	0.0125
tert-Butylbenzene	U		0.00155	0.00500
Carbon tetrachloride	U		0.00108	0.00500
Chlorobenzene	U		0.000573	0.00250
Chlorodibromomethane	U		0.000450	0.00250
Chloroethane	U		0.00108	0.00500
Chloroform	U		0.000415	0.00250
Chloromethane	U		0.00139	0.0125
2-Chlorotoluene	U		0.000920	0.00250
4-Chlorotoluene	U		0.00113	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250
1,2-Dibromoethane	U		0.000525	0.00250
Dibromomethane	U		0.00100	0.00500
1,2-Dichlorobenzene	U		0.00145	0.00500
1,3-Dichlorobenzene	U		0.00170	0.00500
1,4-Dichlorobenzene	U		0.00197	0.00500
Dichlorodifluoromethane	U		0.000818	0.00250
1,1-Dichloroethane	U		0.000575	0.00250
1,2-Dichloroethane	U		0.000475	0.00250
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
1,2-Dichloropropane	U		0.00127	0.00500
1,1-Dichloropropene	U		0.000700	0.00250
1,3-Dichloropropane	U		0.00175	0.00500
cis-1,3-Dichloropropene	U		0.000678	0.00250
trans-1,3-Dichloropropene	U		0.00153	0.00500
2,2-Dichloropropane	U		0.000793	0.00250
Di-isopropyl ether	U		0.000350	0.00100
Ethylbenzene	U		0.000530	0.00250
Hexachloro-1,3-butadiene	U		0.0127	0.0250
Isopropylbenzene	U		0.000863	0.00250
p-Isopropyltoluene	U		0.00233	0.00500

Method Blank (MB)

(MB) R3354494-2 10/26/18 11:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2-Butanone (MEK)	U		0.0125	0.0250
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250
Methyl tert-butyl ether	U		0.000295	0.00100
Naphthalene	U		0.00312	0.0125
n-Propylbenzene	U		0.00118	0.00500
Styrene	U		0.00273	0.0125
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250
Tetrachloroethene	U		0.000700	0.00250
Toluene	U		0.00125	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250
1,2,3-Trichlorobenzene	U		0.000625	0.00250
1,2,4-Trichlorobenzene	U		0.00482	0.0125
1,1,1-Trichloroethane	U		0.000275	0.00250
1,1,2-Trichloroethane	U		0.000883	0.00250
Trichloroethene	U		0.000400	0.00100
Trichlorofluoromethane	U		0.000500	0.00250
1,2,3-Trichloropropane	U		0.00510	0.0125
1,2,3-Trimethylbenzene	U		0.00115	0.00500
1,2,4-Trimethylbenzene	U		0.00116	0.00500
1,3,5-Trimethylbenzene	U		0.00108	0.00500
Vinyl chloride	U		0.000683	0.00250
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*100*			*75.0-131*
(S) Dibromofluoromethane	*111*			*65.0-129*
(S) 4-Bromofluorobenzene	*107*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3354494-1 10/26/18 10:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acrylonitrile	0.625	0.639	102	45.0-153	
Benzene	0.125	0.131	105	70.0-123	
Bromobenzene	0.125	0.135	108	73.0-121	
Bromodichloromethane	0.125	0.110	88.0	73.0-121	
Bromoform	0.125	0.131	104	64.0-132	
Bromomethane	0.125	0.124	99.3	56.0-147	

Laboratory Control Sample (LCS)

(LCS) R3354494-1 10/26/18 10:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
n-Butylbenzene	0.125	0.131	105	68.0-135	
sec-Butylbenzene	0.125	0.137	110	74.0-130	
tert-Butylbenzene	0.125	0.121	97.1	75.0-127	
Carbon tetrachloride	0.125	0.122	97.8	66.0-128	
Chlorobenzene	0.125	0.128	102	76.0-128	
Chlorodibromomethane	0.125	0.131	105	74.0-127	
Chloroethane	0.125	0.151	121	61.0-134	
Chloroform	0.125	0.148	118	72.0-123	
Chloromethane	0.125	0.137	110	51.0-138	
2-Chlorotoluene	0.125	0.145	116	75.0-124	
4-Chlorotoluene	0.125	0.139	111	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.145	116	59.0-130	
1,2-Dibromoethane	0.125	0.126	101	74.0-128	
Dibromomethane	0.125	0.135	108	75.0-122	
1,2-Dichlorobenzene	0.125	0.127	102	76.0-124	
1,3-Dichlorobenzene	0.125	0.133	106	76.0-125	
1,4-Dichlorobenzene	0.125	0.122	97.8	77.0-121	
Dichlorodifluoromethane	0.125	0.151	121	43.0-156	
1,1-Dichloroethane	0.125	0.158	127	70.0-127	
1,2-Dichloroethane	0.125	0.130	104	65.0-131	
1,1-Dichloroethene	0.125	0.144	115	65.0-131	
cis-1,2-Dichloroethene	0.125	0.140	112	73.0-125	
trans-1,2-Dichloroethene	0.125	0.128	102	71.0-125	
1,2-Dichloropropane	0.125	0.146	117	74.0-125	
1,1-Dichloropropene	0.125	0.172	137	73.0-125	J4
1,3-Dichloropropane	0.125	0.123	98.5	80.0-125	
cis-1,3-Dichloropropene	0.125	0.120	96.2	76.0-127	
trans-1,3-Dichloropropene	0.125	0.147	118	73.0-127	
2,2-Dichloropropane	0.125	0.168	135	59.0-135	
Di-isopropyl ether	0.125	0.154	123	60.0-136	
Ethylbenzene	0.125	0.131	105	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.120	96.0	57.0-150	
Isopropylbenzene	0.125	0.126	101	72.0-127	
p-Isopropyltoluene	0.125	0.137	110	72.0-133	
2-Butanone (MEK)	0.625	0.827	132	30.0-160	
Methylene Chloride	0.125	0.0987	79.0	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.836	134	56.0-143	
Methyl tert-butyl ether	0.125	0.148	118	66.0-132	
Naphthalene	0.125	0.143	114	59.0-130	
n-Propylbenzene	0.125	0.132	106	74.0-126	

Laboratory Control Sample (LCS)

(LCS) R3354494-1 10/26/18 10:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Styrene	0.125	0.146	117	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.128	103	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.149	119	68.0-128	
Tetrachloroethene	0.125	0.118	94.7	70.0-136	
Toluene	0.125	0.124	99.3	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.159	127	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.112	89.4	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.132	106	62.0-137	
1,1,1-Trichloroethane	0.125	0.156	125	69.0-126	
1,1,2-Trichloroethane	0.125	0.137	110	78.0-123	
Trichloroethene	0.125	0.120	96.1	76.0-126	
Trichlorofluoromethane	0.125	0.158	126	61.0-142	
1,2,3-Trichloropropane	0.125	0.148	118	67.0-129	
1,2,3-Trimethylbenzene	0.125	0.131	104	74.0-124	
1,2,4-Trimethylbenzene	0.125	0.140	112	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.132	106	73.0-127	
Vinyl chloride	0.125	0.124	99.2	63.0-134	
Xylenes, Total	0.375	0.400	107	72.0-127	
(S) Toluene-d8			*98.0*	*75.0-131*	
(S) Dibromofluoromethane			*112*	*65.0-129*	
(S) 4-Bromofluorobenzene			*103*	*67.0-138*	

L1037317-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037317-01 10/26/18 14:57 • (MS) R3354494-3 10/26/18 18:39 • (MSD) R3354494-4 10/26/18 18:57

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acrylonitrile	0.625	U			109	124	1.06	10.0-160			13.3	40
Benzene	0.125	0.00536			52.3	99.3	1.06	10.0-149		J3	59.2	37
Bromobenzene	0.125	U			76.8	107	1.06	10.0-156			33.1	38
Bromodichloromethane	0.125	U			64.3	89.5	1.06	10.0-143			32.8	37
Bromoform	0.125	U			83.3	97.3	1.06	10.0-146			15.5	36
Bromomethane	0.125	U			35.5	73.0	1.06	10.0-149		J3	69.1	38
n-Butylbenzene	0.125	0.0141			41.5	102	1.06	10.0-160		J3	74.0	40
sec-Butylbenzene	0.125	U			49.0	116	1.06	10.0-159		J3	80.9	39
tert-Butylbenzene	0.125	U			47.0	104	1.06	10.0-156		J3	75.8	39
Carbon tetrachloride	0.125	U			30.7	90.4	1.06	10.0-145		J3	98.6	37
Chlorobenzene	0.125	U			65.8	107	1.06	10.0-152		J3	47.5	39
Chlorodibromomethane	0.125	U			84.9	102	1.06	10.0-146			18.7	37

L1037317-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037317-01 10/26/18 14:57 • (MS) R3354494-3 10/26/18 18:39 • (MSD) R3354494-4 10/26/18 18:57

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloroethane	0.125	U			27.1	79.9	1.06	10.0-146		J3	98.5	40
Chloroform	0.125	U			65.1	111	1.06	10.0-146		J3	52.0	37
Chloromethane	0.125	U			44.7	114	1.06	10.0-159		J3	87.5	37
2-Chlorotoluene	0.125	U			71.1	118	1.06	10.0-159		J3	49.3	38
4-Chlorotoluene	0.125	U			63.5	108	1.06	10.0-155		J3	52.0	39
1,2-Dibromo-3-Chloropropane	0.125	U			70.7	79.3	1.06	10.0-151			11.5	39
1,2-Dibromoethane	0.125	U			86.1	96.9	1.06	10.0-148			11.8	34
Dibromomethane	0.125	U			81.2	96.9	1.06	10.0-147			17.7	35
1,2-Dichlorobenzene	0.125	U			77.9	97.9	1.06	10.0-155			22.8	37
1,3-Dichlorobenzene	0.125	U			74.7	105	1.06	10.0-153			33.4	38
1,4-Dichlorobenzene	0.125	U			71.4	97.7	1.06	10.0-151			31.1	38
Dichlorodifluoromethane	0.125	U			28.9	143	1.06	10.0-160		J3	133	35
1,1-Dichloroethane	0.125	U			62.8	121	1.06	10.0-147		J3	63.0	37
1,2-Dichloroethane	0.125	U			78.2	94.0	1.06	10.0-148			18.4	35
1,1-Dichloroethene	0.125	U			35.0	109	1.06	10.0-155		J3	103	37
cis-1,2-Dichloroethene	0.125	U			59.0	105	1.06	10.0-149		J3	55.8	37
trans-1,2-Dichloroethene	0.125	U			41.1	90.7	1.06	10.0-150		J3	75.3	37
1,2-Dichloropropane	0.125	U			78.0	120	1.06	10.0-148		J3	42.7	37
1,1-Dichloropropene	0.125	U			44.9	128	1.06	10.0-153		J3	95.8	35
1,3-Dichloropropane	0.125	U			83.8	99.1	1.06	10.0-154			16.7	35
cis-1,3-Dichloropropene	0.125	U			68.7	92.8	1.06	10.0-151			29.9	37
trans-1,3-Dichloropropene	0.125	U			85.4	108	1.06	10.0-148			23.5	37
2,2-Dichloropropane	0.125	U			35.0	86.4	1.06	10.0-138		J3	84.6	36
Di-isopropyl ether	0.125	U			80.6	114	1.06	10.0-147			34.7	36
Ethylbenzene	0.125	0.0843			0.000	51.1	1.06	10.0-160	J6	J3	65.7	38
Hexachloro-1,3-butadiene	0.125	U			45.3	97.1	1.06	10.0-160		J3	72.8	40
Isopropylbenzene	0.125	0.0167			36.8	91.0	1.06	10.0-155		J3	72.1	38
p-Isopropyltoluene	0.125	U			52.4	108	1.06	10.0-160		J3	69.7	40
2-Butanone (MEK)	0.625	U			131	44.6	1.06	10.0-160		J3	98.1	40
Methylene Chloride	0.125	U			75.0	109	1.06	10.0-141			36.6	37
4-Methyl-2-pentanone (MIBK)	0.625	U			93.0	104	1.06	10.0-160			10.9	35
Methyl tert-butyl ether	0.125	U			81.3	91.7	1.06	11.0-147			12.0	35
Naphthalene	0.125	0.123			4.53	13.1	1.06	10.0-160	J6		9.31	36
n-Propylbenzene	0.125	0.0813			0.000	49.9	1.06	10.0-158	J6	J3	72.6	38
Styrene	0.125	U			83.0	124	1.06	10.0-160			39.8	40
1,1,1,2-Tetrachloroethane	0.125	U			70.8	101	1.06	10.0-149			35.6	39
1,1,2,2-Tetrachloroethane	0.125	U			103	109	1.06	10.0-160			6.11	35
Tetrachloroethene	0.125	U			35.5	96.9	1.06	10.0-156		J3	92.8	39
Toluene	0.125	0.127			0.000	46.7	1.06	10.0-156	J6	J3	46.5	38

L1037317-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037317-01 10/26/18 14:57 • (MS) R3354494-3 10/26/18 18:39 • (MSD) R3354494-4 10/26/18 18:57

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg			%	%		%			%	%
1,1,2-Trichlorotrifluoroethane	0.125	U			27.2	111	1.06	10.0-160		J3	121	36
1,2,3-Trichlorobenzene	0.125	U			73.0	88.5	1.06	10.0-160			19.1	40
1,2,4-Trichlorobenzene	0.125	U			84.0	104	1.06	10.0-160			21.2	40
1,1,1-Trichloroethane	0.125	U			44.1	117	1.06	10.0-144		J3	90.4	35
1,1,2-Trichloroethane	0.125	U			93.5	113	1.06	10.0-160			18.8	35
Trichloroethene	0.125	U			41.6	93.3	1.06	10.0-156		J3	76.6	38
Trichlorofluoromethane	0.125	U			80.0	321	1.06	10.0-160		J3 J5	120	40
1,2,3-Trichloropropane	0.125	U			94.2	94.9	1.06	10.0-156			0.713	35
1,2,3-Trimethylbenzene	0.125	0.143			0.000	0.476	1.06	10.0-160	J6	J6	35.6	36
1,2,4-Trimethylbenzene	0.125	0.612			0.000	0.000	1.06	10.0-160	V	J3 V	48.2	36
1,3,5-Trimethylbenzene	0.125	0.146			0.000	8.92	1.06	10.0-160	J6	J3 J6	60.5	38
Vinyl chloride	0.125	U			37.7	125	1.06	10.0-160		J3	107	37
Xylenes, Total	0.375	0.573			0.000	0.000	1.06	10.0-160	J6	J3 J6	57.5	38
(S) Toluene-d8					*99.8*	*102*		*75.0-131*				
(S) Dibromofluoromethane					*109*	*105*		*65.0-129*				
(S) 4-Bromofluorobenzene					*107*	*106*		*67.0-138*				

Method Blank (MB)

(MB) R3354686-3 10/28/18 08:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0137	0.0250
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Isopropylbenzene	U		0.000863	0.00250
Naphthalene	U		0.00312	0.0125
n-Propylbenzene	U		0.00118	0.00500
Toluene	U		0.00125	0.00500
1,2,3-Trimethylbenzene	U		0.00115	0.00500
1,2,4-Trimethylbenzene	U		0.00116	0.00500
1,3,5-Trimethylbenzene	U		0.00108	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*104*			*75.0-131*
(S) Dibromofluoromethane	*89.4*			*65.0-129*
(S) 4-Bromofluorobenzene	*102*			*67.0-138*

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

(LCS) R3354686-1 10/28/18 07:17 • (LCSD) R3354686-2 10/28/18 07:37

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	0.625	0.479	0.492	76.6	78.8	10.0-160			2.75	31
Benzene	0.125	0.115	0.116	91.7	92.8	70.0-123			1.24	20
Ethylbenzene	0.125	0.0980	0.101	78.4	80.8	74.0-126			3.07	20
Isopropylbenzene	0.125	0.0980	0.0924	78.4	73.9	72.0-127			5.87	20
Naphthalene	0.125	0.111	0.107	89.1	85.6	59.0-130			3.94	20
n-Propylbenzene	0.125	0.113	0.106	90.3	84.7	74.0-126			6.41	20
Toluene	0.125	0.113	0.112	90.7	89.8	75.0-121			0.963	20
1,2,3-Trimethylbenzene	0.125	0.113	0.105	90.0	84.4	74.0-124			6.51	20
1,2,4-Trimethylbenzene	0.125	0.106	0.101	85.0	80.6	70.0-126			5.39	20
1,3,5-Trimethylbenzene	0.125	0.0998	0.0917	79.9	73.4	73.0-127			8.48	20
Xylenes, Total	0.375	0.298	0.303	79.5	80.8	72.0-127			1.66	20
(S) Toluene-d8				*98.1*	*98.0*	*75.0-131*				
(S) Dibromofluoromethane				*102*	*102*	*65.0-129*				
(S) 4-Bromofluorobenzene				*103*	*102*	*67.0-138*				

Method Blank (MB)

(MB) R3354612-1 10/28/18 10:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
AK102 DRO C10-C25	U		5.10	20.0
(S) o-Terphenyl	*74.3*			*50.0-150*

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

(LCS) R3354612-2 10/28/18 10:45 • (LCSD) R3354612-3 10/28/18 10:58

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 %
AK102 DRO C10-C25	100	77.2	68.4	77.2	68.4	75.0-125		J4	12.1	20
(S) o-Terphenyl				*94.0*	*75.9*	*50.0-150*				

L1037324-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037324-01 10/28/18 13:17 • (MS) R3354612-4 10/28/18 13:30 • (MSD) R3354612-5 10/28/18 13:43

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 %
AK102 DRO C10-C25	100	U	69.0	64.5	69.0	64.5	1	75.0-125	J6	J6	6.74	20
(S) o-Terphenyl					*65.3*	*64.7*		*50.0-150*				

Sample Narrative:

OS: Duplicate analysis was performed.

