



December 14, 2020

Mr. John Robertshaw
Brunswick Property Holdings Ltd.
2960 Altamont Crescent
West Vancouver, BC V7V 3C1

Dear Mr. Robertshaw:

**Re: Report of Findings – Phase II Environmental Site Assessment
10582 and 10620/10626 Scott Road, Surrey, BC
Project No. 15934**

This letter report presents the findings of a KEYSTONE ENVIRONMENTAL™ Phase II Environmental Site Assessment (ESA) prepared at the request of Brunswick Property Holdings Ltd. for the properties referenced as 10582 and 10620/10626 Scott Road, Surrey, BC (the Site). The Site is comprised of three District Lots. The 10620/10626 Scott Road property is currently occupied by a vacant residence and two portable and/or open-sided truck and tire servicing structures. The 10582 Scott Road property is currently occupied by a trailer repair shop. The Site location is shown on the attached Figure 1. It is understood that the Phase II ESA will be used for due diligence purposes prior to the potential purchase and redevelopment of the Site by the Vancouver Fraser Port Authority (VFPA).

1. BACKGROUND

Keystone Environmental Ltd. (Keystone Environmental) undertook a Phase I Environmental Site Assessment (ESA) for the Site in September 2020. The 10620/10626 Scott Road property is currently occupied by a vacant residence and two portable and/or open-sided truck and tire servicing structures, the central portion is a gravel covered truck storage area, and the east portion of the property is a vegetated wetland. The northwest portion of 10582 Scott Road property is currently occupied by a trailer repair shop, the southwest and central portions are gravel covered and used for trailer storage, and the east portion of the property is a forest and/or wetland.

The following table defines areas of potential environmental concern (APECs) and the associated potential contaminants of concern (PCOCs) identified in the Phase I ESA. The APECs are illustrated on attached Figure 2.

APEC Description	Sample Location	Potential Contaminants of Concern		
		Soil	Groundwater	Vapour
APEC 1: On-Site Fill Material of Unknown Quality and Origin	All sample locations	PHC F1-F4 LEPH, HEPH, PAH, metals	PHC F1-F4 LEPHw, PAH, dissolved metals	naphthalene
APEC 2: Former On-Site Auto Repair and Auto Body Repair Operations at 10620 Scott Road	MW20-11	PHC F1-F4 LEPH, HEPH, PAH, VOC, VPH, glycols, metals	PHC F1-F4 LEPHw, PAH, VOC, VPHw, glycols, dissolved metals	*naphthalene, VOC, VPHv
APEC 3: Former and Current On-Site Truck and Trailer Maintenance Operations	MW/SV20-10, MW/SV20-12 (two maintenance buildings), MW20-5, MW20-7, MW20-9, MW20-15 (central and east portions of the Site)	PHC F1-F4 LEPH, HEPH, PAH, VOC, VPH, glycols, metals	PHC F1-F4 LEPHw, PAH, VOC, VPHw, glycols, dissolved metals	naphthalene, VOC, VPHv
APEC 4: Off-Site Former Service Station at 10648 Scott Road	MW/SV20-13	n/a	PHC F1-F4 LEPHw, PAH, VOC, VPHw, dissolved metals	naphthalene, VOC, VPHv

APEC – area of potential environmental concern

VOC – volatile organic compounds

LEPH – light extractable petroleum hydrocarbons

PAH – polycyclic aromatic hydrocarbons

*Keystone Environmental was unable to collect a vapour sample at MW20-11 due to proximity of groundwater to surface.

PCOC – potential constituents of concern

PHC F1-F4 – petroleum hydrocarbon fractions 1-4

VPH – volatile petroleum hydrocarbons

HEPH – heavy extractable petroleum hydrocarbons

Based on the results of the Phase 1 ESA, it was concluded that further investigation of APECs was warranted.

2. STUDY LIMITATIONS

Findings presented in this report are based upon the results of a field investigation including soil, groundwater, and soil vapour sample analyses. Geologic observations and analytical results reflect conditions encountered at a specific test location. Site conditions (geologic, hydrogeologic, and chemical characterization) may vary from that extrapolated from the data collected during this investigation. Consequently, while findings and conclusions documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work, this report is not intended, nor is it able to provide a totally comprehensive review of present or past site environmental conditions.

This report has been prepared solely for the internal use of Brunswick Property Holdings Ltd. pursuant to the agreement between Keystone Environmental Ltd. and Brunswick Property Holdings Ltd. By using this letter report Brunswick Property Holdings Ltd. agrees that they will review and use the letter report in its entirety. Any use which other parties make of this letter report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this letter report.

3. REGULATORY FRAMEWORK

Although the Site is currently provincially regulated land, if the Site is purchased by the VFPA, federal guidelines would apply to the Site. As such, results of the laboratory analyses were compared to the federal guidelines and provincial standards.

3.1 Federal Guidelines

The federal regulations used for comparison of soil and groundwater analytical results are contained in the following documents:

- Canadian Environmental Quality Guidelines (CEQG) published by the Canadian Council of Ministers of the Environment (CCME), 1999, last updated in 2014.
- CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil, May 1, 2001, revised in January, 2008.
- Guidelines for Canadian Drinking Water Quality. Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment (Health Canada. 2010).

3.1.1 Soil

CCME Canada Wide Standards for Petroleum Hydrocarbons

CCME soil quality guidelines are applicable to properties under federal jurisdiction. Soil quality guidelines are specific to the intended or current land use at a site. The CEGG include criteria for four specific land uses:

- Agricultural (AL)
- Residential/Parkland (RL/PL)
- Commercial (CL)
- Industrial (IL)

The CCME developed tier-based specific standards for petroleum hydrocarbons (PHCs) F1-F4, which are described in the *Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil* document, dated January 2008. The Canada Wide Standards (CWS) for PHC have been designed to apply to agricultural, residential, parkland, commercial and industrial land uses and are further divided by soil grain size; either coarse or fine grained.

CWS for PHC are site-specific and are divided into three “Tiers”: Tier 1 (generic); Tier 2 (site-specific); and Tier 3 (risk-based). Generic site parameters including type of PHC contamination, land-use information (current and future), and soil texture are captured within the Tier 1 criteria considerations. During intrusive investigations conducted at the Site, both fine and coarse grained materials were observed. Therefore, as a conservative measure, the more stringent coarse-grained soil guidelines were applied.

The Site is currently zoned for agricultural land use and is used for commercial land use. In addition, it is understood that if VFPA purchases the Site it may be redeveloped for industrial land use. Therefore CCME AL, CL and IL guidelines have been applied. CCME CL and IL standards are the most applicable standards at the Site based on current and potential future land use; however, exceedances of the AL standards at the Site have been summarized for reference purposes.

3.1.2 Surface Water and Groundwater

Federal Interim Groundwater Quality Guidelines and CCME Water Quality Guidelines

Environment Canada has developed the Federal Contaminated Sites Action Plan (FCSAP) Federal Interim Groundwater Quality Guidelines (FIGQG) which are applicable to groundwater on federal sites being managed under FCSAP. For groundwater located within 10 m of a receiving body, the CCME Canadian Water Quality Guidelines (CWQG) for the protection of aquatic life are considered applicable. As all monitoring wells were greater than 10 m from receiving surface water bodies, the CWQGs are not applicable for evaluation of groundwater data and the FIGQGs were considered appropriate for evaluation of groundwater at the Site.

Health Canada Drinking Water Guidelines

Although the current and future use of the Site is likely to remain commercial/industrial, the Health Canada Drinking Water Guidelines were included for evaluation of groundwater at the Site for reference purposes.

3.2 Provincial Standards

The applicable provincial regulations used for comparison of soil, groundwater, and soil vapour analytical results are contained in the following documents:

- *Environmental Management Act* (EMA), ([SBC 2003], Chapter 53 assented to October 23, 2003 and current to November 1, 2020).
- Contaminated Sites Regulation (CSR) (375/96 O.C 1480/96, includes amendments up to B.C. Reg. 13/2019, January 24, 2019).
- Hazardous Waste Regulation (HWR) (BC Reg. 63/88 O.C. 268/88, includes amendments up to B.C. Reg. 243/2016, November 1, 2017).
- BC Water Quality Guidelines (BCWQG), including amendments up to August 2019.

3.3 Soil Standards

Soil standards are classified into eight categories, based on the type of land use. Sites which contain substances in soil at concentrations greater than the standard for the land use applicable to the Site are considered to be contaminated. The land use categories are summarized as follows:

- Agricultural Land Use (AL)
- Urban Park Land Use (PL)
- Residential Low Density Land Use (RL_{LD})
- Residential High Density Land Use (RL_{HD})
- Commercial Land Use (CL)
- Industrial Land Use (IL)
- Wildlands Natural Land Use (WL_N)
- Wildlands Reverted Land Use (WL_R)

Within the CSR, there are three types of numerical standards for soil: matrix numerical standards (Schedule 3.1 Part 1); generic numerical standards to protect human health (Schedule 3.1 Part 2); and, generic numerical standards to protect ecological health (Schedule 3.1 Part 3). Matrix numerical standards are provided for certain substances in soil and are determined based on the evaluation of potential site-specific factors including the following:

Human Health

- Intake of contaminated soil (applicable at all sites)
- Groundwater used for drinking water

Environmental Protection

- Toxicity to soil invertebrates and plants (applicable at all sites)
- Livestock ingesting soil and fodder
- Major microbial functional impairment
- Groundwater flow to surface water used by aquatic life – freshwater and marine
- Groundwater used for livestock watering
- Groundwater used for irrigation

Once the applicable site-specific soil matrix factors are determined, the lowest standard from those applicable factors is defined as the matrix numerical standard that will apply to the Site.

The Site is currently agricultural land zoning and is currently used for commercial purposes. In addition, it is understood that if VFPA purchases the Site, the future use may be industrial land use. Therefore, the CSR agricultural (AL), commercial (CL) and industrial land use (IL) soil standards were applied to evaluate the soil analytical results. The CSR site-specific soil matrix factors applicable consist of intake of contaminated soil, toxicity to soil invertebrates and plants, groundwater used for drinking water and groundwater flow to surface water used by marine aquatic life.

Additionally, the regional background soil quality estimates for inorganic substances provided in BC MOE Protocol 4 for Contaminated Sites¹ (Protocol 4) were reviewed to determine if concentrations reported were potentially related to regional background soil quality. Metal concentrations in soil above the CSR standards, but below the Protocol 4 regional background concentrations, would not be considered indicative of contamination (CSR Part 5, Section 11 (3)).

3.4 BC Hazardous Waste Regulation

The BC Hazardous Waste Regulation (HWR) provides a basis for classifying materials as hazardous waste including if they contain leachable contaminants at concentrations in excess of a specified maximum. Soil contamination in excess of the HWR standards must be handled and disposed of as Hazardous Waste in accordance with the HWR.

Other applicable information regarding contaminated site assessment and remediation includes policy, protocol and guidance documents as issued by the BC Ministry of Environment and Climate Change Strategy (BC ENV).

3.5 Groundwater Standards

Water standards of the CSR (Schedule 3.2) are classified into four categories based on the type of water use. Furthermore, Extractable Petroleum Hydrocarbons (EPHW₁₀₋₁₉) and Volatile Hydrocarbons (VHW₆₋₁₀) water standards are applicable to all sites, irrespective of water use. Sites which contain substances in groundwater at concentrations greater than the standard for the water use applicable to the Site, or EPHW₁₀₋₁₉ and VHW₆₋₁₀ standards, are considered to be contaminated. The water use categories are summarized as follows:

- Aquatic Life Water Use (AW) – freshwater and/or marine
- Drinking Water Use (DW)
- Irrigation Water Use (IW)
- Livestock Water Use (LW)

Aquatic Life Water Use Standards

Under BC ENV Protocol 21 for Contaminated Sites (Protocol 21), AW standards apply to sites that are within 500 m of a surface water body containing aquatic life, or where there is the potential for contaminated groundwater to migrate to within 500 m of surface water containing aquatic life, or reach aquatic life through preferential pathways.

The closest surface water bodies to the Site are the Fraser River and Strait of Georgia which are located 1 km northwest of the Site. Surface water bodies and ditches were observed adjacent to the Site and therefore the CSR groundwater standards for aquatic life freshwater use (AW_{FW}) are considered applicable to the Site.

¹ BC Ministry of Environment Protocol 4 for Contaminated Sites, Determining Background Soil Quality, Table 1 – Regional Background Soil Quality Estimates for Inorganic Substances, October 12, 2010

Drinking Water Use Standards

The evaluation of whether or not drinking water use (DW) standards (CSR Schedule 3.2) are applicable is completed in two stages: first for the current situation; and then, for the potential future situation as outlined by The ENV Protocol 21 for Contaminated Sites (Protocol 21). Both the current and the overall future evaluation sections must indicate “no drinking water use” before you can eliminate the application of the DW standard to the Site.

Current Use: For current use evaluation, the CSR DW standards are applicable at a site where the groundwater or surface water at or near the site is currently used for drinking water purposes. “Near” is defined as within 500 m of the site or the leading edge of a groundwater contamination source or, if groundwater flow direction has been demonstrated, 100 m up-gradient or 500 m cross-gradient and down-gradient of the site or the contamination source.

The BC Water Resource Atlas, which displays groundwater management information for the Province of BC, was accessed on August 25, 2020. Water wells are not shown on the Site or within a 500 m radius from the Site.

Future Use – Part 1: The potential for the Site to support future drinking water use is determined under this scenario. If a suitable aquifer (hydraulic conductivity greater than 1×10^{-6} m/s and aquifer yield greater than 1.3 L/min) is present beneath the Site, then there is considered to be the potential for DW standards to apply and further evaluation is required. If not, then DW standards do not apply.

Future Use – Part 2: If any of the answers for the following two questions is yes, then DW standards do not apply:

- Is the natural quality of groundwater in the aquifer is unsuitable for drinking water (total dissolved solids (TDS) are greater than 4,000 mg/L, or is contained within organic soils or muskeg)?
- Is there is a confining geological unit that adequately protects the aquifer (greater than or equal to 5 m thick, bulk hydraulic conductivity less than or equal to 1×10^{-7} m/s, relatively uniform and free of fractures, is continuous across the extent and predicted migration pathway of the shallow subsurface contamination, and the lower 5 m has not been penetrated by contamination from the above units)?

It is possible that further hydrogeological testing could provide additional information to exclude the CSR DW standards; however, without additional Site hydrogeological information (beyond the scope of work for this Phase II ESA), it is assumed that the CSR DW standards would be applicable to the Site.

Irrigation and Livestock Water Use Standards

Similar to the CSR DW standards, the CSR Irrigation (IW) and livestock (LW) water use standards apply if current irrigation or livestock watering wells or surface water intakes are within a radial distance of 500 m, which can be refined to 500 m down-gradient or 100 m up-gradient from the outer extent of a groundwater contamination source. Furthermore, if a natural confining barrier

does not protect current irrigation or livestock watering wells from shallow groundwater contamination sources then IW and/or LW standards apply. If a study indicates that the site groundwater will enter the capture zone of the current irrigation or livestock watering wells then IW and LW water use standards apply.

Current irrigation and livestock water wells were not identified within a 500 m radius of the Site. Therefore, the CSR IW and LW standards are not applicable to the Site.

Iron and Manganese Water Use

Schedule 2 activities for which iron and manganese water standards apply were not conducted on the Site. Therefore, the CSR groundwater standards for iron and manganese are not considered applicable to the Site.

3.5.1 BC Water Quality Guidelines

In accordance with Technical Guidance 15 BC Water Quality Guidelines (BCWQG) are applicable for evaluating water quality in aquatic receiving environments. The BCWQG are substance concentrations considered protective of aquatic life in receiving environments. Concentration criteria for inorganic substances apply to dissolved substance concentrations in groundwater, but to total substance concentrations in surface water.

The BCWQGs were evaluated for their applicability to the Site. As all monitoring wells were greater than 10 m from receiving water bodies, the BCWQGs are not applicable for evaluation of groundwater data.

4. INVESTIGATIVE PROGRAM

The Phase II ESA field program was conducted between October and November 2020. The objective of the Phase II ESA was to determine if potential contaminants of concern (PCOCs) associated with the APECs identified in the Phase I ESA are present in the Site soil, groundwater, and/or soil vapour at concentrations greater than the CSR standards outlined in Section 3.0 of this report.

The scope of work for the Phase II ESA consisted of the following tasks:

- Completing a BC One Call to register the drilling program and obtain utility locate information.
- Performing an electromagnetic (EM) and ground penetrating radar (GPR) survey on the Site to identify the potential presence of underground utilities.
- Advancing 16 boreholes, with eight being completed as groundwater monitoring wells (MW20-5, MW20-7, MW20-9 to MW20-13, and MW20-15).
- Install vapour probes at seven of the groundwater monitoring well locations (SV20-5, SV20-7, SV20-9, SV20-10, SV20-12, SV20-13, and MW20-15).

- Collecting subsurface soil samples and geologic information during drilling, including colour, soil type, moisture and organic vapour measurements. Submission of select soil samples for laboratory analyses.
- Collecting eight groundwater samples and a duplicate sample from the groundwater wells for laboratory analyses.
- Collecting seven soil vapour samples and a duplicate sample from the soil vapour wells for laboratory analyses.
- Documenting the results of the investigation in this letter report.

The following table presents the APECs, the corresponding investigative locations and the associated PCOCs. The investigative locations are shown on the attached Figure 1.

Table 4-1 List of APECs and Investigative Locations

APEC Description	Sample Location	Potential Contaminants of Concern		
		Soil	Groundwater	Vapour
APEC 1: On-Site Fill Material of Unknown Quality and Origin	All sample locations	PHC F1-F4 LEPH, HEPH, PAH, metals	PHC F1-F4 LEPHw, PAH, dissolved metals	naphthalene
APEC 2: Former On-Site Auto Repair and Auto Body Repair Operations at 10620 Scott Road	MW20-11	PHC F1-F4 LEPH, HEPH, PAH, VOC, VPH, glycols, metals	PHC F1-F4 LEPHw, PAH, VOC, VPHw, glycols, dissolved metals	*naphthalene, VOC, VPHv
APEC 3: Former and Current on-Site Truck and Trailer Maintenance Operations	MW/SV20-10, MW/SV20-12 (two maintenance buildings), MW20-5, MW20-7, MW20-9, MW20-15 (central and east portions of the Site)	PHC F1-F4 LEPH, HEPH, PAH, VOC, VPH, glycols, metals	PHC F1-F4 LEPHw, PAH, VOC, VPHw, glycols, dissolved metals	naphthalene, VOC, VPHv
APEC 4: Off-Site Former Service Station at 10648 Scott Road	MW/SV20-13	n/a	PHC F1-F4 LEPHw, PAH, VOC, VPHw, dissolved metals	naphthalene, VOC, VPHv

APEC – area of potential environmental concern

VOC – volatile organic compounds

HEPH – heavy extractable petroleum hydrocarbons

PAH – polycyclic aromatic hydrocarbons

*Keystone was unable to collect sample at MW20-11 due to proximity of groundwater to surface.

PCOC – potential constituents of concern

PHC F1-F4 – petroleum hydrocarbon fractions 1-4

VPH – volatile petroleum hydrocarbons

LEPH – light extractable petroleum hydrocarbons

4.1 Electro-magnetic and Ground Penetrating Radar Survey

Copies of available utility drawings from BC One Call were obtained prior to the drilling investigation. A utility locator, Quadra Utility Locating Ltd. (Quadra) visited the Site with Keystone Environmental on October 21, 2020 to identify the potential presence of underground utilities in the vicinity of the proposed investigation locations prior to the commencement of drilling.

4.2 Borehole Drilling

On October 22, 23, and 26, 2020, investigative locations BH20-1 to BH20-4, MW20-5, BH20-6, MW20-7, BH20-8, MW20-9 to MW20-13, BH20-14, MW20-15, and BH20-16 were advanced by Southland Drilling Co. Ltd. (Southland) of Delta, BC using a track-mounted drill rig equipped with hollow and solid stem augers. Drilling was completed to a maximum depth of approximately 9.1 meters below grade (mbg).

4.3 Soil Sampling

Split-spoon soil sampling was initially attempted; however, the subsurface stratigraphy prevented adequate soil sample recovery from the split-spoon sampling technique. Therefore, soil samples were collected directly from the solid stem augers by first removing the outer 1 cm of soil in order to obtain a representative sample. The soil stratigraphy was then logged and sample intervals selected.

One soil sample was collected at each sample point. A portion of each soil sample was split into three to five labelled 125 millilitres (mL) laboratory-supplied glass jars, depending on the number and type of PCOCs at each location, with minimal headspace and secured with Teflon® lids. Each sample was collected wearing new nitrile gloves to reduce the potential for cross contamination. Soil samples intended for the analyses of Volatile Organic Compounds (VOC) and Volatile Petroleum Hydrocarbons (VPH) were collected using a dedicated, laboratory supplied, plastic cut-off syringe. The cut-off syringe was used to collect approximately 5 g of soil from the freshly exposed soil. The soil core was subsequently extruded into a 40 mL vial pre-filled with 10 ml of methanol. A second, replicate sample/vial was collected for each volatile soil sample interval.

A second sample (field sample) was placed and sealed in a Ziploc® polyethylene bag to an approximate 50% volume for measurement of soil headspace vapours. Field samples were screened for volatile constituents using a MiniRAE portable photoionization detector (PID) calibrated to isobutylene. This instrument cannot be used to directly quantify the concentrations of hydrocarbon constituents as determined by the laboratory; however, it does provide an indication of volatile constituents to assist in sample selection for laboratory analysis, if any. The headspace vapour screening procedure is described as follows:

- Field soil samples were allowed to warm for approximately twenty minutes to allow the release of any vapours into the headspace of the polyethylene bag. Following the ten-minute holding period, a hole was punctured into the polyethylene bag using the PID instrument to obtain the headspace vapour concentration measurements.

Soil samples were selected for analyses based on field observations and/or soil headspace measurements. Soil samples were placed in a chilled cooler and transported to Bureau Veritas Laboratories, which are certified by the Canadian Association for Laboratory Accreditation (CALA), under standard chain of custody procedures.

4.4 Monitoring Well Construction

Monitoring wells were constructed within hollow stem augers using schedule-40 PVC, 5.1 cm inside diameter pipe with a well screen slot size of 0.25 mm (0.01 inch). The placement of the monitoring well screens was dependent on the depth of the apparent water table at each location with the intent of having the well screen intersect the groundwater table. The depths of the screens were between approximately 2 mbg and 4 mbg on the south and east portions of the Site, between 0.5 mbg and 2 mbg on the west portion of the Site, and between 4 mbg and 7.5 mbg on the north-central portion of the Site.

Well screens 1.5 m in length were selected to intersect the apparent water table and solid PVC riser-pipe extended from the top of each well screen to ground level. Subsequent to the placement of the well, a filter sand pack was poured through the annulus between the well screen and the hollow stem augers. The filter sand pack was composed of 10/20 mesh filter sand, and extended from the base of the well screen to approximately 0.3 m above. A bentonite seal was placed immediately above the sand pack to a depth of 0.3 mbg. The purpose of the bentonite seal is to prevent vertical migration of groundwater or infiltration of surface water into the wells. Each monitoring well was finished with a flush mount set in concrete, and a J-plug seal was placed in the well head.

4.5 Groundwater Sampling

The groundwater monitoring wells were allowed to equilibrate for a minimum of 24 hours prior to development. Headspace vapours were measured at each location using a PID upon removal of the J-plug, and the readings recorded on purge forms. The monitoring wells were developed prior to sampling using dedicated high density polyethylene (HDPE) tubing, a surge block and a one-way inertial lift footvalve in order to remove fine-grained sediments from the well and set the filter pack in preparation for groundwater sampling. The volume of water in each well was calculated prior to developing and a minimum of six well casing volumes of water was removed during the procedure or until the well was developed to dry three times.

Subsequent to development, the monitoring wells were allowed to settle for a minimum period of 24 hours prior to groundwater purging and sampling. The wells were purged using the low flow procedure² with a peristaltic pump and dedicated, disposable Masterflex™ and HDPE tubing. Well purging was conducted to remove potentially stagnant water from the well column. The groundwater was monitored for pH, specific conductance, temperature, and oxidation-reduction potential (ORP). The monitoring well was considered to be purged when the values of pH, specific conductance, and temperature were within ± 0.1 , $\pm 3\%$, and $\pm 0.2^\circ\text{C}$, respectively, of the previous measurements.

A peristaltic pump utilizing a low flow sampling methodology was used to collect groundwater samples for Light Extractable Petroleum Hydrocarbons (LEPHw), Polycyclic Aromatic Hydrocarbons (PAH) and dissolved metals. HDPE tubing with one-way inertial lift foot-valve was used to collect groundwater samples for VOC and VPHw.

² USEPA Ground Water Issue, Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures, EPA/540/S-95/504, April 1996.

Groundwater samples were collected in laboratory provided bottles suitable for the specific analyses, placed in chilled coolers, and transported to Bureau Veritas, under standard chain of custody procedures for analysis.

4.6 Quality Assurance/Quality Control (QA/QC)

During the investigative program, Keystone Environmental employed field and office measures to provide quality assurance and quality control (QA/QC) when performing general fieldwork, sample collection for laboratory analysis and reporting.

In the field, the following procedures were used by Keystone Environmental to minimize the potential for cross-contamination of samples:

- New nitrile gloves were used for each sample collected.
- Drill augers and sampling devices were pressure-washed between boreholes.
- Tools were cleaned with Alconox™ soap and distilled water between samples.
- Samples were placed in laboratory-supplied containers suitable for the analysis.
- Water samples were retrieved with dedicated tubing for each monitoring well.
- Samples were labelled and stored in a chilled cooler while in the field and during transport to the laboratory.

Samples were collected and submitted for analysis under chain of custody documentation to Bureau Veritas. Soil and groundwater analyses were conducted in accordance with MOE procedures, and the MOE-recommended laboratory QA/QC protocols were followed.

To check the precision of field methods, quality control (QC) samples were collected for analysis. Field QC samples consisted of collecting duplicate/replicate samples of environmental media (i.e., soil, groundwater, surface water, sediment, ambient air and/or soil vapour). Field duplicate/replicate samples are collected on a frequency of one for every ten samples. The results of the duplicate samples are used to evaluate method precision to determine if the data are reasonably reliable for the purpose of the study.