Method Blank (MB)

(MB) R3354419-1 10/26/18 13:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	*102*			*10.0-135*
(S) Tetrachloro-m-xylene	*100*			*10.0-139*

Method Blank (MB)

(MB) R3354457-1 10/26/18 15:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	*104*			*10.0-135*
(S) Tetrachloro-m-xylene	*98.5*			*10.0-139*

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

(LCS) R3354457-2 10/26/18 20:18 • (LCSD) R3354457-3 10/26/18 20:31

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 %
PCB 1260	0.167	0.0576	0.0496	34.5	29.7	37.0-145	J4	J4	14.9	37
PCB 1016	0.167	0.0577	0.0479	34.6	28.7	36.0-141	J4	J4	18.6	35
(S) Decachlorobiphenyl				*62.6*	*40.8*	*10.0-135*				
(S) Tetrachloro-m-xylene				*55.4*	*43.8*	*10.0-139*				

Method Blank (MB)

(MB) R3354609-2 10/28/18 04:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	*94.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*109*			*34.0-125*
(S) p-Terphenyl-d14	*116*			*23.0-120*

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

(LCS) R3354609-3 10/28/18 06:39 • (LCSD) R3354609-1 10/28/18 04:31

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 %
Anthracene	0.0800	0.0606	0.0830	75.8	104	50.0-126		J3	31.2	20
Acenaphthene	0.0800	0.0635	0.0883	79.4	110	50.0-120		J3	32.7	20
Acenaphthylene	0.0800	0.0628	0.0860	78.5	108	50.0-120		J3	31.2	20
Benzo(a)anthracene	0.0800	0.0570	0.0811	71.3	101	45.0-120		J3	34.9	20
Benzo(a)pyrene	0.0800	0.0445	0.0614	55.6	76.8	42.0-120		J3	31.9	20
Benzo(b)fluoranthene	0.0800	0.0505	0.0736	63.1	92.0	42.0-121		J3	37.2	20
Benzo(g,h,i)perylene	0.0800	0.0529	0.0770	66.1	96.3	45.0-125		J3	37.1	20
Benzo(k)fluoranthene	0.0800	0.0652	0.0952	81.5	119	49.0-125		J3	37.4	20
Chrysene	0.0800	0.0675	0.0961	84.4	120	49.0-122		J3	35.0	20
Dibenz(a,h)anthracene	0.0800	0.0567	0.0833	70.9	104	47.0-125		J3	38.0	20
Fluoranthene	0.0800	0.0653	0.0905	81.6	113	49.0-129		J3	32.3	20

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

(LCS) R3354609-3 10/28/18 06:39 • (LCSD) R3354609-1 10/28/18 04:31

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 %
Fluorene	0.0800	0.0638	0.0892	79.8	112	49.0-120		J3	33.2	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0560	0.0824	70.0	103	46.0-125		J3	38.2	20
Naphthalene	0.0800	0.0631	0.0839	78.9	105	50.0-120		J3	28.3	20
Phenanthrene	0.0800	0.0646	0.0905	80.7	113	47.0-120		J3	33.4	20
Pyrene	0.0800	0.0591	0.0843	73.9	105	43.0-123		J3	35.1	20
1-Methylnaphthalene	0.0800	0.0760	0.105	95.0	131	51.0-121		J3 J4	32.0	20
2-Methylnaphthalene	0.0800	0.0678	0.0933	84.8	117	50.0-120		J3	31.7	20
2-Chloronaphthalene	0.0800	0.0627	0.0879	78.4	110	50.0-120		J3	33.5	20
(S) Nitrobenzene-d5				*77.3*	*108*	*14.0-149*				
(S) 2-Fluorobiphenyl				*82.3*	*117*	*34.0-125*				
(S) p-Terphenyl-d14				*81.8*	*119*	*23.0-120*				

L1037758-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037758-02 10/28/18 05:55 • (MS) R3354609-4 10/28/18 12:09 • (MSD) R3354609-5 10/28/18 12:30

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.106	ND	0.120	0.116	114	107	1	10.0-145			3.83	30
Acenaphthene	0.106	ND	0.117	0.113	110	104	1	14.0-127			3.46	27
Acenaphthylene	0.106	ND	0.117	0.113	110	104	1	21.0-124			3.23	25
Benzo(a)anthracene	0.106	ND	0.115	0.104	109	96.0	1	10.0-139			9.76	30
Benzo(a)pyrene	0.106	ND	0.103	0.0944	97.0	86.9	1	10.0-141			8.49	31
Benzo(b)fluoranthene	0.106	ND	0.0995	0.0841	93.9	77.4	1	10.0-140			16.7	36
Benzo(g,h,i)perylene	0.106	ND	0.110	0.0992	104	91.3	1	10.0-140			10.6	33
Benzo(k)fluoranthene	0.106	ND	0.105	0.104	98.8	95.5	1	10.0-137			0.922	31
Chrysene	0.106	ND	0.123	0.114	116	105	1	10.0-145			7.51	30
Dibenz(a,h)anthracene	0.106	ND	0.113	0.101	107	93.3	1	10.0-132			10.9	31
Fluoranthene	0.106	ND	0.125	0.117	118	107	1	10.0-153			6.60	33
Fluorene	0.106	ND	0.118	0.112	112	103	1	11.0-130			5.37	29
Indeno(1,2,3-cd)pyrene	0.106	ND	0.111	0.101	105	92.6	1	10.0-137			9.98	32
Naphthalene	0.106	ND	0.116	0.112	110	103	1	10.0-135			3.60	27
Phenanthrene	0.106	ND	0.121	0.113	114	104	1	10.0-144			6.21	31
Pyrene	0.106	ND	0.113	0.106	107	97.1	1	10.0-148			7.15	35
1-Methylnaphthalene	0.106	ND	0.139	0.135	131	124	1	10.0-142			2.91	28
2-Methylnaphthalene	0.106	ND	0.125	0.120	118	111	1	10.0-137			4.25	28
2-Chloronaphthalene	0.106	ND	0.119	0.115	112	105	1	29.0-120			3.76	24
(S) Nitrobenzene-d5					*98.6*	*98.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*111*	*107*		*34.0-125*				
(S) p-Terphenyl-d14					*116*	*116*		*23.0-120*				

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

(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.
ND	Not detected at the Reporting Limit (or MDL where applicable).
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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

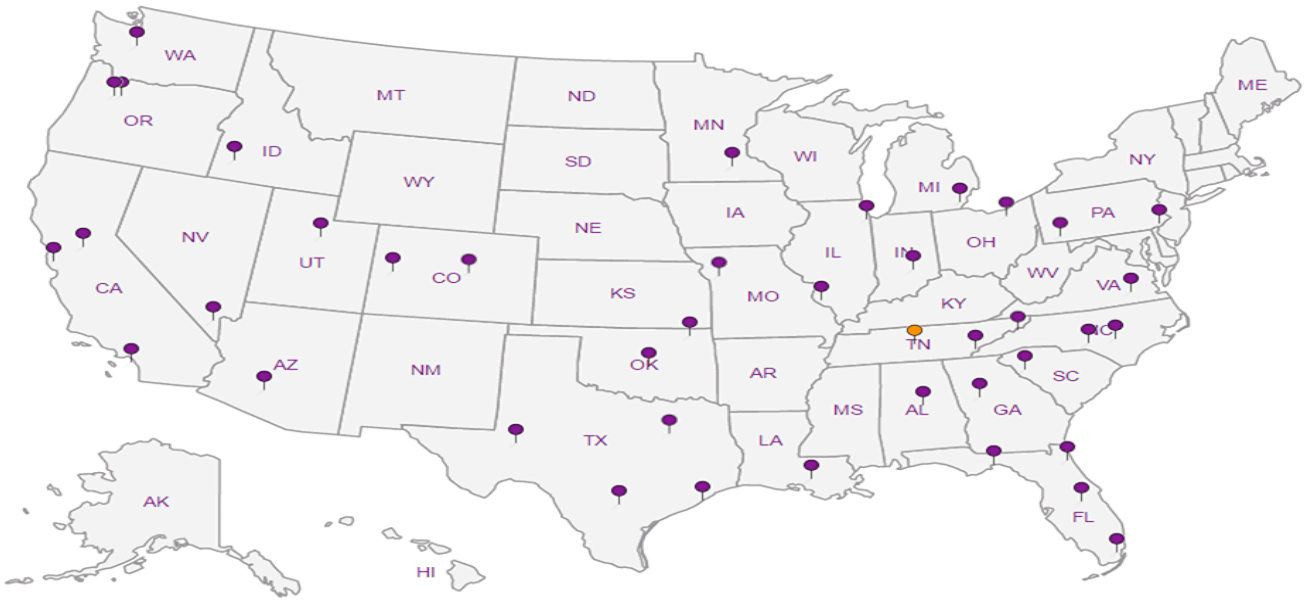
Third Party Federal Accreditations

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

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

Our Locations

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



Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Pres Chk

Report to: Cyrus Gorman

Email To: cyrus.gorman@stantec.com; collin.macheel@stantec.com

Project Description:

City/State Collected: Anchorage, AK

Phone: 206-494-5029
Fax: 425-869-1190

Client Project # 185750590

Lab Project # STANTECBWA-AK

Collected by (print): Drew Beard

Site/Facility ID # 726TH E 12 AVE

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N___ Y X

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

L# 1037317

E114

Acctnum: STANTECBWA
Template: T141751
Prelogin: P676584
TSR: 110 - Brian Ford
PB: TB 10-11-18
Shipped Via: FedEX 2nd Day

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK102 4oz Clr-NoPres	Ignitibility 4oz Clr-NoPres	MRCRA8 Metals 4oz Clr-NoPres	PAHs SV8270PAHSIMD 4oz Clr-NoPres	PCBs SV8082 4oz Clr-NoPres	TCLP RCRA8 Metals 8oz Clr-NoPres	pH 2oz Clr-NoPres / VOC (8026) amber MeOH pres	water AK102 100ml Amb HCl	water PAH 8270SIMD 100ml Amb-NoPres	water VOCs V8260C 40ml Amb-HCl	Remark:	Sample # (lab only)
GP-9-0.5	G	SS	0.5	10/19/18	09:30	4	X			X			X					01
GP-9-10		SS	10		09:40	4	X			X			X					02
GP-8-0.5		SS	0.5		11:40	4	X			X			X					03
GP-8-10		SS	10		11:50	4	X			X			X					04
GP-7-0.5		SS	0.5		14:00	4	X			X			X					05
GP-7-10		SS	0.5		14:20	4	X			X			X					06
IDW	COMP	SS	—	10/19/18	14:30	3		X			X	X	X				PH(9045C)	07 / 09
TRIP BLANK	—	SS	—	10/19/18	08:00	2							X					08
		SS																
		SS																

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

Remarks:

HAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 4452 6231 4490 4504

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	10/20/18	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.7-3-0.1 °C Bottles Received: 29
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) 801	Date: 10/23/18 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

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ANALYTICAL REPORT

November 05, 2018

Stantec- Bellevue, WA

Sample Delivery Group:	L1038850
Samples Received:	10/27/2018
Project Number:	185750590
Description:	
Site:	726TH E 12 AVE
Report To:	Cyrus Gorman 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004

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.

TABLE OF CONTENTS

GP-9 L1038850-01 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 20:22	10/29/18 20:22	PP

GP-8 L1038850-02 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 20:41	10/29/18 20:41	PP

GP-7 L1038850-03 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 21:01	10/29/18 21:01	PP

GP-6 L1038850-04 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 21:21	10/29/18 21:21	PP

GP-6-DUP L1038850-05 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 21:41	10/29/18 21:41	PP

GP-5 L1038850-06 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1189757	1	11/01/18 16:18	11/01/18 16:18	JCP

IDW-WATER L1038850-07 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 22:20	10/29/18 22:20	PP
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1184654	1	11/02/18 22:59	11/04/18 20:35	TH
Semi Volatile Organic Compounds (GC/MS) by Method 8270 D-SIM	WG1188052	1	10/30/18 22:20	11/02/18 13:08	CJR

TRIPBLANK L1038850-08 GW

Collected by: Drew Beard | Collected date/time: 10/23/18 14:05 | Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188101	1	10/29/18 17:43	10/29/18 17:43	PP

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

Jared Starkey
Project Manager

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

The associated batch QC was above the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG1188101	(LCS) R3356589-1, (LCSD) R3356589-2, L1038850-01, 02, 03, 04, 05, 07, 08	2,2-Dichloropropane

Semi Volatile Organic Compounds (GC/MS) by Method 8270 D-SIM

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG1188052	Naphthalene	L1038850-07

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 20:22	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 20:22	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 20:22	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 20:22	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 20:22	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 20:22	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 20:22	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 20:22	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 20:22	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 20:22	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 20:22	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 20:22	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 20:22	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 20:22	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 20:22	WG1188101
Chloroform	1.11	J	0.324	5.00	1	10/29/2018 20:22	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 20:22	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 20:22	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 20:22	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 20:22	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 20:22	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 20:22	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 20:22	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 20:22	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 20:22	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 20:22	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 20:22	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 20:22	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 20:22	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 20:22	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 20:22	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 20:22	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 20:22	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 20:22	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 20:22	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 20:22	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 20:22	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 20:22	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 20:22	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 20:22	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 20:22	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 20:22	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 20:22	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 20:22	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 20:22	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 20:22	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 20:22	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 20:22	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 20:22	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 20:22	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 20:22	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 20:22	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 20:22	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 20:22	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 20:22	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 20:22	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 20:22	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 20:22	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 20:22	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 20:22	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 20:22	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 20:22	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 20:22	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 20:22	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 20:22	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 20:22	WG1188101
(S) Toluene-d8	*96.0*			*80.0-120*		*10/29/2018 20:22*	WG1188101
(S) Dibromofluoromethane	*103*			*75.0-120*		*10/29/2018 20:22*	WG1188101
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*10/29/2018 20:22*	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 20:41	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 20:41	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 20:41	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 20:41	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 20:41	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 20:41	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 20:41	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 20:41	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 20:41	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 20:41	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 20:41	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 20:41	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 20:41	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 20:41	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 20:41	WG1188101
Chloroform	0.932	J	0.324	5.00	1	10/29/2018 20:41	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 20:41	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 20:41	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 20:41	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 20:41	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 20:41	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 20:41	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 20:41	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 20:41	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 20:41	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 20:41	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 20:41	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 20:41	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 20:41	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 20:41	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 20:41	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 20:41	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 20:41	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 20:41	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 20:41	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 20:41	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 20:41	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 20:41	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 20:41	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 20:41	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 20:41	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 20:41	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 20:41	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 20:41	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 20:41	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 20:41	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 20:41	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 20:41	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 20:41	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 20:41	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 20:41	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 20:41	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 20:41	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 20:41	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 20:41	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 20:41	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 20:41	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 20:41	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 20:41	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 20:41	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 20:41	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 20:41	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 20:41	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 20:41	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 20:41	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 20:41	WG1188101
(S) Toluene-d8	*99.6*			*80.0-120*		*10/29/2018 20:41*	WG1188101
(S) Dibromofluoromethane	*103*			*75.0-120*		*10/29/2018 20:41*	WG1188101
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/29/2018 20:41*	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 21:01	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 21:01	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 21:01	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 21:01	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 21:01	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 21:01	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 21:01	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 21:01	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 21:01	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 21:01	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 21:01	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 21:01	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 21:01	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 21:01	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 21:01	WG1188101
Chloroform	1.25	J	0.324	5.00	1	10/29/2018 21:01	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 21:01	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 21:01	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 21:01	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 21:01	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 21:01	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 21:01	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 21:01	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 21:01	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 21:01	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 21:01	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 21:01	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 21:01	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 21:01	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 21:01	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 21:01	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 21:01	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 21:01	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 21:01	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 21:01	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 21:01	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 21:01	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 21:01	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 21:01	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 21:01	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 21:01	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 21:01	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 21:01	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 21:01	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 21:01	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 21:01	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 21:01	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 21:01	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 21:01	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 21:01	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 21:01	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 21:01	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 21:01	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 21:01	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 21:01	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 21:01	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 21:01	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 21:01	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 21:01	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 21:01	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 21:01	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 21:01	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 21:01	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 21:01	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 21:01	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 21:01	WG1188101
(S) Toluene-d8	*99.2*			*80.0-120*		*10/29/2018 21:01*	WG1188101
(S) Dibromofluoromethane	*101*			*75.0-120*		*10/29/2018 21:01*	WG1188101
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*10/29/2018 21:01*	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 21:21	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 21:21	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 21:21	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 21:21	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 21:21	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 21:21	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 21:21	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 21:21	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 21:21	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 21:21	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 21:21	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 21:21	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 21:21	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 21:21	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 21:21	WG1188101
Chloroform	0.622	J	0.324	5.00	1	10/29/2018 21:21	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 21:21	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 21:21	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 21:21	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 21:21	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 21:21	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 21:21	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 21:21	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 21:21	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 21:21	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 21:21	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 21:21	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 21:21	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 21:21	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 21:21	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 21:21	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 21:21	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 21:21	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 21:21	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 21:21	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 21:21	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 21:21	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 21:21	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 21:21	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 21:21	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 21:21	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 21:21	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 21:21	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 21:21	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 21:21	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 21:21	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 21:21	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 21:21	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 21:21	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 21:21	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 21:21	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 21:21	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 21:21	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 21:21	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 21:21	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 21:21	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 21:21	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 21:21	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 21:21	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 21:21	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 21:21	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 21:21	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 21:21	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 21:21	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 21:21	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 21:21	WG1188101
(S) Toluene-d8	*96.2*			*80.0-120*		*10/29/2018 21:21*	WG1188101
(S) Dibromofluoromethane	*101*			*75.0-120*		*10/29/2018 21:21*	WG1188101
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/29/2018 21:21*	WG1188101