The measure of the reproducibility or precision of the data is quantified by calculating the Relative Percent Difference (RPD). The RPD is calculated when the sample and duplicate concentration are both greater than or equal to five times the reported detection limit (RDL). If the concentration of both the sample and duplicate are less than the RDL, then RPD is not calculated. Sample and duplicate results that are both less than the RDL are considered to be in general agreement. To calculate the RPD, the absolute value of the difference between the sample and the duplicate is divided by the average of the sample and duplicate and multiplied by 100, to obtain a percentage.

The measure of the reproducibility or precision of the data (field QC) is quantified by a parameter referred to as the Relative Percent Difference (RPD). The RPD is calculated by taking the absolute value of the difference between the sample, duplicate, and dividing it by the average of the sample

and duplicate, multiplied by 100 to obtain a percentage. As per BC ENV (BC MOE, 2015) recommended practice, RPD values greater than 1.5 times the acceptable laboratory RPDs from the BC Environmental Laboratory Manual (BC ENV and BCELTAC, 2015) for the corresponding parameters suggest further review to determine a cause and decide whether the effect of the precision, or uncertainty, may alter the findings of the investigation. The RPDs used as project data quality objectives are summarized as follows:

Soil

- High variability metals (silver, aluminum, barium, mercury, potassium, molybdenum, sodium, lead, tin, strontium, titanium) = 60%
- Other metals = 45%
- Volatile organics = 60%
- Extractable Petroleum Hydrocarbons = 60%
- PAHs = 75%

Groundwater

- Metals = 30%
- Volatile organics = 45%
- Extractable Petroleum Hydrocarbons = 45%
- PAHs = 45%

Vapour

- Volatile organics³ = 45%

An RPD that appears to indicate poor precision must be evaluated in relation to factors such as the sample pairing (e.g., confirming sample identification), nature of the sample (e.g., soil or groundwater, heterogeneous or homogeneous), the nature of the chemical or analysis (e.g., metals or organics) and the concentrations of the chemical (e.g., less than the applicable standard) before conclusions are drawn. In general, RPDs calculated using data with concentrations less than five times the reported detection limit (RDL) of the constituent are unreliable, and were therefore not calculated. The QC results are discussed in section 5.6.

³ Acceptable laboratory RPDs for vapour are not included in the BC Environmental Laboratory Manual (BC ENV and BCELTAC, 2015); therefore, the most conservative RPDs for organics in groundwater were deemed to be the most appropriate.

5. INVESTIGATIVE RESULTS

5.1 Surficial Geology and Field Observations

The soil was classified from observations during drilling using the Unified Soil Classification System. The following is a general description of the stratigraphy encountered beneath the asphalt.

- Unit A: Grey, silty, medium to coarse-grained sand (fill) with some fine to coarse-grained gravels, dense and moist. This unit was identified from surface to a depth of approximately 1.5 mbg on the western portion of the Site, between 3.0 and 4.5 mbg on the south and eastern portions of the Site, and between 5.5 and 7.2 mbg on the north-central portion of the Site.
- Unit B: Red-brown peat, loose and wet. This unit underlies Unit A to a depth of 8.8 mbg.
- Unit C: Grey silt, loose to dense and wet. This unit, identified at MW20-15, underlies Unit B to the maximum depth of the investigation at 9.1 mbg.

Soil sample headspace vapour measurements ranged from 0.0 parts per million by volume (ppmv) to 4.0 ppmv at MW20-10(1.5) which is not considered to be elevated (above 50 ppmv). Metal or wired debris was observed between 1.5 mbg and 2.5 mbg at BH20-4, BH20-7, and BH20-16. Red brick debris was observed at MW20-10 at 2.5 mbg.

5.2 Hydrogeology and Field Observations

The local topography is relatively flat, with the exception of the north-central portion of 10620/10626 Scott Road that is approximately 2 metres higher than the rest of the Site, sloping slightly down to the rest of the Site. The elevation of properties immediately to the east of the Site is approximately 3 to 5 m higher than the elevation at the Site. The Fraser River is located approximately 1 km northwest of the Site, flowing northeast to southwest. Based on proximity to the Fraser River, the local groundwater flow direction is inferred to be to the west. However, this is subject to confirmation with field measurements.

Prior to developing and purging, well headspace vapour measurements were obtained upon removing the J-plug from each well head using a PID. Headspace vapours were 0 ppm. Field indications of petroleum hydrocarbon contamination (such as odours and sheen) were not observed in the groundwater samples collected from the wells. MW20-7 exhibited artesian flow during sampling and development.

5.3 Soil Analytical Results

The soil analytical results were compared to the CCME AL, CL and IL standards, and the CSR AL, CL and IL standards. The soil analytical results are presented on the appended Tables 1 to 5 and on Figure 3. The laboratory analytical reports are attached at the end of this report.

The soil analytical results were below the CCME AL, CL and IL guidelines, and/or CSR AL, CL, and IL standards with the exception of the following:

When compared to the CCME AL, CL, and IL guidelines, of the 16 investigative locations, 10 had exceedances for PAHs and 10 for metals. When compared to the CSR AL, CL, and IL standards, of the 16 investigative locations, 10 had exceedances for PAHs and 10 for metals.

5.4 Groundwater Analytical Results

Groundwater analytical results were compared to the CSR AW_{FW} and DW standards, and the FIGQ AL, CL, IL and HC DWQ guidelines. Groundwater analytical results are presented in the appended Tables 6 to 9 and on Figure 4. The laboratory analytical reports are attached at the end of this report.

Eight groundwater samples and one duplicate were collected from monitoring wells MW20-5, MW20-7, MW20-9 to MW20-13, and MW20-15. Samples were submitted for analysis which included PHC F1-F4, LEPhw, PAH, VOC, VPhw, glycols, and/or dissolved metals. The groundwater analytical results were below the CSR AW_{FW} and DW standards, and/or the FIGQ AL, CL, and IL and HC DWQ guidelines with the exception of the following:

When compared to the FIGQ AL, CL, IL and HC DWQ guidelines, of the eight investigative locations, three had exceedances for PAHs, eight for dissolved metals, and one for chloroform. When compared to the CSR AW_{FW} and DW standards, of the eight investigative locations, three had exceedances for PAHs and two for dissolved metals.

5.5 Soil Vapour Analytical Results

Soil vapour analytical results were compared to the CSR AL, CL, and IL standards and are presented in the appended Tables 10 and 11 and on Figure 5. The laboratory analytical reports are attached at the end of this report.

Seven soil vapour samples and one duplicate were collected from vapour wells SV20-5, SV20-7, SV20-9, SV20-10, SV20-12, SV20-13, and SV20-15. Samples were submitted for analysis which included naphthalene, VOC, VPhv. The attenuated concentrations of naphthalene, VOC, VPhv were less than the CSR AL, CL, and IL standards in the samples analyzed.

5.6 Quality Control

Soil and groundwater samples were analyzed by Bureau Veritas. Methods employed for analysis of soil and vapour were the recommended methods by BC ENV and other regulatory agencies including the US Environmental Protection Agency.

In addition to field QC samples, the laboratory initiated their own QA/QC measures. The laboratory QA/QC measures included method blanks, duplicate analysis, and spike and matrix spike recoveries were reviewed in addition to the Bureau Veritas quality assurance and quality control calculations. The laboratory RPD values were within acceptable limits or were less than five times the detection limits. The sample blank and spike analyses were also within the acceptable limits. Therefore, the samples and duplicates are in agreement and the data is reliable. The laboratory completed QC is provided in the laboratory certificates of analysis in Appendix G.

5.6.1 Soil QC Results

The following soil QC sample pairs were analyzed:

Soil Sample and Field Duplicate	Analyses
BH20-3 (0.5) and BH20-B	LEPH, HEPH, PAH, metals
MW20-13 (0.5) and MW20-F	LEPH, HEPH, PAH, metals

The calculated RPDs of LEPH, HEPH, PAH, and metals parameters were either less than the project data quality objective (DQO) or could not be calculated since the concentration of the sample or its duplicate was less than the reported detection limit with the exception of arsenic at MW20-13(0.5). The calculated RPD for arsenic in soil sample MW20-13 (0.5) and its corresponding field duplicate sample (MW20-F) was 75%, which is greater than the threshold DQO of 60%. MW20-13 (0.5) was collected from within the fill horizon (Unit A), a heterogenies soil horizon. Therefore, the elevated DQO for arsenic would not affect the findings of the investigation. Overall, it is concluded that the data meet project requirements for field duplicate QC evaluation.

5.6.2 Groundwater QC

The following groundwater QC samples were collected.

Table 5-2 Confirmatory Groundwater QC

Groundwater Sample and Field Duplicate	Analysis
MW20-15 and MW20-A	LEPHw, PAHs, VOCs, VPH, glycols, and dissolved metals

The calculated RPDs of LEPHw, PAH, VOC, VPHw, dissolved metals, and glycols parameters were either less than the project DQO or could not be calculated because the concentration of the sample and/or its duplicate was less than the reported detection limit and therefore, provide a qualitative indication that the results are reliable and reproducible.

5.6.3 Soil Vapour QC

The following soil vapour QC samples were collected.

Table 5-3 Confirmatory Soil Vapour QC

Groundwater Sample and Field Duplicate	Analysis
SV20-7 and SV20-A	naphthalene, VOC, VPHv

The calculated RPDs of VOC, VPHw, and naphthalene parameters were either less than the project DQO or could not be calculated because the concentration of the sample and/or its duplicate was less than the reported detection limit and therefore, provide a qualitative indication that the results are reliable and reproducible

5.6.4 Laboratory QA/QC Results

The laboratory QA/QC measures included method blanks, duplicate analysis, and spike and matrix spike recoveries were reviewed in addition to the Maxxam quality assurance and quality control calculations. The laboratory relative percentage difference (RPD) values were within acceptable limits, or were less than five times the detection limits. The sample blank and spike analyses were also within the acceptable limits. Therefore, the samples and duplicates are in agreement and the data is reliable. The laboratory completed QA/QC is provided in the laboratory analytical reports attached at the end of this report.

6. SUMMARY AND DISCUSSION

The Phase II ESA field program was conducted between October and November 2020. The objective of the Phase II ESA was to determine if PCOCs associated with the APECs identified in the Phase I ESA are present in Site soil, groundwater, and/or soil vapour at concentrations greater than the applicable guidelines and standards outlined in Section 3.0 of this report.

The analytical results by APEC are discussed below:

6.1 APEC 1: On-Site Fill Material of Unknown Quality and Origin

Historical aerial photographs from 2008 to 2010 show uniform-coloured material was added to the west and central portions of the Site, consistent with fill material. The quality and origin of the fill material is unknown. To investigate this APEC, 15 boreholes were advanced; 8 of these were finished as groundwater monitoring wells. Soil and groundwater samples were collected and submitted for analysis of PHC F1–F4, LEPH, HEPH, PAH, metals. Wood waste was also observed at BH20-1 and was therefore analysed for phenols in soil. Soil vapour samples were collected from SV20-5, SV20-7, SV20-9, SV20-10, SV20-12, SV20-13, and MW20-15 and submitted for analysis naphthalene. Fill material was identified from surface to a depth of approximately 1.5 mbg on the western portion of the Site, to depths ranging between 3.0 and 4.5 mbg on the south and eastern portions of the Site, and between 5.5 and 7.2 mbg on the north-central portion of the Site.

Analytical Results Compared to CSR Standards

The concentration of tin at MW20-15(7.5) and arsenic at MW20-13(0.5) exceeded the CSR AL standards. The concentration of HEPH exceeded the CSR AL standard at BH20-16(0.5). There is a potential that this exceedance is associated with APEC 3 and will be discussed below. The concentration of various PAHs exceeded the CSR AL standard at BH20-1 to BH20-3, MW20-5, MW20-7, BH20-8, MW20-10, MW20-13, BH20-14, and BH20-16 at depths ranging from 0.3 mbg to 3.5 mbg, all within the fill horizon.

The concentration of arsenic at MW20-13(0.5) exceeded the CSR CL and IL standards.

The concentration of dissolved antimony exceeded the CSR DW standard at MW20-9 and MW20-11. It is possible that the dissolved metal exceedances at MW20-9 and MW20-11 could be associated with APECs 2 and/or 3. It is also possible that the exceedance could be associated with suspended colloidal material entrained in the sample as a result of the drilling disturbance (e.g., false positive). The concentration of benzo(a)pyrene exceeded the CSR AW_{FW} and DW standard at MW20-7, MW20-9, and MW20-10. It is also possible that the benzo(a)pyrene exceedance at these two sample locations could be associated with APEC 3 or suspended colloidal material entrained in the sample as a result of the drilling disturbance.

The concentration of dissolved arsenic at MW20-9 (13 ug/L) and MW20-11 (20.2 ug/L) exceeded the CSR DW standard (10 ug/L) but was below the regional background concentration (37 ug/L) and is therefore not considered an exceedance. Similarly, the concentration of lithium at MW20-5 (10.2 ug/L) and MW20-15 (14.4 ug/L) exceeded the CSR DW standard (8 ug/L) but was below the regional background concentration (28 ug/L) and is therefore not considered an exceedance.

Concentrations of remaining PCOCs in soil, groundwater, and vapour were less than the CSR standards.

Analytical Results Compared to CCME Criteria

When compared to the CCME criteria, 13 of the 16 investigative locations for this APEC had concentrations of PCOCs in soil which exceed the AL, CL and/or IL guidelines. The locations are listed below:

- BH20-1, BH20-2, MW20-7, BH20-8, MW20-10 to MW20-13, BH20-14, and MW20-15 had concentrations of boron which exceed the AL guideline.
- MW20-13 had concentrations of arsenic which exceed the AL, CL, and IL guidelines.
- MW20-15 had concentrations of tin which exceed the AL guideline.
- MW20-16 had concentrations of benzene and ethylbenzene which exceed the AL, CL, and IL guidelines.
- BH20-1 to BH20-3, MW20-5, MW20-7, BH20-8, MW20-10 to MW20-13, BH20-14, and MW20-15 had concentrations of PAHs which exceed the AL guidelines.
- BH20-1 to BH20-3, MW20-7, BH20-8, MW20-10, MW20-13, and BH20-14 had concentrations of PAHs which exceeded the CL, and IL guidelines.

When compared to the FIGQ AL, CL, IL and HC DWQ guidelines, all investigative locations for this APEC had concentrations of PCOCs in groundwater which exceed the FIGQ AL, CL, IL and/or HC DWQ guidelines. The locations are listed below:

- The concentration of dissolved antimony exceeded the HC DWQ guidelines at MW20-9 and MW20-11.
- The concentration of dissolved iron and manganese exceeded the FIGQ AL, CL, and IL guidelines at MW20-5, MW20-7, MW20-9 to MW20-12, MW20-13, and MW20-15.

- The concentration of dissolved molybdenum exceeded the FIGQ AL, CL, and IL guidelines at MW20-11.
- The concentration of dissolved selenium exceeded the FIGQ AL, CL, and IL guidelines at MW20-15.
- The concentration of anthracene, benzo(a)anthracene, benzo(a)pyrene, and fluoranthene exceeded the FIGQ AL, CL, and IL and/or HC DWQ guidelines at MW20-7 and MW20-10.
- The concentration of anthracene, benzo(a)pyrene, and fluoranthene exceeded the FIGQ AL, CL, and IL and/or HC DWQ guidelines at MW20-9.

Further investigation is warranted to delineate metals and hydrocarbons observed in fill material at BH20-1 to BH20-3, MW20-5, MW20-7, BH20-8, MW20-10, MW20-13, BH20-14, and BH20-16 that exceeded CCME guidelines and CSR standards.

Further investigation is warranted to delineate metals and hydrocarbons observed in groundwater at MW20-5, MW20-7, MW20-9 to MW20-12, MW20-13, and MW20-15 that exceeded CSR AW_{FW} and DW standards, and/or the FIGQ AL, CL, IL and HC DWQ guidelines.

6.2 APEC 2: Former On-Site Auto Repair and Auto Body Repair Operations at 10620 Scott Road

Historical records indicate that a former commercial building on the southwest portion of 10620 Scott Road was occupied by various auto repair and auto body repair operations from the late 1950s/early 1960s until the early 2010s. Aerial photographs show various vehicles stored outdoors on the southwest portion of the property during this time, in the vicinity of the former building, and Google Street View photographs from 2009 show signs advertising “autobody/paint” and “sandblasting” on the perimeter fence. The building was removed in 2011/2012, and the southwest portion of the property has since been used for trailer/vehicle parking. MW20-11 was advanced adjacent to the Former On-Site Auto Repair and Auto Body Repair Operation to investigate this APEC. Soil and groundwater samples were collected and submitted for analysis of PHC F1-F4, LEPHw, PAH, VOC, VPHw, glycols, and metals.

Analytical Results Compared to CSR Standards

As discussed in section 6.1, the concentration of dissolved antimony and dissolved iron in groundwater exceeded the CSR DW standard at MW20-11.

Analytical Results Compared to CCME Criteria

Similar to the CSR, when compared to the CCME criteria, the boron concentration in soil exceeded the CCME AL standard at MW20-11(0.5). In addition, the concentration of dissolved antimony in groundwater exceeded the FIGQ AL, CL, and IL and/or HC DWQ guidelines at MW20-11.

Although APEC 1 and APEC 2 overlap, it is more likely that the exceedances identified at MW20-11 are associated with APEC 1, since these exceedances have been detected across the Site.

Based on the soil, groundwater and vapour results further investigation of this APEC is not warranted.

6.3 APEC 3: Former and Current on-Site Truck and Trailer Maintenance Operations

Since the late 2000s, the Site has been occupied by various truck and trailer maintenance operations. During the Site reconnaissance, current operations were observed to consist of truck maintenance (fluid and tires), and trailer maintenance/repairs (hub/axle greasing and lubrication, minor welding repairs). Various staining was observed over unpaved surfaces on the central and west portions of the Site grounds, and approximately ten empty 205 L drums, some labelled as having contained concrete remover, motor oil or antifreeze (the remainder without labels), and approximately forty 20 to 40 L containers, some labelled as having contained grease, oil, or antifreeze, were observed across the unpaved grounds of the Site. Surficial stains, approximately 1 to 2 m² in area, and numerous smaller drips, were observed across 10620/10626 Scott Road in truck and trailer parking areas. An out-of-use AST, reportedly used by a previous operation to store waste oil, was observed indoors, over concrete, in the building at 10582 Scott Road, adjacent to the bay door and approximately 1 m from exterior unpaved surfaces. Truck maintenance was also observed to occur in an open-sided building on the west portion of 10620/10626 Scott Road adjacent to unpaved grounds and without secondary containment. Various 205 L drums, and 20 L and smaller containers of lubricants, cleaners, solvents, and paint were observed to be used and stored in the truck maintenance structure.

To investigate this APEC, MW20-5, MW20-7, MW20-9, MW20-10, MW20-12, and MW20-15 were advanced across the Site in areas where truck maintenance was present or staining was observed. Soil and groundwater samples were collected and submitted for analysis of PHC F1-F4, LEPH, HEPH, PAH, glycols, and metals. Soil vapour samples were collected from SV20-5, SV20-7, SV20-9, SV20-10, SV20-12, and SV20-15 and submitted for analysis naphthalene, VOC, and VPHv.

Analytical Results Compared to CSR Standards

The concentration of tin exceeded the CSR AL standard at MW20-15(7.5). It is likely that this metal exceedance is associated with APEC 1 however the source of the exceedance has not been confirmed.

The concentration of HEPH exceeded the CSR AL standard at BH20-16(0.5). The concentration of various PAHs exceeded the CSR AL standard at MW20-5, MW20-7, MW20-10, and BH20-16 at depths ranging from 0.3 mbg to 3.5 mbg.

The concentration of dissolved antimony exceeded the CSR DW standard at MW20-9. It is likely that the dissolved metal exceedance at MW20-9 could be associated with APEC 3 rather than APEC 1. It is also possible that the exceedance could be associated with suspended colloidal material entrained in the sample as a result of the drilling disturbance (e.g., false positive). The

concentration of benzo(a)pyrene exceeded the CSR AW_{FW} and DW standard at MW20-7, MW20-9, and MW20-10. It is also likely that the benzo(a)pyrene exceedance at these two sample locations could be associated with APEC 3 or suspended colloidal material entrained in the sample as a result of the drilling disturbance.

Concentrations of remaining PCOCs in soil, groundwater, and vapour were less than the CSR standards.

Analytical Results Compared to CCME Criteria

When compared to the CCME criteria, each investigative location for this APEC had concentrations of PCOCs in soil which exceed the AL, CL and/or IL criteria. The locations are listed below:

- MW20-7, MW20-10, MW20-12, and MW20-15 had concentrations of boron which exceed the AL criteria.
- MW20-15 had concentrations of tin which exceed the AL criteria.
- MW20-5, MW20-7, MW20-10, MW20-12, and MW20-15 had concentrations of PAHs which exceed the AL, CL, and/or IL criteria.

When compared to the FIGQ AL, CL, IL and HC DWQ guidelines, all investigative locations for this APEC had concentrations of PCOCs in groundwater which exceed the FIGQ AL, CL, IL and/or HC DWQ guidelines. The locations are listed below:

- The concentration of dissolved antimony exceeded the HC DWQ guidelines at MW20-9.
- The concentration of dissolved iron and manganese exceeded the FIGQ AL, CL, and IL guidelines at MW20-5, MW20-7, MW20-9 to MW20-12, and MW20-15.
- The concentration of dissolved selenium exceeded the FIGQ AL, CL, and IL guidelines at MW20-15.
- The concentration of anthracene, benzo(a)anthracene, benzo(a)pyrene, and fluoranthene exceeded the FIGQ AL, CL, IL and/or HC DWQ guidelines at MW20-7 and MW20-10.
- The concentration of anthracene, benzo(a)pyrene, and fluoranthene exceeded the FIGQ AL, CL, IL and/or HC DWQ guidelines at MW20-9.

Resampling of MW20-5, MW20-7, MW20-9 to MW20-13, and MW20-15 for dissolved metals, hydrocarbons, and/or PAHs is recommended to verify the initial concentration. If the subsequent concentration is greater than the standard, further investigation to delineate the exceedances would be required.

6.4 APEC 4: Off-Site Former Service Station at 10648 Scott Road

Historical records indicate that a service station was present at 10648 Scott Road, adjacent to the north of the Site, from the 1950s until the 1980s. The service station was present in several configurations during these years, with the tank nest, pumps, and canopy located between 5 m and 20 m north of the Site. The service station was removed in the late 1980s or early 1990s and has since been vacant of buildings and used for vehicle parking. MW20-13 was advanced in the northwest portion of the Site to investigate this off-Site APEC. A groundwater sample was collected and submitted for analysis of PHC F1-F4, LEPhw, PAH, VOC, VPhw, dissolved metals. A soil vapour sample was collected and submitted for analysis of naphthalene, VOC, VPhv.

Analytical Results Compared to CSR Standards

Concentrations of PCOCs in groundwater, and vapour were less than the CSR standards.

Analytical Results Compared to CCME Criteria

When compared to the FIGQ AL and HC DWQ guidelines, the concentration of dissolved iron and manganese exceeded the FIGQ AL guidelines at MW20-13. Concentrations of remaining PCOCs in groundwater were less than the FIGQ AL and HC DWQ guidelines. It is likely that these dissolved metals exceedances are related to APEC 1 and therefore further investigation of this APEC is not warranted.

7. CONCLUSIONS

It is concluded that contaminants of concern are present in Site soil and groundwater at concentrations above the CSR AL, CL, and IL standards as well as the CCME AL, CL, and IL, FIGQ AL and HC DWQ guidelines. Further investigation is warranted.

8. PROFESSIONAL STATEMENT

Keystone Environmental Ltd. confirms that this report titled *Report of Findings – Phase II Environmental Site Assessment, 10582 and 10620/10626 Scott Road, Surrey, BC* has been prepared in general conformance with the *Environmental Management Act* and the *Contaminated Sites Regulation*.

Report author Ross McCarter, MRM, Project Manager and Professional of Record Mark Wilson, B.Sc., P.Ag. EP, and Senior Reviewer Michael Geraghty, M.Sc. P.Geo., have demonstrable experience in the investigation of the type of contamination at the Site and are familiar with the investigation carried out at the Site.

The report is subject to the General Limitations presented in Section 2.0 of the report and the General Terms and Conditions appended at the end of the report.

If you have questions regarding the information contained in this report, please contact Mark Wilson, mwilson@keystoneenvironmental.ca.

December 14, 2020
Date

Mark Wilson, B.Sc., P.Ag, EP
Project Manager / Professional of Record

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ATTACHMENTS:

- Figure 1: Sample Location Plan
- Figure 2: APEC Location Plan
- Figure 3: Soil Analytical Results
- Figure 4: Groundwater Analytical Results
- Figure 5: Soil Vapour Analytical Results
- Tables 1 to 5: Soil Analytical Results
- Tables 6 to 9: Groundwater Analytical Results
- Tables 10 to 11: Soil Vapour Analytical Results
- Groundwater Sampling Sheets
- Bureau Veritas Ltd. Analytical Reports
- Keystone Environmental Ltd. General Terms and Conditions for Services

FIGURES



INFERRED LOCAL
GROUNDWATER
FLOW DIRECTION

LEGEND

- SITE
- PROPERTY LINE
- LOT LINES
- BUILDING OUTLINE
- FORMER BUILDING OUTLINE
- FORMER GREENHOUSES
- DRAINAGE FEATURE
- KEYSTONE BOREHOLE (2020)
- KEYSTONE MONITORING WELL (2020)
- KEYSTONE VAPOUR WELL (2020)



NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
2. DATE OF AERIAL PHOTO IS 2018.

15 0 75 m
SCALE: 1:1,500 (approx.)