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	U		10.0	50.0	1	10/29/2018 21:41	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 21:41	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 21:41	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 21:41	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 21:41	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 21:41	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 21:41	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 21:41	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 21:41	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 21:41	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 21:41	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 21:41	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 21:41	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 21:41	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 21:41	WG1188101
Chloroform	0.606	J	0.324	5.00	1	10/29/2018 21:41	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 21:41	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 21:41	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 21:41	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 21:41	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 21:41	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 21:41	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 21:41	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 21:41	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 21:41	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 21:41	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 21:41	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 21:41	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 21:41	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 21:41	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 21:41	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 21:41	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 21:41	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 21:41	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 21:41	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 21:41	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 21:41	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 21:41	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 21:41	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 21:41	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 21:41	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 21:41	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 21:41	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 21:41	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 21:41	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 21:41	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 21:41	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 21:41	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 21:41	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 21:41	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 21:41	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 21:41	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 21:41	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 21:41	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 21:41	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 21:41	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 21:41	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 21:41	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 21:41	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 21:41	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 21:41	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 21:41	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 21:41	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 21:41	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 21:41	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 21:41	WG1188101
(S) Toluene-d8	*97.1*			*80.0-120*		*10/29/2018 21:41*	WG1188101
(S) Dibromofluoromethane	*99.9*			*75.0-120*		*10/29/2018 21:41*	WG1188101
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*10/29/2018 21:41*	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	11/01/2018 16:18	WG1189757
Acrolein	U		8.87	50.0	1	11/01/2018 16:18	WG1189757
Acrylonitrile	U		1.87	10.0	1	11/01/2018 16:18	WG1189757
Benzene	U		0.331	1.00	1	11/01/2018 16:18	WG1189757
Bromobenzene	U		0.352	1.00	1	11/01/2018 16:18	WG1189757
Bromodichloromethane	U		0.380	1.00	1	11/01/2018 16:18	WG1189757
Bromoform	U		0.469	1.00	1	11/01/2018 16:18	WG1189757
Bromomethane	U	J0	0.866	5.00	1	11/01/2018 16:18	WG1189757
n-Butylbenzene	U		0.361	1.00	1	11/01/2018 16:18	WG1189757
sec-Butylbenzene	U		0.365	1.00	1	11/01/2018 16:18	WG1189757
tert-Butylbenzene	U		0.399	1.00	1	11/01/2018 16:18	WG1189757
Carbon tetrachloride	U		0.379	1.00	1	11/01/2018 16:18	WG1189757
Chlorobenzene	U		0.348	1.00	1	11/01/2018 16:18	WG1189757
Chlorodibromomethane	U		0.327	1.00	1	11/01/2018 16:18	WG1189757
Chloroethane	U	J0	0.453	5.00	1	11/01/2018 16:18	WG1189757
Chloroform	U		0.324	5.00	1	11/01/2018 16:18	WG1189757
Chloromethane	U		0.276	2.50	1	11/01/2018 16:18	WG1189757
2-Chlorotoluene	U		0.375	1.00	1	11/01/2018 16:18	WG1189757
4-Chlorotoluene	U		0.351	1.00	1	11/01/2018 16:18	WG1189757
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	11/01/2018 16:18	WG1189757
1,2-Dibromoethane	U		0.381	1.00	1	11/01/2018 16:18	WG1189757
Dibromomethane	U		0.346	1.00	1	11/01/2018 16:18	WG1189757
1,2-Dichlorobenzene	U		0.349	1.00	1	11/01/2018 16:18	WG1189757
1,3-Dichlorobenzene	U		0.220	1.00	1	11/01/2018 16:18	WG1189757
1,4-Dichlorobenzene	U		0.274	1.00	1	11/01/2018 16:18	WG1189757
Dichlorodifluoromethane	U		0.551	5.00	1	11/01/2018 16:18	WG1189757
1,1-Dichloroethane	U		0.259	1.00	1	11/01/2018 16:18	WG1189757
1,2-Dichloroethane	U		0.361	1.00	1	11/01/2018 16:18	WG1189757
1,1-Dichloroethene	U		0.398	1.00	1	11/01/2018 16:18	WG1189757
cis-1,2-Dichloroethene	U		0.260	1.00	1	11/01/2018 16:18	WG1189757
trans-1,2-Dichloroethene	U		0.396	1.00	1	11/01/2018 16:18	WG1189757
1,2-Dichloropropane	U		0.306	1.00	1	11/01/2018 16:18	WG1189757
1,1-Dichloropropene	U		0.352	1.00	1	11/01/2018 16:18	WG1189757
1,3-Dichloropropane	U		0.366	1.00	1	11/01/2018 16:18	WG1189757
cis-1,3-Dichloropropene	U		0.418	1.00	1	11/01/2018 16:18	WG1189757
trans-1,3-Dichloropropene	U		0.419	1.00	1	11/01/2018 16:18	WG1189757
2,2-Dichloropropane	U		0.321	1.00	1	11/01/2018 16:18	WG1189757
Di-isopropyl ether	U		0.320	1.00	1	11/01/2018 16:18	WG1189757
Ethylbenzene	U		0.384	1.00	1	11/01/2018 16:18	WG1189757
Hexachloro-1,3-butadiene	U		0.256	1.00	1	11/01/2018 16:18	WG1189757
Isopropylbenzene	U		0.326	1.00	1	11/01/2018 16:18	WG1189757
p-Isopropyltoluene	0.485	J	0.350	1.00	1	11/01/2018 16:18	WG1189757
2-Butanone (MEK)	U		3.93	10.0	1	11/01/2018 16:18	WG1189757
Methylene Chloride	U		1.00	5.00	1	11/01/2018 16:18	WG1189757
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	11/01/2018 16:18	WG1189757
Methyl tert-butyl ether	U		0.367	1.00	1	11/01/2018 16:18	WG1189757
Naphthalene	U		1.00	5.00	1	11/01/2018 16:18	WG1189757
n-Propylbenzene	U		0.349	1.00	1	11/01/2018 16:18	WG1189757
Styrene	U		0.307	1.00	1	11/01/2018 16:18	WG1189757
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	11/01/2018 16:18	WG1189757
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	11/01/2018 16:18	WG1189757
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	11/01/2018 16:18	WG1189757
Tetrachloroethene	U		0.372	1.00	1	11/01/2018 16:18	WG1189757
Toluene	U		0.412	1.00	1	11/01/2018 16:18	WG1189757
1,2,3-Trichlorobenzene	U	J0	0.230	1.00	1	11/01/2018 16:18	WG1189757
1,2,4-Trichlorobenzene	U		0.355	1.00	1	11/01/2018 16:18	WG1189757

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	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	11/01/2018 16:18	WG1189757
1,1,2-Trichloroethane	U		0.383	1.00	1	11/01/2018 16:18	WG1189757
Trichloroethene	U		0.398	1.00	1	11/01/2018 16:18	WG1189757
Trichlorofluoromethane	U		1.20	5.00	1	11/01/2018 16:18	WG1189757
1,2,3-Trichloropropane	U		0.807	2.50	1	11/01/2018 16:18	WG1189757
1,2,4-Trimethylbenzene	U		0.373	1.00	1	11/01/2018 16:18	WG1189757
1,2,3-Trimethylbenzene	U		0.321	1.00	1	11/01/2018 16:18	WG1189757
1,3,5-Trimethylbenzene	U		0.387	1.00	1	11/01/2018 16:18	WG1189757
Vinyl chloride	U		0.259	1.00	1	11/01/2018 16:18	WG1189757
Xylenes, Total	U		1.06	3.00	1	11/01/2018 16:18	WG1189757
(S) Toluene-d8	*108*			*80.0-120*		*11/01/2018 16:18*	WG1189757
(S) Dibromofluoromethane	*107*			*75.0-120*		*11/01/2018 16:18*	WG1189757
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*11/01/2018 16:18*	WG1189757

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 22:20	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 22:20	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 22:20	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 22:20	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 22:20	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 22:20	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 22:20	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 22:20	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 22:20	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 22:20	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 22:20	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 22:20	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 22:20	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 22:20	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 22:20	WG1188101
Chloroform	0.631	J	0.324	5.00	1	10/29/2018 22:20	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 22:20	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 22:20	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 22:20	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 22:20	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 22:20	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 22:20	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 22:20	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 22:20	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 22:20	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 22:20	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 22:20	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 22:20	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 22:20	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 22:20	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 22:20	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 22:20	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 22:20	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 22:20	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 22:20	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 22:20	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 22:20	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 22:20	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 22:20	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 22:20	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 22:20	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 22:20	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 22:20	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 22:20	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 22:20	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 22:20	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 22:20	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 22:20	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 22:20	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 22:20	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 22:20	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 22:20	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 22:20	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 22:20	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 22:20	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 22:20	WG1188101

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 22:20	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 22:20	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 22:20	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 22:20	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 22:20	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 22:20	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 22:20	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 22:20	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 22:20	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 22:20	WG1188101
(S) Toluene-d8	*96.1*			*80.0-120*		*10/29/2018 22:20*	WG1188101
(S) Dibromofluoromethane	*102*			*75.0-120*		*10/29/2018 22:20*	WG1188101
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*10/29/2018 22:20*	WG1188101

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		170	800	1	11/04/2018 20:35	WG1184654
(S) o-Terphenyl	*78.3*			*50.0-150*		*11/04/2018 20:35*	WG1184654

Semi Volatile Organic Compounds (GC/MS) by Method 8270 D-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.00800	0.0500	1	11/02/2018 13:08	WG1188052
Acenaphthene	U		0.0100	0.0500	1	11/02/2018 13:08	WG1188052
Acenaphthylene	U		0.00700	0.0500	1	11/02/2018 13:08	WG1188052
Benzo(a)anthracene	U		0.00830	0.0500	1	11/02/2018 13:08	WG1188052
Benzo(a)pyrene	U		0.0158	0.0500	1	11/02/2018 13:08	WG1188052
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/02/2018 13:08	WG1188052
Benzo(g,h,i)perylene	U		0.00227	0.0500	1	11/02/2018 13:08	WG1188052
Benzo(k)fluoranthene	U		0.0255	0.0500	1	11/02/2018 13:08	WG1188052
Chrysene	U		0.0144	0.0500	1	11/02/2018 13:08	WG1188052
Dibenz(a,h)anthracene	U		0.00454	0.0500	1	11/02/2018 13:08	WG1188052
Fluoranthene	U		0.0165	0.0500	1	11/02/2018 13:08	WG1188052
Fluorene	U		0.00898	0.0500	1	11/02/2018 13:08	WG1188052
Indeno(1,2,3-cd)pyrene	U		0.00739	0.0500	1	11/02/2018 13:08	WG1188052
Naphthalene	0.0541	B J	0.0123	0.250	1	11/02/2018 13:08	WG1188052
Phenanthrene	U		0.0184	0.0500	1	11/02/2018 13:08	WG1188052
Pyrene	U		0.0155	0.0500	1	11/02/2018 13:08	WG1188052
1-Methylnaphthalene	U		0.0189	0.250	1	11/02/2018 13:08	WG1188052
2-Methylnaphthalene	U		0.0155	0.250	1	11/02/2018 13:08	WG1188052
2-Chloronaphthalene	U		0.0165	0.250	1	11/02/2018 13:08	WG1188052
(S) Nitrobenzene-d5	*81.3*			*11.0-135*		*11/02/2018 13:08*	WG1188052
(S) 2-Fluorobiphenyl	*75.3*			*32.0-120*		*11/02/2018 13:08*	WG1188052
(S) p-Terphenyl-d14	*92.3*			*23.0-122*		*11/02/2018 13:08*	WG1188052

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/29/2018 17:43	WG1188101
Acrolein	U		8.87	50.0	1	10/29/2018 17:43	WG1188101
Acrylonitrile	U		1.87	10.0	1	10/29/2018 17:43	WG1188101
Benzene	U		0.331	1.00	1	10/29/2018 17:43	WG1188101
Bromobenzene	U		0.352	1.00	1	10/29/2018 17:43	WG1188101
Bromodichloromethane	U		0.380	1.00	1	10/29/2018 17:43	WG1188101
Bromoform	U		0.469	1.00	1	10/29/2018 17:43	WG1188101
Bromomethane	U		0.866	5.00	1	10/29/2018 17:43	WG1188101
n-Butylbenzene	U		0.361	1.00	1	10/29/2018 17:43	WG1188101
sec-Butylbenzene	U		0.365	1.00	1	10/29/2018 17:43	WG1188101
tert-Butylbenzene	U		0.399	1.00	1	10/29/2018 17:43	WG1188101
Carbon tetrachloride	U		0.379	1.00	1	10/29/2018 17:43	WG1188101
Chlorobenzene	U		0.348	1.00	1	10/29/2018 17:43	WG1188101
Chlorodibromomethane	U		0.327	1.00	1	10/29/2018 17:43	WG1188101
Chloroethane	U		0.453	5.00	1	10/29/2018 17:43	WG1188101
Chloroform	U		0.324	5.00	1	10/29/2018 17:43	WG1188101
Chloromethane	U		0.276	2.50	1	10/29/2018 17:43	WG1188101
2-Chlorotoluene	U		0.375	1.00	1	10/29/2018 17:43	WG1188101
4-Chlorotoluene	U		0.351	1.00	1	10/29/2018 17:43	WG1188101
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/29/2018 17:43	WG1188101
1,2-Dibromoethane	U		0.381	1.00	1	10/29/2018 17:43	WG1188101
Dibromomethane	U		0.346	1.00	1	10/29/2018 17:43	WG1188101
1,2-Dichlorobenzene	U		0.349	1.00	1	10/29/2018 17:43	WG1188101
1,3-Dichlorobenzene	U		0.220	1.00	1	10/29/2018 17:43	WG1188101
1,4-Dichlorobenzene	U		0.274	1.00	1	10/29/2018 17:43	WG1188101
Dichlorodifluoromethane	U		0.551	5.00	1	10/29/2018 17:43	WG1188101
1,1-Dichloroethane	U		0.259	1.00	1	10/29/2018 17:43	WG1188101
1,2-Dichloroethane	U		0.361	1.00	1	10/29/2018 17:43	WG1188101
1,1-Dichloroethene	U		0.398	1.00	1	10/29/2018 17:43	WG1188101
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/29/2018 17:43	WG1188101
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/29/2018 17:43	WG1188101
1,2-Dichloropropane	U		0.306	1.00	1	10/29/2018 17:43	WG1188101
1,1-Dichloropropene	U		0.352	1.00	1	10/29/2018 17:43	WG1188101
1,3-Dichloropropane	U		0.366	1.00	1	10/29/2018 17:43	WG1188101
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/29/2018 17:43	WG1188101
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/29/2018 17:43	WG1188101
2,2-Dichloropropane	U	J4	0.321	1.00	1	10/29/2018 17:43	WG1188101
Di-isopropyl ether	U		0.320	1.00	1	10/29/2018 17:43	WG1188101
Ethylbenzene	U		0.384	1.00	1	10/29/2018 17:43	WG1188101
Hexachloro-1,3-butadiene	U		0.256	1.00	1	10/29/2018 17:43	WG1188101
Isopropylbenzene	U		0.326	1.00	1	10/29/2018 17:43	WG1188101
p-Isopropyltoluene	U		0.350	1.00	1	10/29/2018 17:43	WG1188101
2-Butanone (MEK)	U		3.93	10.0	1	10/29/2018 17:43	WG1188101
Methylene Chloride	U		1.00	5.00	1	10/29/2018 17:43	WG1188101
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/29/2018 17:43	WG1188101
Methyl tert-butyl ether	U		0.367	1.00	1	10/29/2018 17:43	WG1188101
Naphthalene	U		1.00	5.00	1	10/29/2018 17:43	WG1188101
n-Propylbenzene	U		0.349	1.00	1	10/29/2018 17:43	WG1188101
Styrene	U		0.307	1.00	1	10/29/2018 17:43	WG1188101
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	10/29/2018 17:43	WG1188101
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/29/2018 17:43	WG1188101
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/29/2018 17:43	WG1188101
Tetrachloroethene	U		0.372	1.00	1	10/29/2018 17:43	WG1188101
Toluene	U		0.412	1.00	1	10/29/2018 17:43	WG1188101
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/29/2018 17:43	WG1188101
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/29/2018 17:43	WG1188101

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1-Trichloroethane	U		0.319	1.00	1	10/29/2018 17:43	WG1188101
1,1,2-Trichloroethane	U		0.383	1.00	1	10/29/2018 17:43	WG1188101
Trichloroethene	U		0.398	1.00	1	10/29/2018 17:43	WG1188101
Trichlorofluoromethane	U		1.20	5.00	1	10/29/2018 17:43	WG1188101
1,2,3-Trichloropropane	U		0.807	2.50	1	10/29/2018 17:43	WG1188101
1,2,4-Trimethylbenzene	U		0.373	1.00	1	10/29/2018 17:43	WG1188101
1,2,3-Trimethylbenzene	U		0.321	1.00	1	10/29/2018 17:43	WG1188101
1,3,5-Trimethylbenzene	U		0.387	1.00	1	10/29/2018 17:43	WG1188101
Vinyl chloride	U		0.259	1.00	1	10/29/2018 17:43	WG1188101
Xylenes, Total	U		1.06	3.00	1	10/29/2018 17:43	WG1188101
(S) Toluene-d8	*96.2*			*80.0-120*		*10/29/2018 17:43*	WG1188101
(S) Dibromofluoromethane	*102*			*75.0-120*		*10/29/2018 17:43*	WG1188101
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*		*10/29/2018 17:43*	WG1188101