10626 Scott Road Surrey, B C Brunswick Property Holdings Ltd.		
REVISION No.	DATE	PROJECT No.
B	Dec. 2020	15934-02

Figure 1
Sample Location Plan



LEGEND

- SITE
- PROPERTY LINE
- LOT LINES
- BUILDING OUTLINE
- FORMER BUILDING OUTLINE
- FORMER GREENHOUSES
- APEC 1 - ON-SITE FILL MATERIAL OF UNKNOWN QUALITY AND ORIGIN
- APEC 2 - ON-SITE FORMER AUTO REPAIR AND AUTO BODY REPAIR OPERATIONS AT 10620 SCOTT ROAD
- APEC 3 - FORMER AND CURRENT TRUCK AND TRAILER MAINTENANCE OPERATIONS
- APEC 4 - FORMER SERVICE STATION AT 10648 SCOTT ROAD
- DRAINAGE FEATURE

INFERRED LOCAL
GROUNDWATER
FLOW DIRECTION

NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
2. DATE OF AERIAL PHOTO IS 2018.

15 0 75 m
SCALE: 1:1,500 (approx.)

10626 Scott Road Surrey, B C Brunswick Property Holdings Ltd.		
REVISION No.	DATE	PROJECT No.
B	Dec. 2020	15934-02

Figure 2
Areas of Environmental Concern





MW20-5	Screen Depth	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	PAHs	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	2.8-4.6	3169	2999	<AS	<300	<300	<200	<200	<AS	<AS	<AS	<RDL	<RDL

MW20-7	Screen Depth	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	anthracene	benzo[a]anthracene	benzo[a]pyrene	fluoranthene	Other PAHs	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	15-3.6	3169	3599	<AS	<300	<300	<200	<200	<RDL	0.015	0.01	0.01	0.015	<AS	<AS	<RDL	<RDL

MW20-9	Screen Depth	antimony	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	anthracene	benzo[a]pyrene	fluoranthene	Other PAHs	chloroform	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	4.2-6.1	11	1610	3599	<AS	<300	<300	<200	<200	<AS	0.015	0.014	0.051	<AS	0.5	<AS	<RDL	<RDL

MW20-10	Screen Depth	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	anthracene	benzo[a]anthracene	benzo[a]pyrene	fluoranthene	Other PAHs	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	2.4-4.2	16000	3999	<AS	<300	<300	<200	<200	<AS	0.013	0.014	0.036	0.05	<AS	<AS	<RDL	<AS

MW20-11	Screen Depth	antimony	Iron	manganese	molybdenum	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	PAHs	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	0.6-2.1	45	1110	599	0.0	<AS	<300	<300	<200	<200	<AS	<AS	<AS	<RDL	<AS

MW20-12	Screen Depth	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	PAHs	VOCs	Glycols	Miscellaneous Organics
29-Oct-20	2.8-4.6	16100	1270	<AS	<300	<300	<200	<200	<RDL	<RDL	<AS	<RDL	<RDL

MW20-13	Screen Depth	Iron	manganese	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	PAHs	VOCs	Miscellaneous Organics
29-Oct-20	0.8-2.4	3169	812	<AS	<300	<300	<200	<200	<AS	<AS	<AS	<AS

MW20-15	Screen Depth	Iron	manganese	selenium	Other Metals	VPHw	VHw ₆₋₁₀	LEPHw	EPHw ₁₀₋₁₉	MAHs	PAHs	VOCs	Glycols	Miscellaneous Organics
28-Oct-20	5.8-7.6	8530	5919	2.33	<AS	<300	<300	<200	<200	<AS	<AS	<AS	<RDL	<AS
28-Oct-20	5.8-7.6	8100	4959	2.33	<AS	<300	<300	<200	<200	<AS	<AS	<AS	<RDL	<AS



LEGEND

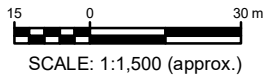
- SITE
- LOT LINES
- PROPERTY LINE
- BUILDING OUTLINE
- FORMER BUILDING OUTLINE
- FORMER GREENHOUSES
- DRAINAGE FEATURE
- KEYSTONE MONITORING WELL (2020)
- GROUNDWATER CONCENTRATION(S) LESS THAN CSR/FIGQ STANDARDS
- GROUNDWATER CONCENTRATION(S) GREATER THAN HC DWQ AND CSR DW STANDARDS
- GROUNDWATER CONCENTRATION(S) GREATER THAN FIGQ AL/CL/L AND HC DWQ STANDARDS
- GROUNDWATER CONCENTRATION(S) GREATER THAN FIGQ AL/CL/L, HC DWQ, AND CSR DW STANDARDS
- GROUNDWATER CONCENTRATION(S) GREATER THAN FIGQ AL/CL/L STANDARDS
- EPHw₁₀₋₁₉ LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS UNCORRECTED FOR PAHs IN WATER
- LEPHw LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS IN WATER
- PAHs POLYCYCLIC AROMATIC HYDROCARBONS
- VOCs VOLATILE ORGANIC COMPOUNDS
- MAHs MONOCYCLIC AROMATIC HYDROCARBONS
- VHw₆₋₁₀ VOLATILE HYDROCARBONS IN WATER
- VPHw VOLATILE PETROLEUM HYDROCARBONS IN WATER
- < LESS THAN
- RDL REPORTED DETECTION LIMIT
- NOT ANALYZED
- CSR BRITISH COLUMBIA CONTAMINATED SITES REGULATION
- FIGQ FIGQ
- HC HC
- AS APPLIED STANDARDS
- AL CSR LIVESTOCK WATER USE STANDARD
- DWQ DRINKING WATER GUIDELINE
- DW CSR DRINKING WATER USE STANDARD
- mbg METERS BELOW GRADE

SAMPLE I.D.		ANALYTE	
MW	Screen	LEPHw	
M/DD-YY	1.5-4.6	<200	
RESULTS		SCREEN (mbg)	

- NOTES:
1. Sample values are presented as Micrograms per Litre (µg/L) (parts per billion (ppb)).
 2. Sample Exceeding HC DWQ and CSR DW Standard in **PURPLE**.
 3. Sample Exceeding FIGQ AL/CL/L and HC DWQ Standard in **BLUE**.
 4. Sample Exceeding FIGQ AL/CL/L, HC DWQ, and CSR DW Standard in **RED**.
 5. Sample Exceeding FIGQ AL/CL/L Standard in **ORANGE**.



NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
2. THE DATE OF AERIAL PHOTO IS 2018.



10626 Scott Road Surrey, B C Brunswick Property Holdings Ltd.		
REVISION No. B	DATE Dec. 2020	PROJECT No. 15934-02

Figure 4
Groundwater Analytical Results



SV20-5	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	10	2.8E-3	7.84E-1	<AL/CU/L	5.88E-3	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			3.7E-4	1.03E-1	<AL/CU/L	7.77E-4	<AL/CU/L	<RDL	<RDL
POVC			1.5E-6	4.2E-4	<AS	3.6E-6	<AS	<RDL	<RDL

SV20-7	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	0.5	2.0E-2	<2.6E0	<RDL	<1.5E-2	<AL/CU/L	<RDL	<RDL
Duplicate			2.0E-2	<2.6E0	<RDL	<1.5E-2	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			2.0E-2	<2.6E0	<RDL	<1.5E-2	<AL/CU/L	<RDL	<RDL
Duplicate			2.0E-2	<2.6E0	<RDL	<1.5E-2	<AL/CU/L	<RDL	<RDL
POVC			1.0E-4	<1.3E-2	<RDL	<7.5E-5	<AS	<RDL	<RDL
Duplicate			1.0E-4	<1.3E-2	<RDL	<7.5E-5	<AS	<RDL	<RDL

SV20-9	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	10	2.8E-3	2.84E1	<AL/CU/L	8.24E-3	<AL/CU/L	<RDL	<AL/CU/L
PVC (CL/IL)			3.7E-4	2.88E0	<AL/CU/L	1.22E-3	<AL/CU/L	<RDL	<AL/CU/L
POVC			1.5E-6	1.7E-2	<AS	4.95E-6	<AS	<RDL	<AS

SV20-10	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	10	2.8E-3	<3.64E-1	<AL/CU/L	<2.1E-3	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			3.7E-4	<4.8E-2	<AL/CU/L	<2.77E-4	<AL/CU/L	<RDL	<RDL
POVC			1.5E-6	<1.95E-4	<AS	<1.02E-6	<AS	<RDL	<RDL

SV20-12	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	10	2.8E-3	<3.64E-1	<AL/CU/L	<2.1E-3	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			3.7E-4	<4.8E-2	<AL/CU/L	<2.77E-4	<AL/CU/L	<RDL	<RDL
POVC			1.5E-6	<1.95E-4	<AS	<1.02E-6	<AS	<RDL	<RDL

SV20-13	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	0.5	2.0E-2	<2.6E0	<AL/CU/L	<1.5E-2	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			2.0E-2	<2.6E0	<AL/CU/L	<1.5E-2	<AL/CU/L	<RDL	<RDL
POVC			1.0E-4	<1.3E-2	<AS	<7.5E-5	<AS	<RDL	<RDL

SV20-15	Date	Depth	Attenuation	VPHv	MAHs	Naphthalene	VOCs	Chlorinated Phenols	Miscellaneous Organics
PVC (AL)	27-Oct-20	10	2.8E-3	3.64E1	<AL/CU/L	14.84E-2	<AL/CU/L	<RDL	<RDL
PVC (CL/IL)			3.7E-4	4.8E0	<AL/CU/L	1.98E-3	<AL/CU/L	<RDL	<RDL
POVC			1.5E-6	1.95E-2	<AS	7.95E-6	<AS	<RDL	<RDL

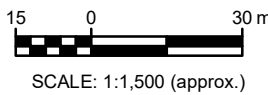
LEGEND

- SITE
--- PROPERTY LINE
--- LOT LINES
--- BUILDING OUTLINE
--- FORMER BUILDING OUTLINE
--- DRAINAGE FEATURE
- ▲ KEYSTONE BOREHOLE (2020)
⊕ KEYSTONE MONITORING WELL (2020)
⊙ KEYSTONE VAPOUR WELL (2020)
- ATTENUATED VAPOUR CONCENTRATION(S) LESS THAN CSR STANDARDS
● ATTENUATED VAPOUR CONCENTRATION(S) GREATER THAN CSR AL STANDARDS
● ATTENUATED VAPOUR CONCENTRATION(S) GREATER THAN CSR CL STANDARDS
● ATTENUATED VAPOUR CONCENTRATION(S) GREATER THAN CSR IL STANDARDS
- VOCs VOLATILE ORGANIC COMPOUNDS
MAHs MONOCYCLIC AROMATIC HYDROCARBONS
VPHv VOLATILE PETROLEUM HYDROCARBONS
< LESS THAN
RDL REPORTED DETECTION LIMIT
- NOT ANALYZED
CSR BRITISH COLUMBIA CONTAMINATED SITES REGULATION
AS APPLIED STANDARDS
AL CSR AGRICULTURAL USE LANDARD
CL CSR COMMERCIAL USE STANDARD
IL CSR INDUSTRIAL USE STANDARD
PVC PREDICTED INDOOR VAPOUR CONCENTRATION
POVC PREDICTED OUTDOOR VAPOUR CONCENTRATION
TG4 TECHNICAL GUIDANCE 4
mbg METRES BELOW GRADE
- SAMPLE I.D. ATTENUATION FACTOR(TG4) ANALYTE
- | | | | | |
|----------------------|---------|-------|-------------|-------------|
| SV20-X | Date | Depth | Attenuation | naphthalene |
| Predicted Indoor Air | M/DD/YY | 0.2 | 2.8E-03 | <0.02 |
- EXPOSURE DEPTH (mbg) DATE SAMPLE RESULT

NOTES:
1. Sample values are presented as Micrograms per cubic meter (µg/m³).
2. Sample Exceeding CSR AL Standard in **ORANGE**.
3. Sample Exceeding CSR CL Standard in **DARK RED**.
4. Sample Exceeding CSR IL Standard in **BROWN**.



NOTES:
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10626 Scott Road
Surrey, B C
Brunswick Property Holdings Ltd.

REVISION No.	DATE	PROJECT No.
A	Dec. 2020	15934-02

Figure 5
Vapour Analytical Results

TABLES

GLOSSARY: SOIL ANALYTICAL RESULTS

10582 and 10620/10626, Scott Rd., Surrey, BC

Brunswick Property Holdings Ltd.

Project #: 15934

December 2020

List of Acronyms

AL	Agricultural Land Use
B(a)P TPE	Benzo(a)pyrene Total Potency Equivalents
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CL	Commercial Land Use
CSR	British Columbia Contaminated Sites Regulation
EPHs₁₀₋₁₉	Extractable Petroleum Hydrocarbons (carbon range 10 to 19)
EPHs₁₉₋₃₂	Extractable Petroleum Hydrocarbons (carbon range 19 to 32)
F1	Petroleum Hydrocarbon Fraction 1 (carbon range 6 to 10)
F2	Petroleum Hydrocarbon Fraction 2 (carbon range 10 to 16)
F3	Petroleum Hydrocarbon Fraction 3 (carbon range 16 to 34)
F4	Petroleum Hydrocarbon Fraction 4 (carbon range 34 to 50)
HEPHs	Heavy Extractable Petroleum Hydrocarbons (corrected for PAH)
HMW-PAHs	Heavy Molecular Weight Polycyclic Aromatic Hydrocarbons
HWR	British Columbia Hazardous Waste Regulation
IACR	Index of Additive Cancer Risk
IL	Industrial Land Use
LEPHs	Light Extractable Petroleum Hydrocarbons (corrected for PAH)
LMW-PAHs	Light Molecular Weight Polycyclic Aromatic Hydrocarbons
MTBE	Methyl tert-Butyl Ether
n/s	No Standard
PAHs	Polycyclic Aromatic Hydrocarbons
PL	Urban Park Land Use
RDL	Reported Detection Limit
RL_{HD}	Residential (High-Density) Land Use
RL_{LD}	Residential (Low-Density) Land Use
RPD	Relative Percent Difference
TEQ	Toxicity Equivalence Quotient
VHs₆₋₁₀	Volatile Petroleum Hydrocarbons (carbon range 6 to 10)
VOC	Volatile Organic Compounds
VPHs	Volatile Petroleum Hydrocarbons (corrected for BTEX)
WL_N	Wildlands (Natural) Land Use
WL_R	Wildlands (Reverted) Land Use

Formulas

B(a)P TPE	$B(a)P\ TPE = 0.1 \cdot \text{benz(a)anthracene} + \text{benzo(a)pyrene} + 0.1 \cdot \text{benzo(b+j+k)fluoranthene} + 0.01 \cdot \text{benzo(g,h,i)perylene} + 0.01 \cdot \text{chrysene} + \text{dibenz(a,h)anthracene} + 0.1 \cdot \text{indeno(1,2,3-c,d)pyrene}$
IACR	$IACR = \text{benz(a)anthracene}/0.33 + \text{benzo(a)pyrene}/0.37 + \text{benzo(b+j+k)fluoranthene}/0.16 + \text{benzo(g,h,i)perylene}/6.8 + \text{chrysene}/2.1 + \text{dibenz(a,h)anthracene}/0.23 + \text{indeno(1,2,3-c,d)pyrene}/2.7$ <i>Note: For PAH concentrations below the RDL, one half of the value of the RDL is used in the B(a)P TPE and IACR calculations.</i>
RPD	$RPD = ((\text{Max. Concentration} - \text{Min. Concentration}) / ((\text{Max. Concentration} + \text{Min. Concentration}) / 2)) \cdot 100$

List of Symbols

--	Sample was not analyzed for the specified constituent
*	Laboratory reported detection limit is greater than applicable standard/guideline
**	Exceeds the CSR standard for boron (hot water soluble)
<	Concentration is less than the laboratory reported detection limit
a	BC CSR Matrix Numerical Soil Standards (BC CSR Schedule 3.1, Part 1) site specific factors: 1 Intake of contaminated soil 2 Groundwater used for drinking water 3 Toxicity to soil invertebrates and plants 6 Groundwater flow to surface water used by aquatic life (freshwater)
b	CSR standard is pH dependent
c	CSR standard is for hot water soluble boron
d	CSR standard for hexavalent chromium (Cr VI) used for conservativeness
e	Regional background soil quality for metals analyses from BC ENV Protocol 4 (Lower Mainland)
f	Guideline for fine-grained soils
g	Guideline for coarse-grained soils
h	CSR standard for VPHs/LEPHs/HEPHs used for comparison

List of Units

mbg	Metres below grade
µg/g	Micrograms per gram

Soil Exceedances

125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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TABLE 1: SOIL ANALYTICAL RESULTS
INORGANICS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	40000	250000	250000
20	40	40	20	40	40
12	12	12	10a	10a	10a
750	2000	2000	350a	350a	350a
4	8	8	1-85ab	1-350ab	1-350ab
2	n/g	n/g	8500 (2c)	50000	1000000
1.4	22	22	1-20ab	1-50ab	1-50ab
64	87	87	60ad	60ad	60ad
40	300	300	25a	25a	25a
63	91	91	75-150ab	75-300ab	75-300ab
n/g	n/g	n/g	35000	150000	150000
70	260	600	120 (200e)	120-150ab (200e)	120-1000ab (200e)
n/g	n/g	n/g	30	450	450
n/g	n/g	n/g	2000a	2000a	2000a
6.6	24	50	10a	75a	75a
5	40	40	15a	15a	15a
45	89	89	70-150ab	70-250ab	70-250ab
1	2.9	2.9	1a (4e)	1a (4e)	1a (4e)
20	40	40	20	40	40
n/g	n/g	n/g	9500	150000	150000
1	1	1	2	25	25
5	300	300	5	300	300
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	15	200	200
23	33	300	30a	30a	30a
130	130	130	100a	100a	100a
250	410	410	150-450ab	150-450ab	150-450ab

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	BH20-1 (1.0) 23-Oct-20 C078994 YS8622 1.0	BH20-1 (1.5) 23-Oct-20 C078994 YS8623 1.5	BH20-2 (0.3) 23-Oct-20 C078994 YS8625 0.3	BH20-3 (0.5) 23-Oct-20 C078994 YS8628 0.5	BH20-B 23-Oct-20 C078994 YS8755 Duplicate of BH20-3 (0.5)	RPD for BH20-3 (0.5) and BH20-B	BH20-4 (0.5) 23-Oct-20 C078994 YS8634 0.5	MW20-5 (2.5) 22-Oct-20 C078994 YS8640 2.5	BH20-6 (1.5) 23-Oct-20 C078994 YS8646 1.5	MW20-7 (3.5) 26-Oct-20 C078994 YS8652 3.5	BH20-8 (1.5) 26-Oct-20 C078994 YS8663 1.5
pH	--	5.90	6.38	11.40	8.74	8.74	--	8.52	8.42	7.45	7.86	8.50

Metals												
aluminum	µg/g	10200	11800	15800	12800	13400	5%	7500	10400	13300	11600	14400
antimony	µg/g	0.27	0.17	0.41	0.38	0.31	--	<0.10	0.25	0.17	1.19	1.38
arsenic	µg/g	2.22	1.96	4.51	3.1	2.85	8%	1.12	3.09	2.16	5.85	4.69
barium	µg/g	64.7	54.9	156	69.3	65.2	6%	27.8	46.4	65.7	81.2	82.3
beryllium	µg/g	0.22	<0.20	0.32	<0.20	<0.20	--	<0.20	<0.20	<0.20	<0.20	<0.20
boron	µg/g	2.4**	1.3	13.2**	2	1.9	--	1.2	1.8	1.7	3.2**	4.3**
cadmium	µg/g	0.16	0.069	0.127	0.12	0.092	--	<0.050	0.09	0.058	0.198	0.251
chromium (total)	µg/g	20.6	16.7	24.1	15.6	18.3	16%	11.6	15.1	20.5	29.8	26.1
cobalt	µg/g	6.33	5.06	7.7	7.83	7.91	1%	3.57	4.89	5.85	8.82	7.24
copper	µg/g	23.8	13.1	31.1	25	23.4	7%	8.96	15	13.9	25.1	31.6
iron	µg/g	17200	16000	20500	20900	21100	1%	14800	15800	17100	20900	18800
lead	µg/g	31.9	6.59	8.77	13.6	16.1	17%	1.46	6.5	3.04	19.2	31.8
lithium	µg/g	6.68	4.92	8.31	9.07	8.45	7%	2.49	4.37	5.58	9.6	6.94
manganese	µg/g	326	265	380	369	342	8%	151	246	269	388	334
mercury	µg/g	0.061	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	0.057
molybdenum	µg/g	0.77	0.2	1.95	1	1.09	9%	0.19	0.4	0.23	0.7	1.07
nickel	µg/g	20.1	11.3	20.8	15	16.2	8%	6.66	9.99	15.7	32.1	16.4
selenium	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50
silver	µg/g	<0.050	<0.050	0.058	<0.050	<0.050	--	0.206	0.182	0.319	0.181	0.17
strontium	µg/g	33.5	32.8	142	33.7	35.8	6%	36.7	34.6	36	37.6	54.9
thallium	µg/g	0.076	<0.050	0.081	0.051	<0.050	--	<0.050	<0.050	<0.050	0.064	0.06
tin	µg/g	0.56	0.27	0.72	0.39	0.44	--	0.2	0.37	0.32	1.94	2.68
titanium	µg/g	767	774	1120	939	1040	10%	657	690	898	813	817
tungsten	µg/g	<0.50	<0.50	1.04	0.91	1.12	--	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	µg/g	0.663	0.306	0.913	0.421	0.395	6%	0.234	0.595	0.356	0.554	0.635
vanadium	µg/g	44.9	45.6	52.2	56.6	59.6	5%	43.3	43.8	45.2	47.1	45.6
zinc	µg/g	65.1	29.8	60	47.7	45.2	5%	18.9	31.6	28.2	87.8	106



TABLE 1: SOIL ANALYTICAL RESULTS
INORGANICS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	40000	250000	250000
20	40	40	20	40	40
12	12	12	10a	10a	10a
750	2000	2000	350a	350a	350a
4	8	8	1-85ab	1-350ab	1-350ab
2	n/g	n/g	8500 (2c)	50000	1000000
1.4	22	22	1-20ab	1-50ab	1-50ab
64	87	87	60ad	60ad	60ad
40	300	300	25a	25a	25a
63	91	91	75-150ab	75-300ab	75-300ab
n/g	n/g	n/g	35000	150000	150000
70	260	600	120 (200e)	120-150ab (200e)	120-1000ab (200e)
n/g	n/g	n/g	30	450	450
n/g	n/g	n/g	2000a	2000a	2000a
6.6	24	50	10a	75a	75a
5	40	40	15a	15a	15a
45	89	89	70-150ab	70-250ab	70-250ab
1	2.9	2.9	1a (4e)	1a (4e)	1a (4e)
20	40	40	20	40	40
n/g	n/g	n/g	9500	150000	150000
1	1	1	2	25	25
5	300	300	5	300	300
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	15	200	200
23	33	300	30a	30a	30a
130	130	130	100a	100a	100a
250	410	410	150-450ab	150-450ab	150-450ab

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW20-9 (2.5) 26-Oct-20 C078994 YS8667 2.5	MW20-10 (0.5) 26-Oct-20 C078994 YS8671 0.5	MW20-10 (2.5) 26-Oct-20 C078994 YS8702 2.5	MW20-11 (0.5) 26-Oct-20 C078994 YS8704 0.5	MW20-12 (0.3) 26-Oct-20 C078994 YS8706 0.3	MW20-13 (0.5) 26-Oct-20 C078994 YS8711 0.5	MW20-F 26-Oct-20 C078994 YS8759 Duplicate of MW20-13 (0.5)	RPD for MW20-13 (0.5) and MW20-F	BH20-14 (0.5) 26-Oct-20 C078994 YS8719 0.5	BH20-14 (4.0) 26-Oct-20 C078994 YS8722 4.0	MW20-15 (7.5) 26-Oct-20 C078994 YS8747 7.5
pH	--	8.04	11.00	8.01	8.85	6.95	8.50	8.53	--	10.90	8.09	7.93

Metals												
aluminum	µg/g	15200	18100	19800	9130	8930	14300	14300	0%	13400	15100	18500
antimony	µg/g	0.31	1.58	0.41	0.45	0.22	2.69	1.93	33%	3.29	0.29	2.08
arsenic	µg/g	2.88	4.4	3.78	2.54	1.97	6.17	13.4	74%	8.84	2.75	4.42
barium	µg/g	68.2	239	94.4	53	44.6	108	95.1	13%	94.4	78.2	90.6
beryllium	µg/g	<0.20	0.25	<0.20	<0.20	<0.20	0.2	<0.20	--	<0.20	<0.20	<0.20
boron	µg/g	2	6.6**	3.1**	2.9**	2.7**	6.2**	5.3**	--	7.8**	1.8	2.2**
cadmium	µg/g	0.079	0.12	0.139	0.098	0.106	0.149	0.11	--	0.107	0.079	0.115
chromium (total)	µg/g	20.5	43.7	24.2	32.5	29.4	22.3	17.6	24%	22.8	21.9	23
cobalt	µg/g	6.88	11	7.67	8.46	7.69	7.26	6.98	4%	6.42	7.37	8.48
copper	µg/g	17.1	33.9	24.7	16.2	15.1	31.6	24.2	27%	35.1	21.1	30.6
iron	µg/g	19900	25000	21000	20200	17200	18700	18500	1%	18400	21200	22700
lead	µg/g	5.89	10.7	11.3	3.76	2.41	16	13.3	18%	12.6	4.72	17
lithium	µg/g	7.39	8.9	8.31	8.39	7.72	7.09	6.9	3%	6.47	7.19	7.69
manganese	µg/g	339	450	353	273	273	365	366	0%	319	405	477
mercury	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050
molybdenum	µg/g	0.44	1.55	0.5	0.49	0.42	3.51	3.71	6%	1.29	0.5	0.79
nickel	µg/g	16.4	32.3	17.6	37.3	33.7	14.4	13.1	9%	15.7	16.7	16.2
selenium	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50
silver	µg/g	0.086	0.13	0.099	0.056	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050
strontium	µg/g	40.5	139	40.7	26.6	22.1	127	104	20%	101	41.9	50.8
thallium	µg/g	0.057	0.059	0.069	<0.050	<0.050	<0.050	<0.050	--	<0.050	0.065	0.059
tin	µg/g	0.45	1.3	1.03	0.25	0.21	1.92	1.38	33%	2.49	0.4	8.74
titanium	µg/g	851	934	1000	819	825	835	719	15%	861	929	1050
tungsten	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	0.56	--	0.78	<0.50	<0.50
uranium	µg/g	0.402	0.568	0.477	0.325	0.285	0.607	0.562	8%	0.576	0.379	0.655
vanadium	µg/g	50	67.2	53.8	45.9	42.6	46.3	43.1	7%	47.1	52.3	59.4
zinc	µg/g	44.1	73.6	67.7	40.9	38.6	88.3	71.8	21%	94.1	39.8	63.6