Method Blank (MB)

(MB) R3356589-3 10/29/18 15:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		10.0	50.0
Acrolein	U		8.87	50.0
Acrylonitrile	U		1.87	10.0
Benzene	U		0.331	1.00
Bromobenzene	U		0.352	1.00
Bromodichloromethane	U		0.380	1.00
Bromoform	U		0.469	1.00
Bromomethane	U		0.866	5.00
n-Butylbenzene	U		0.361	1.00
sec-Butylbenzene	U		0.365	1.00
tert-Butylbenzene	U		0.399	1.00
Carbon tetrachloride	U		0.379	1.00
Chlorobenzene	U		0.348	1.00
Chlorodibromomethane	U		0.327	1.00
Chloroethane	U		0.453	5.00
Chloroform	U		0.324	5.00
Chloromethane	U		0.276	2.50
2-Chlorotoluene	U		0.375	1.00
4-Chlorotoluene	U		0.351	1.00
1,2-Dibromo-3-Chloropropane	U		1.33	5.00
1,2-Dibromoethane	U		0.381	1.00
Dibromomethane	U		0.346	1.00
1,2-Dichlorobenzene	U		0.349	1.00
1,3-Dichlorobenzene	U		0.220	1.00
1,4-Dichlorobenzene	U		0.274	1.00
Dichlorodifluoromethane	U		0.551	5.00
1,1-Dichloroethane	U		0.259	1.00
1,2-Dichloroethane	U		0.361	1.00
1,1-Dichloroethene	U		0.398	1.00
cis-1,2-Dichloroethene	U		0.260	1.00
trans-1,2-Dichloroethene	U		0.396	1.00
1,2-Dichloropropane	U		0.306	1.00
1,1-Dichloropropene	U		0.352	1.00
1,3-Dichloropropane	U		0.366	1.00
cis-1,3-Dichloropropene	U		0.418	1.00
trans-1,3-Dichloropropene	U		0.419	1.00
2,2-Dichloropropane	U		0.321	1.00
Di-isopropyl ether	U		0.320	1.00
Ethylbenzene	U		0.384	1.00
Hexachloro-1,3-butadiene	U		0.256	1.00

Method Blank (MB)

(MB) R3356589-3 10/29/18 15:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.326	1.00
p-Isopropyltoluene	U		0.350	1.00
2-Butanone (MEK)	U		3.93	10.0
Methylene Chloride	U		1.00	5.00
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.349	1.00
Styrene	U		0.307	1.00
1,1,1,2-Tetrachloroethane	U		0.385	1.00
1,1,2,2-Tetrachloroethane	U		0.130	1.00
Tetrachloroethene	U		0.372	1.00
Toluene	0.600	J	0.412	1.00
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.355	1.00
1,1,1-Trichloroethane	U		0.319	1.00
1,1,2-Trichloroethane	U		0.383	1.00
Trichloroethene	U		0.398	1.00
Trichlorofluoromethane	U		1.20	5.00
1,2,3-Trichloropropane	U		0.807	2.50
1,2,3-Trimethylbenzene	U		0.321	1.00
1,2,4-Trimethylbenzene	U		0.373	1.00
1,3,5-Trimethylbenzene	U		0.387	1.00
Vinyl chloride	U		0.259	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*97.8*			*80.0-120*
(S) Dibromofluoromethane	*103*			*75.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*

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

(LCS) R3356589-1 10/29/18 14:52 • (LCSD) R3356589-2 10/29/18 15:12

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 %
Acetone	125	102	104	81.9	83.0	19.0-160			1.25	27
Acrolein	125	134	143	107	115	10.0-160			6.64	26
Acrylonitrile	125	129	131	103	104	55.0-149			0.881	20
Benzene	25.0	27.7	27.4	111	110	70.0-123			0.808	20

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

(LCS) R3356589-1 10/29/18 14:52 • (LCSD) R3356589-2 10/29/18 15:12

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 %
Bromobenzene	25.0	26.9	27.7	108	111	73.0-121			3.04	20
Bromodichloromethane	25.0	26.1	26.7	105	107	75.0-120			2.10	20
Bromoform	25.0	26.1	26.0	105	104	68.0-132			0.691	20
Bromomethane	25.0	26.6	26.6	106	106	10.0-160			0.0470	25
n-Butylbenzene	25.0	27.0	27.1	108	108	73.0-125			0.178	20
sec-Butylbenzene	25.0	25.7	25.5	103	102	75.0-125			0.769	20
tert-Butylbenzene	25.0	25.5	25.5	102	102	76.0-124			0.0662	20
Carbon tetrachloride	25.0	25.1	25.1	100	100	68.0-126			0.247	20
Chlorobenzene	25.0	22.0	23.3	87.8	93.1	80.0-121			5.81	20
Chlorodibromomethane	25.0	22.2	23.7	88.7	94.7	77.0-125			6.52	20
Chloroethane	25.0	25.2	25.7	101	103	47.0-150			1.78	20
Chloroform	25.0	26.7	27.0	107	108	73.0-120			1.24	20
Chloromethane	25.0	20.7	20.5	82.7	82.1	41.0-142			0.683	20
2-Chlorotoluene	25.0	26.0	25.9	104	103	76.0-123			0.482	20
4-Chlorotoluene	25.0	27.0	26.9	108	108	75.0-122			0.620	20
1,2-Dibromo-3-Chloropropane	25.0	23.5	23.3	94.0	93.3	58.0-134			0.645	20
1,2-Dibromoethane	25.0	21.7	23.6	86.8	94.3	80.0-122			8.26	20
Dibromomethane	25.0	27.1	27.4	108	110	80.0-120			1.14	20
1,2-Dichlorobenzene	25.0	25.8	25.9	103	104	79.0-121			0.371	20
1,3-Dichlorobenzene	25.0	26.4	26.2	106	105	79.0-120			0.765	20
1,4-Dichlorobenzene	25.0	24.1	24.9	96.5	99.4	79.0-120			2.94	20
Dichlorodifluoromethane	25.0	27.0	22.8	108	91.2	51.0-149			16.8	20
1,1-Dichloroethane	25.0	27.7	27.4	111	110	70.0-126			1.25	20
1,2-Dichloroethane	25.0	27.7	27.6	111	110	70.0-128			0.336	20
1,1-Dichloroethene	25.0	25.7	26.2	103	105	71.0-124			1.85	20
cis-1,2-Dichloroethene	25.0	25.9	25.5	104	102	73.0-120			1.59	20
trans-1,2-Dichloroethene	25.0	25.6	26.0	102	104	73.0-120			1.52	20
1,2-Dichloropropane	25.0	26.5	26.8	106	107	77.0-125			0.947	20
1,1-Dichloropropene	25.0	28.5	28.9	114	116	74.0-126			1.29	20
1,3-Dichloropropane	25.0	24.9	26.6	99.6	106	80.0-120			6.53	20
cis-1,3-Dichloropropene	25.0	24.8	25.8	99.3	103	80.0-123			3.71	20
trans-1,3-Dichloropropene	25.0	25.3	26.2	101	105	78.0-124			3.61	20
2,2-Dichloropropane	25.0	36.0	36.2	144	145	58.0-130	J4	J4	0.570	20
Di-isopropyl ether	25.0	23.6	23.2	94.3	92.8	58.0-138			1.61	20
Ethylbenzene	25.0	23.5	23.8	93.8	95.3	79.0-123			1.54	20
Hexachloro-1,3-butadiene	25.0	24.9	25.3	99.5	101	54.0-138			1.63	20
Isopropylbenzene	25.0	25.8	25.5	103	102	76.0-127			1.03	20
p-Isopropyltoluene	25.0	25.7	25.8	103	103	76.0-125			0.442	20
2-Butanone (MEK)	125	131	128	105	102	44.0-160			2.48	20
Methylene Chloride	25.0	25.7	24.2	103	96.7	67.0-120			6.12	20

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

(LCS) R3356589-1 10/29/18 14:52 • (LCSD) R3356589-2 10/29/18 15:12

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 %
4-Methyl-2-pentanone (MIBK)	125	110	116	88.1	93.0	68.0-142			5.33	20
Methyl tert-butyl ether	25.0	21.5	22.0	85.9	88.0	68.0-125			2.36	20
Naphthalene	25.0	24.6	25.1	98.4	100	54.0-135			2.10	20
n-Propylbenzene	25.0	27.0	26.3	108	105	77.0-124			2.74	20
Styrene	25.0	25.9	25.1	104	100	73.0-130			3.19	20
1,1,1,2-Tetrachloroethane	25.0	22.6	23.6	90.6	94.5	75.0-125			4.19	20
1,1,2,2-Tetrachloroethane	25.0	26.6	27.5	106	110	65.0-130			3.18	20
Tetrachloroethene	25.0	23.2	24.2	92.8	96.9	72.0-132			4.38	20
Toluene	25.0	24.8	25.4	99.1	101	79.0-120			2.39	20
1,1,2-Trichlorotrifluoroethane	25.0	24.3	23.8	97.3	95.0	69.0-132			2.36	20
1,2,3-Trichlorobenzene	25.0	22.2	24.2	88.8	96.7	50.0-138			8.48	20
1,2,4-Trichlorobenzene	25.0	25.4	25.5	102	102	57.0-137			0.318	20
1,1,1-Trichloroethane	25.0	25.3	25.2	101	101	73.0-124			0.649	20
1,1,2-Trichloroethane	25.0	22.8	23.3	91.1	93.1	80.0-120			2.19	20
Trichloroethene	25.0	23.7	23.2	94.7	92.9	78.0-124			1.87	20
Trichlorofluoromethane	25.0	26.1	25.7	104	103	59.0-147			1.66	20
1,2,3-Trichloropropane	25.0	25.3	25.1	101	100	73.0-130			0.952	20
1,2,3-Trimethylbenzene	25.0	26.0	25.7	104	103	77.0-120			1.17	20
1,2,4-Trimethylbenzene	25.0	27.2	26.3	109	105	76.0-121			3.40	20
1,3,5-Trimethylbenzene	25.0	25.6	25.5	103	102	76.0-122			0.393	20
Vinyl chloride	25.0	26.4	26.1	106	104	67.0-131			1.15	20
Xylenes, Total	75.0	70.3	73.3	93.7	97.7	79.0-123			4.18	20
(S) Toluene-d8				*93.4*	*97.8*	*80.0-120*				
(S) Dibromofluoromethane				*103*	*101*	*75.0-120*				
(S) 4-Bromofluorobenzene				*106*	*106*	*77.0-126*				

Method Blank (MB)

(MB) R3356401-2 11/01/18 09:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		10.0	50.0
Acrolein	U		8.87	50.0
Acrylonitrile	U		1.87	10.0
Benzene	U		0.331	1.00
Bromobenzene	U		0.352	1.00
Bromodichloromethane	U		0.380	1.00
Bromoform	U		0.469	1.00
Bromomethane	U		0.866	5.00
n-Butylbenzene	U		0.361	1.00
sec-Butylbenzene	U		0.365	1.00
tert-Butylbenzene	U		0.399	1.00
Carbon tetrachloride	U		0.379	1.00
Chlorobenzene	U		0.348	1.00
Chlorodibromomethane	U		0.327	1.00
Chloroethane	U		0.453	5.00
Chloroform	U		0.324	5.00
Chloromethane	U		0.276	2.50
2-Chlorotoluene	U		0.375	1.00
4-Chlorotoluene	U		0.351	1.00
1,2-Dibromo-3-Chloropropane	U		1.33	5.00
1,2-Dibromoethane	U		0.381	1.00
Dibromomethane	U		0.346	1.00
1,2-Dichlorobenzene	U		0.349	1.00
1,3-Dichlorobenzene	U		0.220	1.00
1,4-Dichlorobenzene	U		0.274	1.00
Dichlorodifluoromethane	U		0.551	5.00
1,1-Dichloroethane	U		0.259	1.00
1,2-Dichloroethane	U		0.361	1.00
1,1-Dichloroethene	U		0.398	1.00
cis-1,2-Dichloroethene	U		0.260	1.00
trans-1,2-Dichloroethene	U		0.396	1.00
1,2-Dichloropropane	U		0.306	1.00
1,1-Dichloropropene	U		0.352	1.00
1,3-Dichloropropane	U		0.366	1.00
cis-1,3-Dichloropropene	U		0.418	1.00
trans-1,3-Dichloropropene	U		0.419	1.00
2,2-Dichloropropane	U		0.321	1.00
Di-isopropyl ether	U		0.320	1.00
Ethylbenzene	U		0.384	1.00
Hexachloro-1,3-butadiene	0.280	J	0.256	1.00

Method Blank (MB)

(MB) R3356401-2 11/01/18 09:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.326	1.00
p-Isopropyltoluene	U		0.350	1.00
2-Butanone (MEK)	U		3.93	10.0
Methylene Chloride	U		1.00	5.00
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.349	1.00
Styrene	U		0.307	1.00
1,1,1,2-Tetrachloroethane	U		0.385	1.00
1,1,2,2-Tetrachloroethane	U		0.130	1.00
Tetrachloroethene	U		0.372	1.00
Toluene	U		0.412	1.00
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00
1,2,3-Trichlorobenzene	0.251	J	0.230	1.00
1,2,4-Trichlorobenzene	U		0.355	1.00
1,1,1-Trichloroethane	U		0.319	1.00
1,1,2-Trichloroethane	U		0.383	1.00
Trichloroethene	U		0.398	1.00
Trichlorofluoromethane	U		1.20	5.00
1,2,3-Trichloropropane	U		0.807	2.50
1,2,3-Trimethylbenzene	U		0.321	1.00
1,2,4-Trimethylbenzene	U		0.373	1.00
1,3,5-Trimethylbenzene	U		0.387	1.00
Vinyl chloride	U		0.259	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*109*			*80.0-120*
(S) Dibromofluoromethane	*103*			*75.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*

Laboratory Control Sample (LCS)

(LCS) R3356401-1 11/01/18 09:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	159	127	19.0-160	
Acrolein	125	121	96.6	10.0-160	
Acrylonitrile	125	136	109	55.0-149	
Benzene	25.0	20.9	83.6	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R3356401-1 11/01/18 09:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromobenzene	25.0	20.4	81.7	73.0-121	
Bromodichloromethane	25.0	22.4	89.7	75.0-120	
Bromoform	25.0	23.2	92.6	68.0-132	
Bromomethane	25.0	16.7	66.6	10.0-160	
n-Butylbenzene	25.0	20.9	83.7	73.0-125	
sec-Butylbenzene	25.0	22.5	89.9	75.0-125	
tert-Butylbenzene	25.0	24.3	97.0	76.0-124	
Carbon tetrachloride	25.0	24.9	99.5	68.0-126	
Chlorobenzene	25.0	27.0	108	80.0-121	
Chlorodibromomethane	25.0	28.0	112	77.0-125	
Chloroethane	25.0	16.4	65.7	47.0-150	
Chloroform	25.0	23.7	95.0	73.0-120	
Chloromethane	25.0	21.9	87.6	41.0-142	
2-Chlorotoluene	25.0	21.9	87.5	76.0-123	
4-Chlorotoluene	25.0	22.9	91.7	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	21.4	85.6	58.0-134	
1,2-Dibromoethane	25.0	28.1	113	80.0-122	
Dibromomethane	25.0	21.5	86.2	80.0-120	
1,2-Dichlorobenzene	25.0	24.5	98.2	79.0-121	
1,3-Dichlorobenzene	25.0	24.4	97.8	79.0-120	
1,4-Dichlorobenzene	25.0	23.2	93.0	79.0-120	
Dichlorodifluoromethane	25.0	22.5	90.1	51.0-149	
1,1-Dichloroethane	25.0	22.4	89.5	70.0-126	
1,2-Dichloroethane	25.0	23.9	95.5	70.0-128	
1,1-Dichloroethene	25.0	23.2	92.9	71.0-124	
cis-1,2-Dichloroethene	25.0	22.7	90.7	73.0-120	
trans-1,2-Dichloroethene	25.0	23.9	95.5	73.0-120	
1,2-Dichloropropane	25.0	22.6	90.5	77.0-125	
1,1-Dichloropropene	25.0	22.5	90.0	74.0-126	
1,3-Dichloropropane	25.0	22.9	91.7	80.0-120	
cis-1,3-Dichloropropene	25.0	23.3	93.4	80.0-123	
trans-1,3-Dichloropropene	25.0	23.7	94.7	78.0-124	
2,2-Dichloropropane	25.0	25.1	100	58.0-130	
Di-isopropyl ether	25.0	25.9	104	58.0-138	
Ethylbenzene	25.0	27.6	110	79.0-123	
Hexachloro-1,3-butadiene	25.0	20.4	81.7	54.0-138	
Isopropylbenzene	25.0	23.6	94.5	76.0-127	
p-Isopropyltoluene	25.0	25.4	102	76.0-125	
2-Butanone (MEK)	125	146	116	44.0-160	
Methylene Chloride	25.0	21.9	87.5	67.0-120	

Laboratory Control Sample (LCS)

(LCS) R3356401-1 11/01/18 09:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	125	153	122	68.0-142	
Methyl tert-butyl ether	25.0	23.5	93.8	68.0-125	
Naphthalene	25.0	21.7	86.7	54.0-135	
n-Propylbenzene	25.0	23.0	92.2	77.0-124	
Styrene	25.0	21.4	85.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	29.3	117	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	21.2	84.9	65.0-130	
Tetrachloroethene	25.0	26.7	107	72.0-132	
Toluene	25.0	25.7	103	79.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	25.8	103	69.0-132	
1,2,3-Trichlorobenzene	25.0	19.8	79.1	50.0-138	
1,2,4-Trichlorobenzene	25.0	21.0	83.9	57.0-137	
1,1,1-Trichloroethane	25.0	27.2	109	73.0-124	
1,1,2-Trichloroethane	25.0	24.8	99.3	80.0-120	
Trichloroethene	25.0	23.0	92.1	78.0-124	
Trichlorofluoromethane	25.0	22.5	89.8	59.0-147	
1,2,3-Trichloropropane	25.0	23.3	93.1	73.0-130	
1,2,3-Trimethylbenzene	25.0	23.4	93.5	77.0-120	
1,2,4-Trimethylbenzene	25.0	23.7	94.8	76.0-121	
1,3,5-Trimethylbenzene	25.0	23.5	94.2	76.0-122	
Vinyl chloride	25.0	21.0	83.9	67.0-131	
Xylenes, Total	75.0	78.5	105	79.0-123	
(S) Toluene-d8			*109*	*80.0-120*	
(S) Dibromofluoromethane			*111*	*75.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	

Method Blank (MB)

(MB) R3356820-1 11/04/18 16:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
AK102 DRO C10-C25	U		170	800
(S) o-Terphenyl	*81.0*			*50.0-150*

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

(LCS) R3356820-4 11/04/18 18:01 • (LCSD) R3356820-5 11/04/18 18:23

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 %
AK102 DRO C10-C25	3000	2730	2690	91.0	89.7	75.0-125			1.48	20
(S) o-Terphenyl				*107*	*107*	*50.0-150*				

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

Method Blank (MB)

(MB) R3356363-3 11/02/18 09:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.00800	0.0500
Acenaphthene	U		0.0100	0.0500
Acenaphthylene	U		0.00700	0.0500
Benzo(a)anthracene	U		0.00830	0.0500
Benzo(a)pyrene	U		0.0158	0.0500
Benzo(b)fluoranthene	U		0.00212	0.0500
Benzo(g,h,i)perylene	0.00267	J	0.00227	0.0500
Benzo(k)fluoranthene	U		0.0255	0.0500
Chrysene	U		0.0144	0.0500
Dibenz(a,h)anthracene	U		0.00454	0.0500
Fluoranthene	U		0.0165	0.0500
Fluorene	U		0.00898	0.0500
Indeno(1,2,3-cd)pyrene	U		0.00739	0.0500
Naphthalene	0.0298	J	0.0123	0.250
Phenanthrene	U		0.0184	0.0500
Pyrene	U		0.0155	0.0500
1-Methylnaphthalene	U		0.0189	0.250
2-Methylnaphthalene	U		0.0155	0.250
2-Chloronaphthalene	U		0.0165	0.250
(S) Nitrobenzene-d5	*86.0*			*11.0-135*
(S) 2-Fluorobiphenyl	*80.0*			*32.0-120*
(S) p-Terphenyl-d14	*92.0*			*23.0-122*

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

(LCS) R3356363-1 11/02/18 08:24 • (LCSD) R3356363-2 11/02/18 08:46

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 %
Anthracene	2.00	1.66	1.67	83.0	83.5	43.0-127			0.601	20
Acenaphthene	2.00	1.73	1.69	86.5	84.5	42.0-120			2.34	20
Acenaphthylene	2.00	1.72	1.70	86.0	85.0	43.0-120			1.17	20
Benzo(a)anthracene	2.00	1.76	1.75	88.0	87.5	46.0-120			0.570	20
Benzo(a)pyrene	2.00	1.66	1.69	83.0	84.5	44.0-122			1.79	20
Benzo(b)fluoranthene	2.00	1.82	1.81	91.0	90.5	43.0-122			0.551	20
Benzo(g,h,i)perylene	2.00	1.78	1.81	89.0	90.5	25.0-137			1.67	23
Benzo(k)fluoranthene	2.00	1.83	1.71	91.5	85.5	39.0-128			6.78	22
Chrysene	2.00	1.88	1.77	94.0	88.5	42.0-129			6.03	20
Dibenz(a,h)anthracene	2.00	1.72	1.76	86.0	88.0	25.0-139			2.30	22
Fluoranthene	2.00	1.86	1.79	93.0	89.5	48.0-131			3.84	20

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

(LCS) R3356363-1 11/02/18 08:24 • (LCSD) R3356363-2 11/02/18 08:46

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 %
Fluorene	2.00	1.73	1.70	86.5	85.0	42.0-120			1.75	20
Indeno(1,2,3-cd)pyrene	2.00	1.80	1.80	90.0	90.0	37.0-133			0.000	20
Naphthalene	2.00	1.77	1.71	88.5	85.5	30.0-120			3.45	22
Phenanthrene	2.00	1.80	1.75	90.0	87.5	42.0-120			2.82	20
Pyrene	2.00	1.80	1.75	90.0	87.5	38.0-124			2.82	20
1-Methylnaphthalene	2.00	1.76	1.73	88.0	86.5	43.0-120			1.72	20
2-Methylnaphthalene	2.00	1.61	1.57	80.5	78.5	40.0-120			2.52	20
2-Chloronaphthalene	2.00	1.70	1.65	85.0	82.5	39.0-120			2.99	20
(S) Nitrobenzene-d5				*95.0*	*93.0*	*11.0-135*				
(S) 2-Fluorobiphenyl				*88.5*	*85.0*	*32.0-120*				
(S) p-Terphenyl-d14				*97.0*	*94.5*	*23.0-122*				

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
B	The same analyte is found in the associated blank.
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.
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

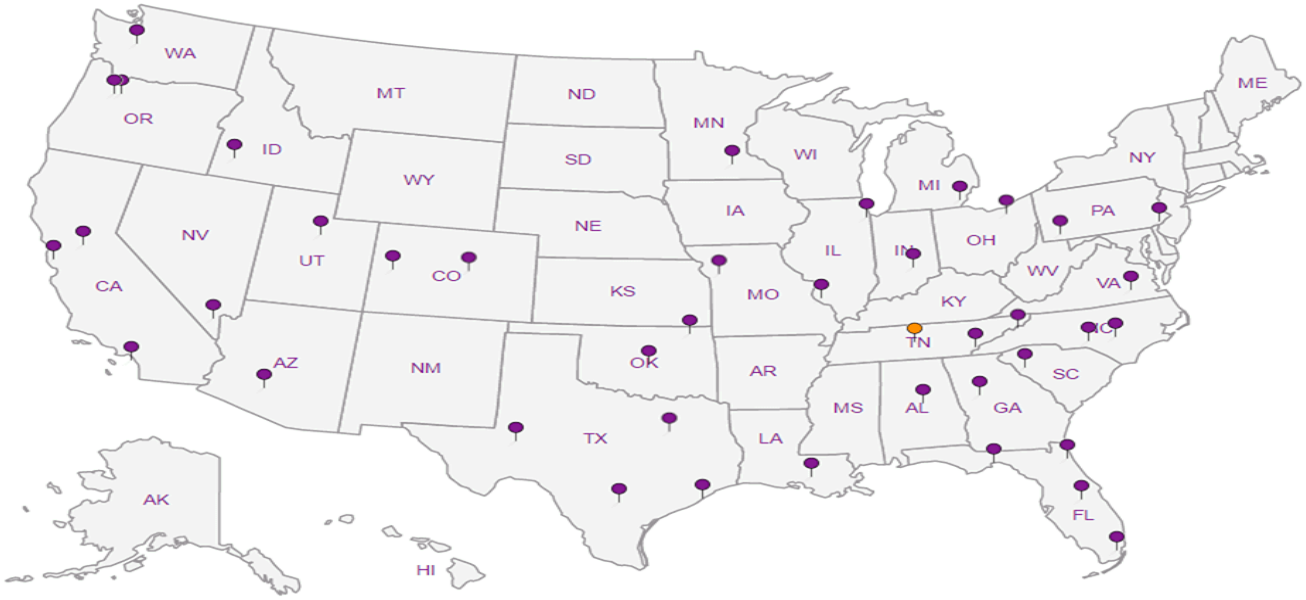
Third Party Federal Accreditations

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

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

Our Locations

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



Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Pres Chk

Report to: Cyrus Gorman

Email To: cyrus.gorman@stantec.com; collin.macheel@stantec.com

Project Description:

City/State Collected: ANCHORAGE, AK

Phone: 206-494-5029
Fax: 425-869-1190

Client Project # 185750590

Lab Project # STANTECBWA-AK

Collected by (print): Drew Beard

Site/Facility ID # 726TH E 12 AVE

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 3 (2)

Pace Analytical® National Center for Testing & Innovation

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

L # L1038850 ~~L1038842~~

A221

Table #

Acctnum: STANTECBWA
Template: T141751
Prelogin: P676584
TSR: 110 - Brian Ford
PB: TB 10-11-18
Shipped Via: FedEX 2nd Day

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK102 4ozClr-NoPres	Ignitibility 4ozClr-NoPres	MRCRA8 Metals 4ozClr-NoPres	PAHs SV8270PAHSIMD 4ozClr-NoPres	PCBs SV8082 4ozClr-NoPres	TCLP RCRA8 Metals 8ozClr-NoPres	pH 2ozClr-NoPres	water AK102 100ml Amb HCl *	water PAH 8270SIMD 100ml Amb-NoPres	water VOCs V8260C 40mlAmb-HCl	Remarks	Sample # (lab only)
GP-9	GRAB	GW	27'	10/23/18	14:05	3										X		-01
GP-8	↓	↓	↓	↓	15:15	3										X		-02
GP-7					16:35	3										X		-03
GP-6					17:50	3										X		-04
GP-6-DUP					17:55	3										X		-05
GP-5	↓		↓		~~18:00~~ 19:10	3										X		-06
IDW-WATER	COMP	↓	—	↓	1920	5								X	X	X		-07
TRIP BLANK	—	GW	—	10/23/18	—	1										X		-08

* 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 # 7136 2667 9863

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
[signature]			[signature] 10-26

Trip Blank Received: (Yes) / No
(HCL) / MeoH
TBR

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)

Temp: 1.6+0.1=1.7 °C
Bottles Received: 3MA2 23 1TB

If preservation required by Login: Date/Time
* Preserved @ 10/27/18 18:41

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition:
			[signature]	10/27/18	8:45		NCF / (OK)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

April 03, 2019

Stantec- Bellevue, WA

Sample Delivery Group:	L1041150
Samples Received:	11/05/2018
Project Number:	185750590
Description:	

Report To: Cyrus Gorman
11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Entire Report Reviewed By:

Jared Starkey
Project Manager

TABLE OF CONTENTS

GP-5 L1041150-01 Air

Collected by	Collected date/time	Received date/time
Jake K	11/02/18 13:26	11/05/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1191864	1	11/06/18 13:01	11/06/18 13:01	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1193314	2	11/08/18 22:41	11/08/18 22:41	MBF	Mt. Juliet, TN

GP-6 L1041150-02 Air

Collected by	Collected date/time	Received date/time
Jake K	11/02/18 13:47	11/05/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1191864	1	11/06/18 13:05	11/06/18 13:05	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1193314	2	11/08/18 23:28	11/08/18 23:28	MBF	Mt. Juliet, TN

GP-7 L1041150-03 Air

Collected by	Collected date/time	Received date/time
Jake K	11/02/18 14:03	11/05/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1191864	1	11/06/18 13:07	11/06/18 13:07	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1193886	2	11/09/18 16:35	11/09/18 16:35	AMC	Mt. Juliet, TN

GP-8 L1041150-04 Air

Collected by	Collected date/time	Received date/time
Jake K	11/02/18 14:19	11/05/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1191864	1	11/06/18 13:10	11/06/18 13:10	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1193886	2	11/09/18 17:16	11/09/18 17:16	AMC	Mt. Juliet, TN

GP-9 L1041150-05 Air

Collected by	Collected date/time	Received date/time
Jake K	11/02/18 14:33	11/05/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method ASTM 1946	WG1191864	1	11/06/18 13:13	11/06/18 13:13	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1193886	2	11/09/18 17:57	11/09/18 17:57	AMC	Mt. Juliet, TN

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

Jared Starkey
Project Manager

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	WG1191864

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	WG1193314
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1193314
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1193314
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1193314
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1193314
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1193314
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1193314
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1193314
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1193314
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1193314
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1193314
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1193314
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1193314
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1193314
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1193314
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1193314
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1193314
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1193314
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1193314
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1193314
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1193314
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1193314
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1193314
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1193314
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1193314
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1193314
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1193314
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1193314
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1193314
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1193314
Ethanol	64-17-5	46.10	1.26	2.38	3.30	6.22		2	WG1193314
Ethylbenzene	100-41-4	106	0.400	1.73	0.462	2.00		2	WG1193314
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1193314
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.813	4.57		2	WG1193314
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.453	2.24		2	WG1193314
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1193314
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1193314
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1193314
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1193314
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1193314
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1193314
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1193314
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1193314
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1193314
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1193314
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1193314
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1193314
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1193314
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1193314
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1193314

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
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1193314
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1193314
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1193314
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.403	1.19		2	WG1193314
Toluene	108-88-3	92.10	0.400	1.51	2.56	9.64		2	WG1193314
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1193314
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1193314
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1193314
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1193314
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1193314
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1193314
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1193314
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1193314
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1193314
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1193314
m&p-Xylene	1330-20-7	106	0.800	3.47	1.91	8.27		2	WG1193314
o-Xylene	95-47-6	106	0.400	1.73	0.656	2.84		2	WG1193314
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	ND	ND		2	WG1193314
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*90.1*				WG1193314

Sample Narrative:

L1041150-01 WG1193314: Lab receipt summa pressure = 0" Hg

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	WG1191864

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			
Acetone	67-64-1	58.10	2.50	5.94	ND	ND		2	WG1193314
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1193314
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1193314
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1193314
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1193314
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1193314
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1193314
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1193314
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1193314
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1193314
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1193314
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1193314
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1193314
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1193314
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1193314
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1193314
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1193314
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1193314
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1193314
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1193314
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1193314
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1193314
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1193314
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1193314
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1193314
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1193314
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1193314
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1193314
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1193314
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1193314
Ethanol	64-17-5	46.10	1.26	2.38	ND	ND		2	WG1193314
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1193314
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1193314
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.950	5.34		2	WG1193314
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.425	2.10		2	WG1193314
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1193314
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1193314
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1193314
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1193314
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1193314
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1193314
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1193314
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1193314
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1193314
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1193314
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1193314
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1193314
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1193314
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1193314
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1193314

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
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1193314
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1193314
Tetrachloroethylene	127-18-4	166	0.400	2.72	0.409	2.78		2	WG1193314
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1193314
Toluene	108-88-3	92.10	0.400	1.51	0.603	2.27		2	WG1193314
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1193314
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1193314
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1193314
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1193314
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1193314
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1193314
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1193314
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1193314
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1193314
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1193314
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1193314
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1193314
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	ND	ND		2	WG1193314
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*89.6*				WG1193314

Sample Narrative:

L1041150-02 WG1193314: Lab receipt summa pressure = 0" Hg

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	WG1191864

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	3.18	7.56		2	WG1193886
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1193886
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1193886
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1193886
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1193886
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1193886
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1193886
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1193886
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1193886
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1193886
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1193886
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1193886
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1193886
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1193886
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1193886
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1193886
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1193886
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1193886
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1193886
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1193886
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1193886
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1193886
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1193886
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1193886
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1193886
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1193886
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1193886
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1193886
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1193886
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1193886
Ethanol	64-17-5	46.10	1.26	2.38	1.97	3.72		2	WG1193886
Ethylbenzene	100-41-4	106	0.400	1.73	0.468	2.03		2	WG1193886
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1193886
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	2.86	16.1		2	WG1193886
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1193886
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1193886
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1193886
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1193886
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1193886
n-Hexane	110-54-3	86.20	0.400	1.41	0.525	1.85		2	WG1193886
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1193886
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1193886
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1193886
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1193886
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1193886
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1193886
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1193886
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1193886
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1193886
Propene	115-07-1	42.10	0.800	1.38	1.15	1.99		2	WG1193886

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
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1193886
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1193886
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1193886
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1193886
Toluene	108-88-3	92.10	0.400	1.51	2.41	9.09		2	WG1193886
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1193886
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1193886
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1193886
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1193886
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1193886
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1193886
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1193886
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1193886
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1193886
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1193886
m&p-Xylene	1330-20-7	106	0.800	3.47	1.87	8.09		2	WG1193886
o-Xylene	95-47-6	106	0.400	1.73	0.683	2.96		2	WG1193886
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	ND	ND		2	WG1193886
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.3*				WG1193886

Sample Narrative:

L1041150-03 WG1193886: Lab receipt summa pressure = 0" Hg

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	WG1191864

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	4.15	9.87		2	WG1193886
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1193886
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1193886
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1193886
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1193886
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1193886
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1193886
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1193886
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1193886
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1193886
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1193886
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1193886
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1193886
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1193886
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1193886
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1193886
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1193886
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1193886
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1193886
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1193886
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1193886
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1193886
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1193886
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1193886
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1193886
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1193886
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1193886
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1193886
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1193886
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1193886
Ethanol	64-17-5	46.10	1.26	2.38	2.41	4.55		2	WG1193886
Ethylbenzene	100-41-4	106	0.400	1.73	0.475	2.06		2	WG1193886
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1193886
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	2.93	16.4		2	WG1193886
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.416	2.06		2	WG1193886
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1193886
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1193886
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1193886
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1193886
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1193886
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1193886
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1193886
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1193886
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1193886
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1193886
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1193886
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1193886
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1193886
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1193886
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1193886