TABLE 1: SOIL ANALYTICAL RESULTS
INORGANICS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	40000	250000	250000
20	40	40	20	40	40
12	12	12	10a	10a	10a
750	2000	2000	350a	350a	350a
4	8	8	1-85ab	1-350ab	1-350ab
2	n/g	n/g	8500 (2c)	50000	1000000
1.4	22	22	1-20ab	1-50ab	1-50ab
64	87	87	60ad	60ad	60ad
40	300	300	25a	25a	25a
63	91	91	75-150ab	75-300ab	75-300ab
n/g	n/g	n/g	35000	150000	150000
70	260	600	120 (200e)	120-150ab (200e)	120-1000ab (200e)
n/g	n/g	n/g	30	450	450
n/g	n/g	n/g	2000a	2000a	2000a
6.6	24	50	10a	75a	75a
5	40	40	15a	15a	15a
45	89	89	70-150ab	70-250ab	70-250ab
1	2.9	2.9	1a (4e)	1a (4e)	1a (4e)
20	40	40	20	40	40
n/g	n/g	n/g	9500	150000	150000
1	1	1	2	25	25
5	300	300	5	300	300
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	15	200	200
23	33	300	30a	30a	30a
130	130	130	100a	100a	100a
250	410	410	150-450ab	150-450ab	150-450ab

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	BH20-16 (0.5) 26-Oct-20 C078994 YS8749 0.5	BH20-16 (2.5) 26-Oct-20 C078994 YS8751 2.5
pH	--	6.72	7.85

Metals			
aluminum	µg/g	11400	14400
antimony	µg/g	<0.10	0.24
arsenic	µg/g	1.25	2.17
barium	µg/g	64.5	72.6
beryllium	µg/g	<0.20	<0.20
boron	µg/g	1.8	1.9
cadmium	µg/g	<0.050	0.078
chromium (total)	µg/g	11.7	18.8
cobalt	µg/g	5.52	6.94
copper	µg/g	7.41	19
iron	µg/g	18300	19300
lead	µg/g	2.09	5.12
lithium	µg/g	2.67	6.46
manganese	µg/g	374	343
mercury	µg/g	<0.050	<0.050
molybdenum	µg/g	2.05	0.57
nickel	µg/g	10.6	12.8
selenium	µg/g	<0.50	<0.50
silver	µg/g	<0.050	<0.050
strontium	µg/g	42.1	39.9
thallium	µg/g	<0.050	0.053
tin	µg/g	0.43	0.76
titanium	µg/g	753	851
tungsten	µg/g	0.7	<0.50
uranium	µg/g	0.476	0.458
vanadium	µg/g	52.7	49.7
zinc	µg/g	26.1	41.7

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards
QA/QC Exceedances	
80%	RPD exceeds data quality objectives

TABLE 2: SOIL ANALYTICAL RESULTS
HYDROCARBONS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
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30f / 170g	240f / 170g	240f / 170g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
150f / 150g	260f / 230g	260f / 230g	n/s	n/s	n/s
300f / 1300g	1700f / 2500g	1700f / 2500g	n/s	n/s	n/s
2800f / 5600g	3300f / 6600f	3300f / 6600g	n/s	n/s	n/s
n/g	n/g	n/g	200	200	200
n/g	n/g	n/g	200h	200h	200h
n/g	n/g	n/g	1000	2000	2000
n/g	n/g	n/g	1000h	2000h	2000h
n/g	n/g	n/g	1000h	2000h	2000h
n/g	n/g	n/g	1000	5000	5000
n/g	n/g	n/g	1000h	5000h	5000h
n/g	n/g	n/g	1000h	5000h	5000h

0.030f / 0.0068g	0.030f / 0.0068g	0.030f / 0.0068g	0.035a	0.035a	0.035a
0.082f / 0.018g	0.082f / 0.018g	0.082f / 0.018g	15a	15a	15a
0.1	50		0.1	50	50
0.37f / 0.08g	0.37f / 0.08g	0.37f / 0.08g	0.5a	0.5a	0.5a
11f / 2.4g	11f / 2.4g	11f / 2.4g	6.5a	6.5a	6.5a

0.28	0.28	0.28	950	15000	15000
320	320	320	n/s	n/s	n/s
2.5	32	32	2.5a	30a	30a
0.1	10	10	0.1	10	10
20	72	72	5a	30a	50a
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
n/g	n/g	n/g	n/s	n/s	n/s
0.1	10	10	0.1	10	10
n/g	n/g	n/g	200	4500	4500
0.1	10	10	0.1	10	10
50	180	180	50a	200a	200a
0.25	0.25	0.25	600	9500	9500
0.1	10	10	0.1	10	10
n/g	n/g	n/g	250	1000	1000
n/g	n/g	n/g	60	950	950
0.013	0.013	0.013	0.6a	20a	20a
0.046	0.046	0.046	0.1	50	50
0.1	100	100	0.1	100	100
n/g	n/g	n/g	2.5	10	10
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
5.3	5.3	5.3	n/s	n/s	n/s
1	1	1	n/s	n/s	n/s

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	BH20-1 (1.0) 23-Oct-20 C078994 YS8622 1.0	BH20-1 (1.5) 23-Oct-20 C078994 YS8623 1.5	BH20-2 (0.3) 23-Oct-20 C078994 YS8625 0.3	BH20-3 (0.5) 23-Oct-20 C078994 YS8628 0.5	BH20-B 23-Oct-20 C078994 YS8755 Duplicate of BH20-3 (0.5)	RPD for BH20-3 (0.5) and BH20-B	BH20-4 (0.5) 23-Oct-20 C078994 YS8634 0.5	MW20-5 (2.5) 22-Oct-20 C078994 YS8640 2.5
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Petroleum Hydrocarbons									
F1 ₆₋₁₀ uncorrected	µg/g	--	<10	<10	<10	<10	--	<10	<10
F1 ₆₋₁₀ minus BTEX	µg/g	--	<10	<10	<10	<10	--	<10	<10
F2 ₁₀₋₁₆ uncorrected	µg/g	--	<10		15	45	59	<10	10
F3 ₁₈₋₃₄ uncorrected	µg/g	--	<50	710	1300	1200	8%	57	85
F4 ₃₄₋₅₀	µg/g	--	57	1300	2800	2900	4%	110	140
VPHs	µg/g	--	--	--	--	--	--	<10	--
VHs ₆₋₁₀	µg/g	--	--	--	--	--	--	<10	--
LEPHs	µg/g	<100	<100	<100	<100	130	--	<100	<100
EPHs ₁₀₋₁₉	µg/g	<100	<100	<100	<100	130	--	<100	<100
EPHs ₁₀₋₁₉ Silica Gel	µg/g	<100	--	--	--	--	--	--	--
HEPHs	µg/g	390	<100	510	990	1000	1%	<100	<100
EPHs ₁₉₋₃₂	µg/g	410	<100	510	990	1000	1%	<100	<100
EPHs ₁₉₋₃₂ Silica Gel	µg/g	311	--	--	--	--	--	--	--

Monocyclic Aromatic Hydrocarbons									
benzene	µg/g	--	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050
ethylbenzene	µg/g	--	<0.010	<0.010	<0.010	<0.010	--	<0.010	<0.010
styrene	µg/g	--	<0.030	<0.030	<0.030	<0.030	--	<0.030	<0.030
toluene	µg/g	--	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050
xylenes	µg/g	--	<0.040	<0.040	<0.040	<0.040	--	<0.040	<0.040

Polycyclic Aromatic Hydrocarbons									
acenaphthene	µg/g	2.1	0.092	0.015	0.0073	0.0094	--	<0.0050	<0.0050
acenaphthylene	µg/g	0.17	0.012	0.015	0.035	0.041	16%	<0.0050	0.017
anthracene	µg/g	2.2	0.099	0.033	0.022	0.025	13%	<0.0040	0.016
benzo(a)anthracene	µg/g	2.8	0.11	0.096	0.063	0.072	--	<0.020	0.051
benzo(a)pyrene	µg/g	2.7	0.1	0.12	0.11	0.1	10%	<0.020	0.067
benzo(b)fluoranthene	µg/g	1.9	0.069	0.1	0.096	0.1	--	<0.020	0.044
benzo(b+j)fluoranthene	µg/g	3.2	0.12	0.16	0.14	0.15	7%	<0.020	0.072
benzo(g,h,i)perylene	µg/g	1.6	0.059	<0.25	<0.25	<0.25	--	<0.050	0.059
benzo(k)fluoranthene	µg/g	1.2	0.049	0.052	0.033	0.038	--	<0.020	0.026
chrysene	µg/g	2.7	0.11	0.14	0.14	0.17	19%	<0.020	0.06
dibenz(a,h)anthracene	µg/g	0.63	<0.020	0.029	0.022	<0.020	--	<0.020	<0.020
fluoranthene	µg/g	6.9	0.31	0.23	0.088	0.079	--	<0.020	0.074
fluorene	µg/g	2.1	0.099	0.022	0.027	0.03	--	<0.020	<0.020
indeno(1,2,3-cd)pyrene	µg/g	1.6	0.061	0.072	0.053	0.052	--	<0.020	0.046
methylnaphthalene, 1-	µg/g	0.88	<0.050	<0.050	<0.050	0.054	--	<0.050	<0.050
methylnaphthalene, 2-	µg/g	1.2	0.049	<0.020	0.032	0.053	--	<0.020	<0.020
naphthalene	µg/g	0.61	0.029	<0.010	<0.010	<0.010	--	<0.010	<0.010
phenanthrene	µg/g	7.3	0.43	0.13	0.083	0.097	16%	<0.010	0.034
pyrene	µg/g	6	0.26	0.25	0.14	0.15	7%	<0.020	0.094
quinoline	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050
Total HMW-PAHs	µg/g	29	1.2	1.2	0.78	0.81	--	<0.050	0.55
Total LMW-PAHs	µg/g	17	0.81	0.21	0.21	0.31	--	<0.050	0.067
Total PAHs	µg/g	46	2	1.4	0.99	1.1	--	<0.050	0.62
B(a)P TPE	µg/g	4.3	0.15	0.19	0.16	0.14	--	0.024	0.098
IACR	µg/g	48	1.8	2.2	1.8	1.8	--	0.24	1.05

TABLE 2: SOIL ANALYTICAL RESULTS
HYDROCARBONS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards

30f / 170g	240f / 170g	240f / 170g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
150f / 150g	260f / 230g	260f / 230g	n/s	n/s	n/s
300f / 1300g	1700f / 2500g	1700f / 2500g	n/s	n/s	n/s
2800f / 5600g	3300f / 6600f	3300f / 6600g	n/s	n/s	n/s
n/g	n/g	n/g	200	200	200
n/g	n/g	n/g	200h	200h	200h
n/g	n/g	n/g	1000	2000	2000
n/g	n/g	n/g	1000h	2000h	2000h
n/g	n/g	n/g	1000h	2000h	2000h
n/g	n/g	n/g	1000	5000	5000
n/g	n/g	n/g	1000h	5000h	5000h
n/g	n/g	n/g	1000h	5000h	5000h

0.030f / 0.0068g	0.030f / 0.0068g	0.030f / 0.0068g	0.035a	0.035a	0.035a
0.082f / 0.018g	0.082f / 0.018g	0.082f / 0.018g	15a	15a	15a
0.1	50		0.1	50	50
0.37f / 0.08g	0.37f / 0.08g	0.37f / 0.08g	0.5a	0.5a	0.5a
11f / 2.4g	11f / 2.4g	11f / 2.4g	6.5a	6.5a	6.5a

0.28	0.28	0.28	950	15000	15000
320	320	320	n/s	n/s	n/s
2.5	32	32	2.5a	30a	30a
0.1	10	10	0.1	10	10
20	72	72	5a	30a	50a
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
n/g	n/g	n/g	n/s	n/s	n/s
0.1	10	10	0.1	10	10
n/g	n/g	n/g	200	4500	4500
0.1	10	10	0.1	10	10
50	180	180	50a	200a	200a
0.25	0.25	0.25	600	9500	9500
0.1	10	10	0.1	10	10
n/g	n/g	n/g	250	1000	1000
n/g	n/g	n/g	60	950	950
0.013	0.013	0.013	0.6a	20a	20a
0.046	0.046	0.046	0.1	50	50
0.1	100	100	0.1	100	100
n/g	n/g	n/g	2.5	10	10
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s
5.3	5.3	5.3	n/s	n/s	n/s
1	1	1	n/s	n/s	n/s

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	BH20-6 (1.5) 23-Oct-20 C078994 YS8646 1.5	MW20-7 (3.5) 26-Oct-20 C078994 YS8652 3.5	BH20-8 (1.5) 26-Oct-20 C078994 YS8663 1.5	MW20-9 (2.5) 26-Oct-20 C078994 YS8667 2.5	MW20-10 (0.5) 26-Oct-20 C078994 YS8671 0.5	MW20-10 (2.5) 26-Oct-20 C078994 YS8702 2.5	MW20-11 (0.5) 26-Oct-20 C078994 YS8704 0.5	MW20-12 (0.3) 26-Oct-20 C078994 YS8706 0.3	MW20-13 (0.5) 26-Oct-20 C078994 YS8711 0.5	MW20-F 26-Oct-20 C078994 YS8759 Duplicate of MW20-13 (0.5)	RPD for MW20-13 (0.5) and MW20-F	BH20-14 (0.5) 26-Oct-20 C078994 YS8719 0.5	BH20-14 (4.0) 26-Oct-20 C078994 YS8722 4.0	MW20-15 (7.5) 26-Oct-20 C078994 YS8747 7.5	BH20-16 (0.5) 26-Oct-20 C078994 YS8749 0.5	BH20-16 (2.5) 26-Oct-20 C078994 YS8751 2.5
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Petroleum Hydrocarbons																	
F1 ₆₋₁₀ uncorrected	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10
F1 ₆₋₁₀ minus BTEX	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10
F2 ₁₀₋₁₆ uncorrected	µg/g	<10	17	11	<10	17	<10	<10	<10	29	31	--	13	<10	10	18	<10
F3 ₁₈₋₃₄ uncorrected	µg/g	94	120	250	<50	300	62	<50	<50	550	610	10%	170	<50	150	3400	72
F4 ₃₄₋₅₀	µg/g	70	85	280	<50	540	<50	<50	<50	910	1000	9%	420	<50	190	3300	55
VPHs	µg/g	<10	--	<10	--	<10	--	<10	<10	--	--	--	<10	--	--	<10	--
VHs ₆₋₁₀	µg/g	<10	--	<10	--	<10	--	<10	<10	--	--	--	<10	--	--	<10	--
LEPHs	µg/g	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	--	<100	<100	<100	<100	<100
EPHs ₁₀₋₁₉	µg/g	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	--	<100	<100	<100	<100	<100
EPHs ₁₀₋₁₉ Silica Gel	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEPHs	µg/g	<100	110	210	<100	260	<100	<100	<100	430	440	--	120	<100	110	3200	<100
EPHs ₁₉₋₃₂	µg/g	<100	120	210	<100	260	<100	<100	<100	440	440	--	120	<100	110	3200	<100
EPHs ₁₉₋₃₂ Silica Gel	µg/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Monocyclic Aromatic Hydrocarbons																	
benzene	µg/g	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
ethylbenzene	µg/g	<0.010	<0.010	<0.010	<0.010	0.041	<0.010	<0.010	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010	<0.010	<0.010
styrene	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	--	<0.030	<0.030	<0.030	<0.030	<0.030
toluene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	<0.050
xylenes	µg/g	<0.040	<0.040	<0.040	<0.040	0.21	<0.040	<0.040	<0.040	<0.040	<0.040	--	<0.040	<0.040	<0.040	<0.040	<0.040

Polycyclic Aromatic Hydrocarbons																	
acenaphthene	µg/g	<0.0050	1.1	0.0092	<0.0050	0.04	<0.0050	<0.0050	<0.0050	0.08	0.079	1%	0.023	<0.0050	0.0088	<0.0050	<0.0050
acenaphthylene	µg/g	<0.0050	0.063	0.034	<0.0050	0.02	<0.0050	<0.0050	<0.0050	0.018	0.018	--	0.0059	0.007	0.0075	<0.0050	<0.0050
anthracene	µg/g	<0.0040	0.14	0.051	<0.0040	0.069	0.0061	<0.0040	<0.0040	0.14	0.11	24%	0.024	0.0078	0.013	<0.0040	0.008
benzo(a)anthracene	µg/g	<0.020	0.31	0.13	<0.020	0.11	<0.020	<0.020	<0.020	0.22	0.24	9%	0.04	0.023	0.03	0.037	0.025
benzo(a)pyrene	µg/g	<0.020	0.36	0.17	<0.020	0.11	<0.020	<0.020	<0.020	0.22	0.25	13%	0.037	0.027	0.037	0.12	0.03
benzo(b)fluoranthene	µg/g	<0.020	0.24	0.12	<0.020	0.077	<0.020	<0.020	<0.020	0.17	0.18	6%	0.037	0.021	0.028	0.17	0.021
benzo(b+j)fluoranthene	µg/g	<0.020	0.4	0.19	<0.020	0.12	<0.020	<0.020	<0.020	0.27	0.29	7%	0.058	0.021	0.028	0.21	0.021
benzo(g,h,i)perylene	µg/g	<0.050	0.25	0.12	<0.050	0.074	<0.050	<0.050	<0.050	<0.25	0.22	--	<0.050	<0.050	<0.050	<0.25	<0.050
benzo(k)fluoranthene	µg/g	<0.020	0.16	0.07	<0.020	0.043	<0.020	<0.020	<0.020	0.096	0.11	--	<0.020	<0.020	<0.020	0.027	<0.020
chrysene	µg/g	<0.020	0.33	0.15	<0.020	0.13	<0.020	<0.020	<0.020	0.26	0.26	0%	0.053	0.027	0.038	0.24	0.028
dibenz(a,h)anthracene	µg/g	<0.020	0.067	0.029	<0.020	<0.020	<0.020	<0.020	<0.020	0.041	0.055	--	<0.020	<0.020	<0.020	<0.020	<0.020
fluoranthene	µg/g	<0.020	0.66	0.28	<0.020	0.26	0.028	<0.020	<0.020	0.6	0.64	6%	0.11	0.038	0.068	<0.020	0.043
fluorene	µg/g	<0.020	0.59	0.026	<0.020	0.05	<0.020	<0.020	<0.020	0.067	0.063	--	0.033	<0.020	<0.020	<0.020	<0.020
indeno(1,2,3-cd)pyrene	µg/g	<0.020	0.25	0.11	<0.020	0.062	<0.020	<0.020	<0.020	0.095	0.15	--	0.028	<0.020	0.025	0.047	<0.020
methylnaphthalene, 1-	µg/g	<0.050	0.36	<0.050	<0.050	0.091	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 2-	µg/g	<0.020	0.51	<0.020	<0.020	0.093	<0.020	<0.020	<0.020	<0.020	<0.020	--	<0.020	<0.020	<0.020	<0.020	<0.020
naphthalene	µg/g	<0.010	0.29	<0.010	<0.010	0.093	<0.010	<0.010	<0.010	<0.010	<0.010	--	0.014	<0.010	<0.010	<0.010	<0.010
phenanthrene	µg/g	<0.010	0.83	0.18	<0.010	0.26	0.019	<0.010	<0.010	0.31	0.29	7%	0.12	0.023	0.042	<0.010	0.021
pyrene	µg/g	<0.020	0.56	0.26	<0.020	0.23	0.03	<0.020	<0.020	0.54	0.58	7%	0.096	0.043	0.066	0.039	0.044
quinoline	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	<0.050
Total HMW-PAHs	µg/g	<0.050	3.3	1.5	<0.050	1.2	0.059	<0.050	<0.050	2.3	2.8	20%	0.42	0.18	0.29	0.72	0.19
Total LMW-PAHs	µg/g	<0.050	3.8	0.3	<0.050	0.71	<0.050	<0.050	<0.050	0.62	0.56	10%	0.22	<0.050	0.071	<0.050	<0.050
Total PAHs	µg/g	<0.050	7.2	1.8	<0.050	1.9	0.083	<0.050	<0.050	3	3.4	13%	0.64	0.22	0.36	0.72	0.22
B(a)P TPE	µg/g	0.024	0.54	0.25	0.024	0.16	0.024	0.024	0.024	0.33	0.39	--	0.061	0.044	0.057	0.17	0.047
IACR	µg/g	0.24	6.0	2.7	0.24	1.8	0.24	0.24	0.24	3.9	4.4	--	0.73	0.40	0.50	2.1	0.41

TABLE 3: SOIL ANALYTICAL RESULTS
VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
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n/g	n/g	n/g	100	550	550
n/g	n/g	n/g	300	4000	4000
n/g	n/g	n/g	20	300	300
0.1	50	50	0.1	50	50
n/g	n/g	n/g	n/s	n/s	n/s
0.1	50	50	0.1	50	50
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	85	400	400
n/g	n/g	n/g	3.5	15	15
n/g	n/g	n/g	3000	45000	45000
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
n/g	n/g	n/g	0.1	50	50
n/g	n/g	n/g	0.1	50	50
n/g	n/g	n/g	15	250	250
n/g	n/g	n/g	250	1500	1500
0.1	50	50	35	150	150
0.1	0.5	0.6	2.5a	2.5a	2.5a
n/g	n/g	n/g	450000	1000000	1000000
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.01	0.01	0.01	0.3a	0.3a	0.3a
n/g	n/g	n/g	4500	70000	70000
n/g	n/g	n/g	0.95	45	45

n/g	n/g	n/g	150	2000	2000
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
n/g	n/g	n/g	0.05	10	10
n/g	n/g	n/g	0.05	10	10

0.3	n/g	n/g	15000	200000	200000
n/g	n/g	n/g	2	9.5	9.5
0.3	n/g	n/g	9500	150000	150000
n/g	n/g	n/g	n/s	n/s	n/s
0.3	n/g	n/g	n/s	n/s	n/s
0.3	n/g	n/g	4000	20000	20000
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	1500	25000	25000
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	150	2500	2500

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards
QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID	Units	BH20-1 (1.5)	BH20-2 (0.3)	BH20-3 (0.5)	BH20-B	RPD	BH20-4 (0.5)	MW20-5 (2.5)	BH20-6 (1.5)	MW20-7 (3.5)	BH20-8 (1.5)
DATE SAMPLED		23-Oct-20	23-Oct-20	23-Oct-20	23-Oct-20	for	23-Oct-20	22-Oct-20	23-Oct-20	26-Oct-20	26-Oct-20
LAB CERTIFICATE		C078994	C078994	C078994	C078994	BH20-3 (0.5)	C078994	C078994	C078994	C078994	C078994
LAB SAMPLE ID		YS8623	YS8625	YS8628	YS8755	and	YS8634	YS8640	YS8646	YS8652	YS8663
SAMPLE DEPTH (mbg)		1.5	0.3	0.5	Duplicate of	BH20-B	0.5	2.5	1.5	3.5	1.5
SOIL DESCRIPTION											

Halogenated Aliphatics											
bromodichloromethane	µg/g	--	--	--	--	--	<0.050	--	<0.050	--	<0.050
bromoform	µg/g	--	--	--	--	--	<0.050	--	<0.050	--	<0.050
bromomethane	µg/g	--	--	--	--	--	<0.30	--	<0.30	--	<0.30
carbon tetrachloride	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
chloroethane	µg/g	--	--	--	--	--	<0.10	--	<0.10	--	<0.10
chloroform	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
chloromethane	µg/g	--	--	--	--	--	<0.050	--	<0.050	--	<0.050
dibromochloromethane	µg/g	--	--	--	--	--	<0.050	--	<0.050	--	<0.050
dibromoethane, 1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichlorodifluoromethane	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
dichloroethane, 1,1-	µg/g	--	--	--	--	--	<0.025	--	<0.025	--	<0.025
dichloroethane, 1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichloroethylene, 1,1-	µg/g	--	--	--	--	--	<0.025	--	<0.025	--	<0.025
dichloroethylene, 1,2- (cis)	µg/g	--	--	--	--	--	<0.030	--	<0.030	--	<0.030
dichloroethylene, 1,2- (trans)	µg/g	--	--	--	--	--	<0.030	--	<0.030	--	<0.030
dichloromethane	µg/g	--	--	--	--	--	<0.080	--	<0.080	--	<0.080
dichloropropane, 1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichloropropene, 1,3- (cis)	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichloropropene, 1,3- (trans)	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
hexachlorobutadiene, 1,3-	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
tetrachloroethane, 1,1,1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
tetrachloroethane, 1,1,2,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
tetrachloroethylene	µg/g	--	--	--	--	--	<0.010	--	<0.010	--	<0.010
trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
trichloroethane, 1,1,1-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
trichloroethane, 1,1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
trichloroethylene	µg/g	--	--	--	--	--	<0.0090	--	<0.0090	--	<0.0090
trichlorofluoromethane	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
vinyl chloride	µg/g	--	--	--	--	--	<0.040	--	<0.040	--	<0.040

Halogenated Aromatics											
bromobenzene	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
dichlorobenzene, 1,2-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichlorobenzene, 1,3-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
dichlorobenzene, 1,4-	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
monochlorobenzene	µg/g	--	--	--	--	--	<0.020	--	<0.020	--	<0.020
trichlorobenzene, 1,2,3-	µg/g	--	--	--	--	--	<0.030	--	<0.030	--	<0.030
trichlorobenzene, 1,2,4-	µg/g	--	--	--	--	--	<0.030	--	<0.030	--	<0.030

Non-Halogenated Aliphatics											
acetone	µg/g	--	--	--	--	--	<5.0*	--	<5.0*	--	<5.0*
butadiene, 1,3-	µg/g	--	--	--	--	--	<0.080	--	<0.080	--	<0.080
butanone, 2-	µg/g	--	--	--	--	--	<15*	--	<15*	--	<15*
decane, n-	µg/g	--	--	--	--	--	<2.0	--	<2.0	--	<2.0
methyl-2-pentanone, 4-	µg/