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
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1193886
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1193886
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1193886
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.427	1.26		2	WG1193886
Toluene	108-88-3	92.10	0.400	1.51	2.21	8.32		2	WG1193886
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1193886
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1193886
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1193886
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1193886
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.450	2.21		2	WG1193886
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1193886
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1193886
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1193886
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1193886
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1193886
m&p-Xylene	1330-20-7	106	0.800	3.47	2.07	8.98		2	WG1193886
o-Xylene	95-47-6	106	0.400	1.73	0.727	3.15		2	WG1193886
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	ND	ND		2	WG1193886
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.9*				WG1193886

Sample Narrative:

L1041150-04 WG1193886: Lab receipt summa pressure = -2" Hg

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	WG1191864

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	3.19	7.58		2	WG1193886
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1193886
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1193886
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1193886
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1193886
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1193886
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1193886
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1193886
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1193886
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1193886
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1193886
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1193886
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1193886
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1193886
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1193886
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1193886
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1193886
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1193886
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1193886
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1193886
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1193886
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1193886
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1193886
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1193886
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1193886
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1193886
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1193886
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1193886
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1193886
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1193886
Ethanol	64-17-5	46.10	1.26	2.38	3.12	5.88		2	WG1193886
Ethylbenzene	100-41-4	106	0.400	1.73	0.842	3.65		2	WG1193886
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1193886
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	2.83	15.9		2	WG1193886
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.444	2.20		2	WG1193886
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1193886
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1193886
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1193886
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1193886
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1193886
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1193886
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1193886
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1193886
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1193886
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1193886
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1193886
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1193886
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1193886
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1193886
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1193886

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
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1193886
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1193886
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1193886
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.498	1.47		2	WG1193886
Toluene	108-88-3	92.10	0.400	1.51	4.34	16.3		2	WG1193886
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1193886
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1193886
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1193886
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1193886
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.507	2.49		2	WG1193886
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1193886
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1193886
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1193886
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1193886
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1193886
m&p-Xylene	1330-20-7	106	0.800	3.47	3.57	15.5		2	WG1193886
o-Xylene	95-47-6	106	0.400	1.73	1.21	5.27		2	WG1193886
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	ND	ND		2	WG1193886
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.5*				WG1193886

Sample Narrative:

L1041150-05 WG1193886: Lab receipt summa pressure = -1" Hg

Method Blank (MB)

(MB) R3357335-3 11/06/18 10:29

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) R3357335-1 11/06/18 10:23 • (LCSD) R3357335-2 11/06/18 10:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	%	%	%	%	%	%			%	%
Helium	2.50	2.59	2.65	104	106	70.0-130			2.18	25

Method Blank (MB)

(MB) R3358259-3 11/08/18 08:09

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	0.167	J	0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	0.0708	J	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	0.0844	J	0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	0.0698	J	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	0.211	J	0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3358259-3 11/08/18 08:09

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0667	J	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	0.224	J	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	0.187	J	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
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*88.3*			*60.0-140*

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

(LCS) R3358259-1 11/08/18 06:28 • (LCSD) R3358259-2 11/08/18 07:18

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	3.25	3.18	86.7	84.7	55.0-148			2.37	25
Propene	3.75	3.64	3.62	97.0	96.5	64.0-144			0.551	25
Dichlorodifluoromethane	3.75	3.93	3.87	105	103	64.0-139			1.58	25
1,2-Dichlorotetrafluoroethane	3.75	3.91	3.82	104	102	70.0-130			2.27	25

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

(LCS) R3358259-1 11/08/18 06:28 • (LCSD) R3358259-2 11/08/18 07:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	3.64	3.66	97.0	97.5	70.0-130			0.578	25
Vinyl chloride	3.75	3.77	3.76	101	100	70.0-130			0.273	25
1,3-Butadiene	3.75	3.69	3.65	98.4	97.3	70.0-130			1.13	25
Bromomethane	3.75	3.93	4.01	105	107	70.0-130			2.13	25
Chloroethane	3.75	3.80	3.91	101	104	70.0-130			2.87	25
Trichlorofluoromethane	3.75	3.85	3.82	103	102	70.0-130			0.976	25
1,1,2-Trichlorotrifluoroethane	3.75	3.76	3.75	100	99.9	70.0-130			0.478	25
1,1-Dichloroethene	3.75	3.65	3.62	97.4	96.4	70.0-130			0.998	25
1,1-Dichloroethane	3.75	3.74	3.68	99.7	98.0	70.0-130			1.70	25
Acetone	3.75	3.71	3.66	99.0	97.5	70.0-130			1.54	25
2-Propanol	3.75	3.65	3.65	97.4	97.2	70.0-139			0.141	25
Carbon disulfide	3.75	3.71	3.72	98.8	99.3	70.0-130			0.525	25
Methylene Chloride	3.75	3.51	3.41	93.6	90.8	70.0-130			3.01	25
MTBE	3.75	3.64	3.63	97.0	96.8	70.0-130			0.210	25
trans-1,2-Dichloroethene	3.75	3.72	3.73	99.1	99.6	70.0-130			0.494	25
n-Hexane	3.75	3.75	3.67	100	97.8	70.0-130			2.25	25
Vinyl acetate	3.75	3.85	3.84	103	102	70.0-130			0.360	25
Methyl Ethyl Ketone	3.75	3.75	3.68	100	98.1	70.0-130			1.91	25
cis-1,2-Dichloroethene	3.75	3.92	3.85	104	103	70.0-130			1.72	25
Chloroform	3.75	3.73	3.75	99.4	99.9	70.0-130			0.581	25
Cyclohexane	3.75	3.78	3.72	101	99.1	70.0-130			1.69	25
1,1,1-Trichloroethane	3.75	3.72	3.75	99.1	99.9	70.0-130			0.791	25
Carbon tetrachloride	3.75	3.82	3.78	102	101	70.0-130			0.983	25
Benzene	3.75	3.75	3.73	100	99.4	70.0-130			0.760	25
1,2-Dichloroethane	3.75	3.76	3.64	100	97.1	70.0-130			3.28	25
Heptane	3.75	3.68	3.60	98.0	96.1	70.0-130			1.98	25
Trichloroethylene	3.75	3.81	3.72	102	99.1	70.0-130			2.38	25
1,2-Dichloropropane	3.75	3.78	3.66	101	97.7	70.0-130			3.09	25
1,4-Dioxane	3.75	3.85	3.38	103	90.1	70.0-140			13.0	25
Bromodichloromethane	3.75	3.84	3.73	102	99.5	70.0-130			2.83	25
cis-1,3-Dichloropropene	3.75	3.90	3.83	104	102	70.0-130			1.97	25
4-Methyl-2-pentanone (MIBK)	3.75	3.73	3.56	99.5	95.0	70.0-139			4.62	25
Toluene	3.75	3.90	3.81	104	101	70.0-130			2.52	25
trans-1,3-Dichloropropene	3.75	3.90	3.90	104	104	70.0-130			0.120	25
1,1,2-Trichloroethane	3.75	3.90	3.83	104	102	70.0-130			1.73	25
Tetrachloroethylene	3.75	3.89	3.88	104	103	70.0-130			0.295	25
Methyl Butyl Ketone	3.75	3.70	3.64	98.6	97.0	70.0-149			1.62	25
Dibromochloromethane	3.75	3.96	3.87	106	103	70.0-130			2.37	25
1,2-Dibromoethane	3.75	3.90	3.83	104	102	70.0-130			1.72	25
Chlorobenzene	3.75	3.90	3.83	104	102	70.0-130			1.78	25

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

(LCS) R3358259-1 11/08/18 06:28 • (LCSD) R3358259-2 11/08/18 07:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	3.91	3.89	104	104	70.0-130			0.389	25
m&p-Xylene	7.50	8.07	8.01	108	107	70.0-130			0.725	25
o-Xylene	3.75	3.95	3.93	105	105	70.0-130			0.430	25
Styrene	3.75	4.01	4.00	107	107	70.0-130			0.393	25
Bromoform	3.75	4.08	4.09	109	109	70.0-130			0.0973	25
1,1,2,2-Tetrachloroethane	3.75	3.92	3.89	104	104	70.0-130			0.675	25
4-Ethyltoluene	3.75	3.92	3.87	105	103	70.0-130			1.28	25
1,3,5-Trimethylbenzene	3.75	3.69	3.80	98.5	101	70.0-130			2.90	25
1,2,4-Trimethylbenzene	3.75	3.85	3.84	103	102	70.0-130			0.238	25
1,3-Dichlorobenzene	3.75	3.92	3.98	105	106	70.0-130			1.43	25
1,4-Dichlorobenzene	3.75	3.87	3.88	103	104	70.0-130			0.237	25
Benzyl Chloride	3.75	4.27	4.31	114	115	70.0-152			0.975	25
1,2-Dichlorobenzene	3.75	3.84	3.87	103	103	70.0-130			0.735	25
1,2,4-Trichlorobenzene	3.75	4.40	4.26	117	114	70.0-160			3.29	25
Hexachloro-1,3-butadiene	3.75	4.13	4.10	110	109	70.0-151			0.639	25
Naphthalene	3.75	4.67	4.60	125	123	70.0-159			1.51	25
TPH (GC/MS) Low Fraction	203	195	194	96.3	96.0	70.0-130			0.314	25
Allyl Chloride	3.75	3.84	3.72	102	99.2	70.0-130			3.10	25
2-Chlorotoluene	3.75	3.85	3.85	103	103	70.0-130			0.0261	25
Methyl Methacrylate	3.75	3.92	3.82	105	102	70.0-130			2.62	25
Tetrahydrofuran	3.75	3.59	3.56	95.7	95.0	70.0-137			0.738	25
2,2,4-Trimethylpentane	3.75	3.66	3.65	97.6	97.4	70.0-130			0.192	25
Vinyl Bromide	3.75	3.93	3.91	105	104	70.0-130			0.592	25
Isopropylbenzene	3.75	3.94	3.93	105	105	70.0-130			0.214	25
(S) 1,4-Bromofluorobenzene				*99.9*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3358496-3 11/09/18 10:57

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

Method Blank (MB)

(MB) R3358496-3 11/09/18 10:57

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0606	J	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
TPH (GC/MS) Low Fraction	11.2	J	6.91	50.0
(S) 1,4-Bromofluorobenzene	*99.1*			*60.0-140*

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

(LCS) R3358496-1 11/09/18 09:34 • (LCSD) R3358496-2 11/09/18 10:16

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	4.02	4.11	107	110	55.0-148			2.14	25
Propene	3.75	4.04	4.10	108	109	64.0-144			1.62	25
Dichlorodifluoromethane	3.75	4.17	4.19	111	112	64.0-139			0.387	25
1,2-Dichlorotetrafluoroethane	3.75	4.18	4.23	111	113	70.0-130			1.31	25

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

(LCS) R3358496-1 11/09/18 09:34 • (LCSD) R3358496-2 11/09/18 10:16

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	4.25	4.17	113	111	70.0-130			1.98	25
Vinyl chloride	3.75	4.08	4.04	109	108	70.0-130			1.09	25
1,3-Butadiene	3.75	4.10	4.16	109	111	70.0-130			1.56	25
Bromomethane	3.75	3.91	3.96	104	105	70.0-130			1.04	25
Chloroethane	3.75	3.98	4.08	106	109	70.0-130			2.49	25
Trichlorofluoromethane	3.75	3.87	3.98	103	106	70.0-130			2.83	25
1,1,2-Trichlorotrifluoroethane	3.75	3.93	3.98	105	106	70.0-130			1.47	25
1,1-Dichloroethene	3.75	4.03	4.05	108	108	70.0-130			0.514	25
1,1-Dichloroethane	3.75	4.02	4.03	107	107	70.0-130			0.119	25
Acetone	3.75	4.09	4.10	109	109	70.0-130			0.268	25
2-Propanol	3.75	4.20	4.15	112	111	70.0-139			1.15	25
Carbon disulfide	3.75	4.00	4.04	107	108	70.0-130			0.794	25
Methylene Chloride	3.75	3.83	3.80	102	101	70.0-130			0.887	25
MTBE	3.75	4.03	4.07	107	109	70.0-130			1.06	25
trans-1,2-Dichloroethene	3.75	4.01	4.08	107	109	70.0-130			1.70	25
n-Hexane	3.75	4.10	4.19	109	112	70.0-130			2.13	25
Vinyl acetate	3.75	4.31	4.33	115	116	70.0-130			0.473	25
Methyl Ethyl Ketone	3.75	4.09	4.18	109	111	70.0-130			2.09	25
cis-1,2-Dichloroethene	3.75	3.97	4.03	106	108	70.0-130			1.72	25
Chloroform	3.75	3.95	3.99	105	107	70.0-130			1.05	25
Cyclohexane	3.75	4.01	4.08	107	109	70.0-130			1.91	25
1,1,1-Trichloroethane	3.75	4.00	4.08	107	109	70.0-130			1.98	25
Carbon tetrachloride	3.75	4.01	4.03	107	108	70.0-130			0.573	25
Benzene	3.75	3.98	3.96	106	105	70.0-130			0.508	25
1,2-Dichloroethane	3.75	4.07	3.99	109	107	70.0-130			1.85	25
Heptane	3.75	4.26	4.31	114	115	70.0-130			1.11	25
Trichloroethylene	3.75	3.97	3.96	106	106	70.0-130			0.0148	25
1,2-Dichloropropane	3.75	3.99	4.05	106	108	70.0-130			1.60	25
1,4-Dioxane	3.75	4.14	4.16	110	111	70.0-140			0.469	25
Bromodichloromethane	3.75	3.97	4.02	106	107	70.0-130			1.42	25
cis-1,3-Dichloropropene	3.75	4.08	4.11	109	110	70.0-130			0.808	25
4-Methyl-2-pentanone (MIBK)	3.75	4.29	4.32	114	115	70.0-139			0.576	25
Toluene	3.75	4.06	4.07	108	109	70.0-130			0.272	25
trans-1,3-Dichloropropene	3.75	4.08	4.15	109	111	70.0-130			1.74	25
1,1,2-Trichloroethane	3.75	3.99	4.01	106	107	70.0-130			0.534	25
Tetrachloroethylene	3.75	3.97	3.98	106	106	70.0-130			0.268	25
Methyl Butyl Ketone	3.75	4.50	4.50	120	120	70.0-149			0.0108	25
Dibromochloromethane	3.75	4.00	4.06	107	108	70.0-130			1.57	25
1,2-Dibromoethane	3.75	3.99	4.02	106	107	70.0-130			0.618	25
Chlorobenzene	3.75	4.05	4.03	108	107	70.0-130			0.649	25

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

(LCS) R3358496-1 11/09/18 09:34 • (LCSD) R3358496-2 11/09/18 10:16

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.09	4.18	109	111	70.0-130			2.22	25
m&p-Xylene	7.50	8.40	8.62	112	115	70.0-130			2.63	25
o-Xylene	3.75	4.08	4.21	109	112	70.0-130			3.08	25
Styrene	3.75	4.15	4.20	111	112	70.0-130			1.15	25
Bromoform	3.75	4.01	4.08	107	109	70.0-130			1.93	25
1,1,2,2-Tetrachloroethane	3.75	4.04	4.10	108	109	70.0-130			1.50	25
4-Ethyltoluene	3.75	4.11	4.21	110	112	70.0-130			2.52	25
1,3,5-Trimethylbenzene	3.75	4.00	4.11	107	110	70.0-130			2.71	25
1,2,4-Trimethylbenzene	3.75	4.03	4.14	107	110	70.0-130			2.70	25
1,3-Dichlorobenzene	3.75	3.96	4.10	106	109	70.0-130			3.39	25
1,4-Dichlorobenzene	3.75	4.00	4.13	107	110	70.0-130			3.33	25
Benzyl Chloride	3.75	4.02	4.18	107	112	70.0-152			3.82	25
1,2-Dichlorobenzene	3.75	3.93	4.08	105	109	70.0-130			3.81	25
1,2,4-Trichlorobenzene	3.75	4.18	4.28	111	114	70.0-160			2.30	25
Hexachloro-1,3-butadiene	3.75	3.85	4.00	103	107	70.0-151			3.71	25
Naphthalene	3.75	4.32	4.51	115	120	70.0-159			4.19	25
TPH (GC/MS) Low Fraction	203	210	214	104	106	70.0-130			1.85	25
Allyl Chloride	3.75	4.13	4.32	110	115	70.0-130			4.51	25
2-Chlorotoluene	3.75	4.11	4.21	110	112	70.0-130			2.40	25
Methyl Methacrylate	3.75	4.18	4.10	111	109	70.0-130			1.79	25
Tetrahydrofuran	3.75	4.18	4.21	111	112	70.0-137			0.925	25
2,2,4-Trimethylpentane	3.75	4.25	4.33	113	116	70.0-130			1.93	25
Vinyl Bromide	3.75	3.81	3.95	102	105	70.0-130			3.55	25
Isopropylbenzene	3.75	4.08	4.18	109	112	70.0-130			2.45	25
(S) 1,4-Bromofluorobenzene				*100*	*101*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

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

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
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.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	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

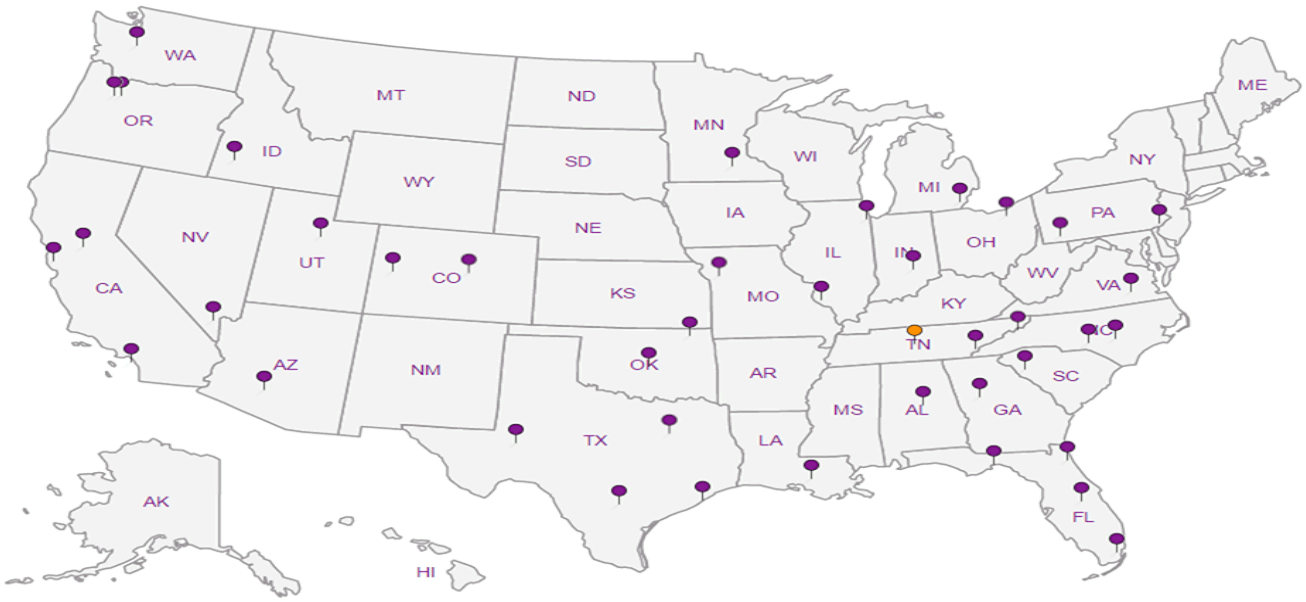
Third Party Federal Accreditations

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.



Stantec- Bellevue, WA

11130 NE 33rd Pl, Suite 200
Bellevue, WA 98004

Billing Information:
Accounts Payable- Cyrus Gorman
11130 NE 33rd Pl, Ste 200
Bellevue, WA 98004

Report to: Cyrus Gorman

Email To: cyrus.gorman@stantec.com; collin.macheel@stantec.com

Project Description:

City/State Collected: Anchorage, AK

Phone: 206-494-5029
Fax: 425-869-1190

Client Project # 1857 505 90

Lab Project # STANTECBWA-AK

Collected by (print): Jake Nelsen

Site/Facility ID #

P.O. #

Collected by (signature): Jake Nelsen

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Helium Shroud	TO-15 Summa	Remarks	Sample # (lab only)
GP-5	Grab	Air	—	11/2/18	1320-1326	1	X	X		01
GP-6		Air	—		1340-1347	1	X	X		02
GP-7		Air	—		1358-1403	1	X	X		03
GP-8		Air	—		1413-1419	1	X	X		04
GP-9		Air	—		1427-1433	1	X	X		05

Chain of Custody Page 1 of 1

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Tab D075

Acctnum: STANTECBWA

Template: T141750

Prelogin: P676583

TSR: 110 - Brian Ford

PB: BF 10/11/18

Shipped Via: FedEX 2nd Day

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking # 451016609391 / 9770/9780

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Jake Nelsen	11/2/18	1820		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: Amb °C Bottles Received: 5
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/5/18 Time: 1000

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

APPENDIX E

Data Validation Reports

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Pace Analytical
Lab SDG/Project/Work Order:	L1036522
Project Name:	Municipality of Anchorage, Alaska (Cooperative Agreement BF-01J39201) 726 E. 12th Ave.
Stantec Project Number:	185750590
Client:	Municipality of Anchorage
Validator Name:	Sarah Von Raesfeld
Date of Validation:	November 10, 2018

SAMPLE INFORMATION:

Number of Samples:	Eleven
Matrix:	Soil
Number of Trip Blanks:	One
Number of Equipment Blanks:	None
Number of Field Duplicates	One (GP-5-0.5DUP is a field duplicate of GP-5-0.5)
Date of Sample Collection:	October 16, 2018

Sample:	Analyses:	Batch:
GP-1-0.5	PAHs (SW8270D SIM)	WG1184273
	PCBs (SW8082A)	WG1184268
	Metals (SW6010C)	WG1185417
	Mercury (SW7471A)	WG1184356
	Total Solids (SM2540G)	WG1185858
GP-2-0.5	PAHs (SW8270D SIM)	WG1184273
	PCBs (SW8082A)	WG1184268
	Metals (SW6010C)	WG1185417
	Mercury (SW7471A)	WG1184356
	Total Solids (SM2540G)	WG1185858
GP-3-0.5	PAHs (SW8270D SIM)	WG1184273
	PCBs (SW8082A)	WG1184268
	Metals (SW6010C)	WG1185417
	Mercury (SW7471A)	WG1184356
	Total Solids (SM2540G)	WG1185858
GP-4-0.5	VOCs (SW8260C)	WG1186559
	PAHs (SW8270D SIM)	WG1184273
	PCBs (SW8082A)	WG1184268
	Total Solids (SM2540G)	WG1185858
GP-4-3	VOCs (SW8260C)	WG1186559
	PAHs (SW8270D SIM)	WG1184273
	PCBs (SW8082A)	WG1184268
	Total Solids (SM2540G)	WG1185858
GP-5-0.5	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185858

Sample:	Analyses:	Batch:
GP-5-10	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185858
GP-5-0.5DUP	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185858
GP-6-0.5	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185858
GP-6-10	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185858
GP-5-25	VOCs (SW8260C)	WG1186559
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1184273
	Total Solids (SM2540G)	WG1185866
TRIP BLANK	VOCs (SW8260C)	WG1186559

GENERAL DATA VALIDATION:

Case Narrative:

The laboratory case narrative noted surrogate and QC sample spike recoveries that were outside laboratory control limits. Non-conformances, and any associated qualified data, are detailed below.

Chain of Custody:

COC is complete. All requested analyses were performed.

Sample Receipt:

The samples were received within the acceptable temperature range of 0° - 6° C.

Holding Times:

All samples were analyzed within the required method holding times.

Trip Blank Review:

The trip blank contained 0.00407 mg/kg of naphthalene and 0.00654 mg/kg of toluene. Toluene in five samples, and naphthalene in one sample, were detected below the reporting limit. The results were qualified as not detected (U) at the MRL.

Equipment Blank Review:

Not Applicable.

Surrogates:

The percent recovery of the VOC surrogate 4-bromofluorobenzene exceeded the laboratory upper control limit in sample GP-5-25. Detected VOCs were qualified as estimated (J).

Elevated Reporting Limits:
Six PAHs were analyzed at a 5x dilution in five samples.
DRO was analyzed at a dilution in samples GP-5-25 (3x) and GP-6-0.5 (5x).
Sample MDLs and MRLs were raised accordingly; no data were qualified.

PER ANALYSES:

Volatile Organic Compounds, *Method 8260C* (Batch WG1186559)

Method Blanks:
Methylene chloride were detected in the method blank at 0.00736 mg/kg. The trip blank sample had methylene chloride detected below the reporting limit and was qualified as not detected (U) at the MRL. No other data were qualified.

Laboratory Control Sample/Laboratory Control Sample Duplicate:
The LCS percent recoveries percent recoveries were within the acceptance limits. No LCSD was analyzed. No qualifiers are needed

Matrix Spike/Matrix Spike Duplicate:
No MS/MSD analyzed.

Diesel Range Organics, *Method AK102* (Batch WG1187254)

Method Blank:
No analytes were detected above the MDL in the laboratory method blank. No qualifiers needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:
The LCS/LCSD percent recoveries were below the lower acceptance limit for DRO. Associated DRO results were qualified as estimated; detected values were J-flagged and non-detect values were UJ-flagged.

Matrix Spike/Matrix Spike Duplicate:
The MS/MSD was not performed on a project sample.

Polycyclic Aromatic Hydrocarbons, Method 8270D SIM (Batch WG1184273)

Method Blank:
No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:
The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed

Matrix Spike/Matrix Spike Duplicate:
The MS/MSD was not performed on a project sample.

Polychlorinated Biphenyls, Method 8082A (Batch WG1184268)

Method Blank:
No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:
The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed

Matrix Spike/Matrix Spike Duplicate:
The MS/MSD was not performed on a project sample.

RCRA Metals, *Method 6010C* (Batch WG1185147)
Method Blank: No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample/Laboratory Control Sample Duplicate: The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
Matrix Spike/Matrix Spike Duplicate: The MS/MSD was not performed on a project sample.
Mercury, *Method 7471A* (Batch WG1184356)
Method Blank: No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample/Laboratory Control Sample Duplicate: The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
Matrix Spike/Matrix Spike Duplicate: The MS/MSD was not performed on a project sample.

FIELD DUPLICATE REVIEW:

One field duplicate sample was collected. Sample GP-5-0.5DUP is a field duplicate of sample GP-5-0.5. RPDs are calculated between the results of the original and field duplicate samples for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. No detections met this criterion and therefore no qualifiers are needed.

DETERMINATION:
The data in this work order have been validated. All data that have not been rejected ("R" flagged) are usable as qualified:

Sample ID	Method	Analyte	Original Result (mg/kg)	Final Result (mg/kg)	Reason
GP-4-0.5	SW8260C	Toluene	0.00154 J	0.00519 U	TB Detection
GP-5-0.5	AK102	DRO	5.56 UJ4	5.56 UJ	LCS %R < LAL
GP-5-0.5	SW8260C	Naphthalene	0.004 J	0.0149 U	TB Detection
GP-5-0.5	SW8260C	Toluene	0.00407 J	0.00594 U	TB Detection
GP-5-0.5DUP	AK102	DRO	9.98 JJ4	9.98 J	LCS %R < LAL
GP-5-0.5DUP	SW8260C	Toluene	0.00266 J	0.00623 U	TB Detection
GP-5-10	AK102	DRO	5.21 UJ4	5.21 UJ	LCS %R < LAL
GP-5-25	SW8260C	Benzene	0.00224	0.00224 J	SURR %R > UAL
GP-5-25	SW8260C	Butylbenzene, sec-	0.205	0.205 J	SURR %R > UAL
GP-5-25	SW8260C	Butylbenzene, tert-	0.0122	0.0122 J	SURR %R > UAL
GP-5-25	SW8260C	Chlorobenzene	0.0174	0.0174 J	SURR %R > UAL
GP-5-25	SW8260C	Ethylbenzene	0.00249 J	0.00249 J	SURR %R > UAL
GP-5-25	SW8260C	Isopropylbenzene	0.00702	0.00702 J	SURR %R > UAL
GP-5-25	SW8260C	Isopropyltoluene, p-	0.0103	0.0103 J	SURR %R > UAL
GP-5-25	SW8260C	Methyl Ethyl Ketone	0.0857	0.0857 J	SURR %R > UAL
GP-5-25	SW8260C	Naphthalene	0.239	0.239 J	SURR %R > UAL
GP-5-25	SW8260C	Propylbenzene, n-	0.022	0.022 J	SURR %R > UAL
GP-5-25	SW8260C	Toluene	0.00278 J	0.006 U	TB Detection
GP-5-25	SW8260C	Trichloroethane, 1,1,2-	0.17	0.17 J	SURR %R > UAL
GP-5-25	SW8260C	Trimethylbenzene, 1,2,4-	0.0524	0.0524 J	SURR %R > UAL
GP-5-25	AK102	DRO	132 J4	132 J	LCS %R < LAL
GP-6-0.5	SW8260C	Toluene	0.00526 J	0.00536 U	TB Detection
GP-6-0.5	AK102	DRO	27.6 JJ4	27.6 J	LCS %R < LAL
GP-6-10	AK102	DRO	5.26 UJ4	5.26 UJ	LCS %R < LAL
TRIP BLANK	SW8260C	Methylene Chloride	0.00825 BJ	0.025 U	MB Detection

%R – percent recovery
DRO – diesel range organics
LAL – lower acceptance limit
LCS – laboratory control sample
MB – method blank
SURR – surrogate
TB – trip blank
UAL – upper acceptance limit

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.

- UJ Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).

- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.

- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (*USEPA) National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2016-002*. Office of Superfund Remediation and Technology Innovation (OSRTI). September 2016.

EPA. 2017. *USEPA National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-2017-001. OSRTI*. January 2017.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Pace Analytical
Lab SDG/Project/Work Order:	L1037317
Project Name:	Municipality of Anchorage, Alaska (Cooperative Agreement BF-01J39201) 726 E. 12th Ave.
Stantec Project Number:	185750590
Client:	Municipality of Anchorage
Validator Name:	Sarah Von Raesfeld
Date of Validation:	November 12, 2018

SAMPLE INFORMATION:

Number of Samples:	Seven
Matrix:	Soil
Number of Trip Blanks:	One
Number of Equipment Blanks:	None
Number of Field Duplicates	None
Date of Sample Collection:	October 19, 2018

Sample:	Analyses:	Batch:
GP-9-0.5	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
GP-9-10	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
GP-8-0.5	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
GP-8-10	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
GP-7-0.5	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
GP-7-10	VOCs (SW8260C)	WG1187558, WG1186927
	DRO/RRO (AK102/103)	WG1187254
	PAHs (SW8270D SIM)	WG1187246
	Total Solids (SM2540G)	WG1187333
TRIP BLANK	VOCs (SW8260C)	WG1187558, WG1186927

GENERAL DATA VALIDATION:

Case Narrative:
The laboratory case narrative noted spike sample recoveries that were outside laboratory control limits. Non-conformances and any associated qualified data are detailed below.

Chain of Custody:
COC is complete. All requested analyses were performed.

Sample Receipt:
The samples were received within the acceptable temperature range of 0° - 6° C.

Holding Times:
All samples were analyzed within the required method holding times.

Trip Blank Review:

Several VOCs were detected in TRIP BLANK; the VOCs were not detected in the associated samples, or were detected at concentrations exceeding the trip blank, and were not qualified.

Equipment Blank Review:
Not Applicable.

Surrogates:
All surrogate percent recoveries were within laboratory acceptance criteria.

Elevated Reporting Limits:

DRO in sample GP-9-0.5 was analyzed at a 50x dilution; the sample MRL was raised accordingly.

PER ANALYSES:

Volatile Organic Compounds, *Method 8260C* (Batch WG1187558, WG1186927)

Method Blanks:
No VOCs were detected above the MDL in the laboratory method blanks. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:
The LCS percent recovery was greater than the upper acceptance limit for 2,2-dichloropropane in batch WG186927. 2,2-Dichloropropane was not detected in the associated samples; no data were qualified.

No LCSD was analyzed.

Matrix Spike/Matrix Spike Duplicate:
MS/MSD was performed on sample GP-9-0.5; spike recoveries and/or RPDs were outside of the laboratory acceptance limits for several VOCs. Results for n-butylbenzene and toluene were qualified as estimated non-detects (UJ) due to low spike recoveries. The remaining samples results were not qualified

Diesel Range and Residual Range Organics, *Methods AK102/AK103* (Batch WG1187254)
Method Blank: No analytes were detected above the MDL in the laboratory method blank. No qualifiers needed.
Laboratory Control Sample/Laboratory Control Sample Duplicate: The LCS/LCSD percent recoveries and RPD were below the lower acceptance limit for DRO. Associated samples with no detectable concentrations of DRO were qualified as estimated non-detects (UJ); detected DRO results were qualified as estimated (J).
Matrix Spike/Matrix Spike Duplicate: The MS/MSD was performed on sample GP-9-0.5; spike recoveries were less than the lower acceptance limit. DRO was not detected in the samples and was qualified as an estimated non-detect (UJ).
Polycyclic Aromatic Hydrocarbons, Method 8270D SIM (Batch WG1187246)
Method Blank: No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample/Laboratory Control Sample Duplicate: The LCS/LCSD percent recoveries were within the acceptance limits, however; LCS/LCSD RPDs exceeded the acceptance criteria for several PAHs. Detected results associated with these RPDs were qualified as estimated (J).
Matrix Spike/Matrix Spike Duplicate: The MS/MSD was not performed on a project sample.

FIELD DUPLICATE REVIEW:

No field duplicates were collected with this SDG.

DETERMINATION:
The data in this work order have been validated. All data that have not been rejected ("R" flagged) are usable as qualified:

Sample ID	Method	Analyte	Result (mg/kg)	Reason
GP-9-0.5	AK102	DRO	285 UJ	LCS %R < LAL
GP-9-0.5	8260C	Butylbenzene, n-	0.0141 J	MS/MSD %R < LAL
GP-9-0.5	8260C	Toluene	0.127 J	MS/MSD %R < LAL
GP-9-0.5	8270D SIM	Pyrene	0.0739 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Benzo(g,h,i)perylene	0.0712 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Indeno(1,2,3-cd)pyrene	0.0393 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Fluoranthene	0.0982 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Chrysene	0.0456 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Benzo(a)pyrene	0.0415 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Dibenzo(a,h)anthracene	0.00511 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Benzo(a)anthracene	0.0362 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Acenaphthene	0.00271 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Phenanthrene	0.0446 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Fluorene	0.00538 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Methylnaphthalene, 1-	0.00451 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Naphthalene	0.0133 J	LCS/LCSD RPD > CL
GP-9-0.5	8270D SIM	Methylnaphthalene, 2-	0.00771 J	LCS/LCSD RPD > CL
GP-9-10	AK102	DRO	5.26 UJ	LCS %R < LAL
GP-8-0.5	AK102	DRO	35.1 J	LCS %R < LAL
GP-8-0.5	8270D SIM	Pyrene	0.00141 J	LCS/LCSD RPD > CL
GP-8-0.5	8270D SIM	Indeno(1,2,3-cd)pyrene	0.000706 J	LCS/LCSD RPD > CL
GP-8-0.5	8270D SIM	Phenanthrene	0.00392 J	LCS/LCSD RPD > CL
GP-8-0.5	8270D SIM	Methylnaphthalene, 1-	0.00294 J	LCS/LCSD RPD > CL
GP-8-0.5	8270D SIM	Methylnaphthalene, 2-	0.00644 J	LCS/LCSD RPD > CL
GP-8-10	AK102	DRO	5.23 UJ	LCS %R < LAL
GP-7-0.5	AK102	DRO	9.39 J	LCS %R < LAL
GP-7-10	AK102	DRO	5.26 UJ	LCS %R < LAL

%R – percent recovery
CL – control limit
DRO – diesel range organics
LAL – lower acceptance limit
LCS/LCSD – laboratory control spike/laboratory control spike duplicate
MS/MSD – matrix spike/matrix spike duplicate
RPD – relative percent difference

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.

- UJ Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).

- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.

- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (*USEPA) National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2016-002*. Office of Superfund Remediation and Technology Innovation (OSRTI). September 2016.

EPA. 2017. *USEPA National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-2017-001. OSRTI*. January 2017.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Pace Analytical
Lab SDG/Project/Work Order:	L1038850
Project Name:	Municipality of Anchorage, Alaska (Cooperative Agreement BF-01J39201) 726 E. 12th Ave.
Stantec Project Number:	185750590
Client:	Municipality of Anchorage
Validator Name:	Sarah Von Raesfeld
Date of Validation:	November 18, 2018

SAMPLE INFORMATION:

Number of Samples:	Seven
Matrix:	Water
Number of Trip Blanks:	One
Number of Equipment Blanks:	None
Number of Field Duplicates	One
Date of Sample Collection:	October 23, 2018

Sample:	Analyses:	Batch:
GP-9	VOCs (SW8260C)	WG1188101
GP-8	VOCs (SW8260C)	WG1188101
GP-7	VOCs (SW8260C)	WG1188101
GP-6	VOCs (SW8260C)	WG1188101
GP-6-DUP	VOCs (SW8260C)	WG1188101
GP-5	VOCs (SW8260C)	WG1189757
TRIPBLANK	VOCs (SW8260C)	WG1188101

GENERAL DATA VALIDATION:

Case Narrative:
The laboratory case narrative noted method blank detections and spike sample recoveries that were outside laboratory control limits. Non-conformances and any associated qualified data are detailed below.

Chain of Custody:
COC is complete. All requested analyses were performed.

Sample Receipt:
The samples were received within the acceptable temperature range (0° - 6° C).

Holding Times:
All samples were analyzed within the required method holding times.

Trip Blank Review:
No VOCs were detected above the method detection limit in the trip blank.

Equipment Blank Review:
Not Applicable.

Surrogates:
All surrogate percent recoveries were within laboratory acceptance criteria.

Elevated Reporting Limits:
No elevated MRLs were reported.

PER ANALYSES:

Volatile Organic Compounds, *Method 8260C* (Batch WG1188101 and WG1189757)

Method Blanks:
Toluene was detected at 0.60 µg/L in the method blank for batch WG118101. Hexachloro-1,3-butadiene and 1,2,3-trichlorobenzene were detected at 0.280 and 0.251 µg/L, respectively, in the method blank for batch WG1189757. The VOCs were not detected in the associated samples; no data were qualified.

LCS/LCSD:
LCS/LCSD percent recoveries exceeded the upper acceptance limit for 2,2-dichloropropane in batch WG118101. 2,2-Dichloropropane was not detected in the associated samples; no data were qualified.

No LCSD was analyzed.

MS/MSD:
MS/MSD was not performed on a project sample.

FIELD DUPLICATE REVIEW:
One field duplicate sample was collected. Sample GP-6-DUP is a field duplicate of sample GP-6. RPDs are calculated between the results of the original and field duplicate samples for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. No detections met this criterion and therefore no qualifiers are needed.

DETERMINATION:
The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.

- UJ Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).

- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.

- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (*USEPA) National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2016-002*. Office of Superfund Remediation and Technology Innovation (OSRTI). September 2016.

EPA. 2017. *USEPA National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-2017-001. OSRTI*. January 2017.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Pace Analytical
Lab SDG/Project/Work Order:	L1041150
Project Name:	Municipality of Anchorage, Alaska (Cooperative Agreement BF-01J39201) 726 E. 12th Ave.
Stantec Project Number:	185750590
Client:	Municipality of Anchorage
Validator Name:	Sarah Von Raesfeld
Date of Validation:	November 10, 2018

SAMPLE INFORMATION:

Number of Samples:	Five
Matrix:	Soil Vapor
Number of Trip Blanks:	None
Number of Equipment Blanks:	None
Number of Field Duplicates	None
Date of Sample Collection:	November 2, 2018

Sample:	Analyses:	Batch:
GP-5	VOCs (EPA TO-15)	WG1193314
	Helium (ASTM 1946)	WG1191864
GP-6	VOCs (EPA TO-15)	WG1193314
	Helium (ASTM 1946)	WG1191864
GP-7	VOCs (EPA TO-15)	WG1193886
	Helium (ASTM 1946)	WG1191864
GP-8	VOCs (EPA TO-15)	WG1193886
	Helium (ASTM 1946)	WG1191864
GP-9	VOCs (EPA TO-15)	WG1193886
	Helium (ASTM 1946)	WG1191864

GENERAL DATA VALIDATION:

Case Narrative:
The laboratory case narrative noted method blank detections. Laboratory non-conformances and any associated qualified data are detailed below.

Chain of Custody:
COC is complete. All requested analyses were performed.

Sample Receipt:
The samples were received within the acceptable temperature range (0° - 6° C).

Holding Times:
All samples were analyzed within the required method holding times.

Trip Blank Review:

Not Applicable.

Equipment Blank Review:

Not Applicable.

Surrogates:

All surrogate percent recoveries were within laboratory acceptance criteria.

Elevated Reporting Limits:

VOCs were analyzed at a 2x dilution for all five samples. Sample MRLs were raised accordingly; no data were qualified.

PER ANALYSES:

Volatile Organic Compounds, *Method 8260C* (Batch WG1193314 and WG1193886)

Method Blanks:

Eight VOCs were detected below the MRL in the method blank for batch WG1193314. VOCs that were detected in the associated samples were present above the MRL and were not qualified.

Laboratory Control Sample/Laboratory Control Sample Duplicate:

LCS/LCSD percent recoveries were within the acceptance criteria. No qualifiers are needed.

Matrix Spike/Matrix Spike Duplicate:

A MS/MSD sample was not analyzed.

FIELD DUPLICATE REVIEW:

No field duplicates were collected with this SDG.

DETERMINATION:

The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.

- UJ Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).

- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.

- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (*USEPA) National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2016-002*. Office of Superfund Remediation and Technology Innovation (OSRTI). September 2016.

EPA. 2017. *USEPA National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-2017-001. OSRTI*. January 2017.

APPENDIX F

Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Sarah Von Raesfeld

Title:

Municipality of Anchorage, Alaska; 726 E. 12th Ave.

Date:

November 10, 2018

CS Report Name:

Limited Phase II Environmental Site Assessment Report
726 East 12th Avenue
Anchorage, Alaska
Cooperative Agreement
Number: BF-01J39201

Report Date:

October 31, 2018

Consultant Firm:

Stantec

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1036522

ADEC File Number:

NA

Hazard Identification Number:

NA

L1036522

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

   Not Applicable

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☑ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☐ No Comments:

Not applicable

e. Data quality or usability affected?

Comments:

Not applicable

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☑ No Comments:

Not applicable

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The lab did not narrate potential effects on data quality.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

Data were reported to the MDL and two times the MDL was used to compare non-detects to applicable screening levels. The calculated MDL did not meet criteria for 1,2-dibromo-3-chloropropane, ethylene dibromide, hexachlorobutadiene, 1,1,2-trichlorethane, 1,2,3-trichloropropane, and vinyl chloride.

e. Data quality or usability affected?

☐ Yes ☑ No Comments:

Unable to assess presence of the affected VOCs at cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☐ Yes ☑ No Comments:

Methylene chloride was detected below the MRL but above the MDL in the VOC method blank

iii. If above LOQ, what samples are affected?

Comments:

TRIP BLANK

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

Data are usable as qualified.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐ Yes ☑ No Comments:

The LCS/LCSD percent recoveries were below the lower acceptance limit for DRO.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

GP-5-0.5, GP-5-0.5DUP, GP-5-0.5, GP-5-10, GP-5-25, GP-6-0.5, GP-6-10

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

All data are usable as qualified.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☑ No Comments:

One VOC surrogate exceeded acceptance criteria in GP-5-25

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

Not applicable

iv. Data quality or usability affected?

Comments:

The data are usable as qualified.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☑ No Comments:

The approved QAPP did not require cooler numbers.

iii. All results less than LOQ?

☐ Yes ☒ No Comments:

Naphthalene and toluene were detected above the MDL but below the MRL in TRIP BLANK.

iv. If above LOQ, what samples are affected?

Comments:

GP-4-0.5, GP-5-0.5, GP-5-0.5DUP, GP-5-25, GP-6-0.5

v. Data quality or usability affected?

Comments:

The data are usable as qualified.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No Comments:

ii. Submitted blind to lab?

☐ Yes ☒ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Not applicable

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☐ No ☒ Not Applicable

Non-dedicated, reusable sampling equipment was not used.

i. All results less than LOQ?

☐ Yes ☒ No Comments:

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

Laboratory Data Review Checklist

Completed By:

Sarah Von Raesfeld

Title:

Municipality of Anchorage, Alaska; 726 E. 12th Ave.

Date:

November 10, 2018

CS Report Name:

Limited Phase II Environmental Site Assessment Report
726 East 12th Avenue
Anchorage, Alaska
Cooperative Agreement
Number: BF-01J39201

Report Date:

October 31, 2018

Consultant Firm:

Stantec

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1037317

ADEC File Number:

NA

Hazard Identification Number:

NA

L1037317

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

   Not Applicable

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☒ No Comments:

Not applicable

e. Data quality or usability affected?

Comments:

Not applicable

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☒ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

Not applicable

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The lab did not narrate potential effects on data quality.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

Data were reported to the MDL and two times the MDL was used for comparison to applicable screening levels. The calculated MDL did not meet criteria for 1,2-dibromo-3-chloropropane, ethylene dibromide, hexachlorobutadiene, 1,1,2-trichlorethane, 1,2,3-trichloropropane, and vinyl chloride.

e. Data quality or usability affected?

☑ Yes ☐ No Comments:

Unable to assess presence of the affected VOCs at cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

Method blanks were reported to the MDL; there were no detects above the MDL.

iii. If above LOQ, what samples are affected?

Comments:

Not applicable

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

Not applicable

v. Data quality or usability affected?

Comments:

Not applicable

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☑ No Comments:

Not applicable

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐ Yes ☑ No Comments:

The LCS percent recovery was greater than the upper acceptance limit for 2,2-dichloropropane in VOC batch WG186927.
The LCS/LCSD percent recoveries were below the lower acceptance limit for DRO in batch WG1187254.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☐ Yes ☑ No Comments:

VOCs: The MS/MSDs RPDs exceeded the acceptance limit for several VOCs in sample GP-9-0.5.
TPH: The LCS/LCSD RPD exceeded the acceptance limit for DRO in batch WG1187254.
PAHs: LCS/LCSD RPDs exceeded the acceptance criteria for several PAHs.in batch WG1187246.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

GP-9-0.5, GP-9-10, GP-8-0.5, GP-8-10, GP-7-0.5, and GP-7-10.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

Not applicable

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

All data are usable as qualified.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☒ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No Comments:

Not applicable

iv. Data quality or usability affected?

Comments:

Not applicable

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

The approved QAPP did not require cooler numbers.

iii. All results less than LOQ?

☐ Yes ☑ No Comments:

Several VOCs were detected between the MDL and MRL in TRIP BLANK.

iv. If above LOQ, what samples are affected?

Comments:

No samples were affected.

v. Data quality or usability affected?

Comments:

Not applicable

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Field duplicates are included in a separate SDG

ii. Submitted blind to lab?

☐ Yes ☑ No Comments:

Not applicable

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐ Yes ☒ No Comments:

Not applicable

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Not applicable

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☐ No ☒ Not Applicable

Non-dedicated, reusable sampling equipment was not used.

i. All results less than LOQ?

☐ Yes ☒ No Comments:

Not applicable

ii. If above LOQ, what samples are affected?

Comments:

Not applicable

iii. Data quality or usability affected?

Comments:

Not applicable

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☉ Yes ○ No Comments:

Laboratory Data Review Checklist

Completed By:

Sarah Von Raesfeld

Title:

Municipality of Anchorage, Alaska; 726 E. 12th Ave.

Date:

November 18, 2018

CS Report Name:

Limited Phase II Environmental Site Assessment Report
726 East 12th Avenue
Anchorage, Alaska
Cooperative Agreement
Number: BF-01J39201

Report Date:

November 5, 2018

Consultant Firm:

Stantec

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1038850

ADEC File Number:

NA

Hazard Identification Number:

NA

L1038850

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

   Not Applicable

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☒ No Comments:

Not applicable

e. Data quality or usability affected?

Comments:

Not applicable

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☒ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☒ No Comments:

Not applicable

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The lab did not narrate potential effects on data quality.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☐ Yes ☑ No Comments:

Not applicable

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

Data were reported to the MDL and two times the MDL was used for comparison to applicable screening levels. The calculated MDL did not meet criteria for ethylene dibromide, naphthalene, 1,1,2-trichlorethane, 1,2,3-trichloropropane, trichlorotrifluoroethane, and vinyl chloride.

e. Data quality or usability affected?

☑ Yes ☐ No Comments:

Unable to assess presence of the affected VOCs at cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

Method blanks were reported to the MDL; one or more VOCs were detected in batches WG118101 and WG1189757

iii. If above LOQ, what samples are affected?

Comments:

None.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

Not applicable

v. Data quality or usability affected?

Comments:

No.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☑ No Comments:

Not applicable

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐ Yes ☒ No Comments:

VOCs: The LCS percent recovery was greater than the upper acceptance limit for 2,2-dichloropropane in batch WG118101.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No Comments:

GP-6, GP-7, GP-8, GP-9, TRIPBLANK

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No data were qualified

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

Not applicable

iv. Data quality or usability affected?

Comments:

No; no data were qualified.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☑ No Comments:

The approved QAPP did not require cooler numbers.

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

No VOCs were detected above the MDL.

iv. If above LOQ, what samples are affected?

Comments:

Not applicable

v. Data quality or usability affected?

Comments:

No

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☑ Yes ☐ No Comments:

Not applicable

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Not applicable

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☐ No ☒ Not Applicable

Non-dedicated, reusable sampling equipment was not used.

i. All results less than LOQ?

☐ Yes ☒ No Comments:

Not applicable

ii. If above LOQ, what samples are affected?

Comments:

Not applicable

iii. Data quality or usability affected?

Comments:

Not applicable

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

Laboratory Data Review Checklist

Completed By:

Sarah Von Raesfeld

Title:

Municipality of Anchorage, Alaska; 726 E. 12th Ave.

Date:

November 10, 2018

CS Report Name:

Limited Phase II Environmental Site Assessment Report
726 East 12th Avenue
Anchorage, Alaska
Cooperative Agreement
Number: BF-01J39201

Report Date:

October 31, 2018

Consultant Firm:

Stantec

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1041150

ADEC File Number:

NA

Hazard Identification Number:

NA

L1041150

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

   Not Applicable

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☒ No Comments:

Not applicable

e. Data quality or usability affected?

Comments:

Not applicable

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☐ Yes ☒ No Comments:

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

Not applicable

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Not applicable

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☐ Yes ☑ No Comments:

Not applicable

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

Data were reported to the MRL; MRL values did not meet requirements for ethylene dibromide, hexachlorobutadiene, and 1,1,2-trichlorethane.

e. Data quality or usability affected?

☑ Yes ☐ No Comments:

Unable to assess presence of the affected VOCs at cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

Eight VOCs were detected above the MRL in batch WG1193314.

iii. If above LOQ, what samples are affected?

Comments:

GP-5, GP-6, GP-7, GP-8. GP-9

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

Data are usable as qualified.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☑ No Comments:

Not applicable

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Not applicable

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Not applicable

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

Not applicable

iv. Data quality or usability affected?

Comments:

Not applicable

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

☐ Yes ☒ No Comments:

Trip blanks not required for soil vapor samples.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☒ No Comments:

Not applicable

iii. All results less than LOQ?

☒ Yes ☐ No Comments:

Not applicable

iv. If above LOQ, what samples are affected?

Comments:

Not applicable

v. Data quality or usability affected?

Comments:

Not applicable

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☐ Yes ☒ No Comments:

ii. Submitted blind to lab?

☐ Yes ☒ No Comments:

Not applicable

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐ Yes ☒ No Comments:

Not applicable

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Not applicable

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☐ No ☒ Not Applicable

Non-dedicated, reusable sampling equipment was not used.

i. All results less than LOQ?

☐ Yes ☒ No Comments:

Not applicable

ii. If above LOQ, what samples are affected?

Comments:

Not applicable

iii. Data quality or usability affected?

Comments:

Not applicable

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments: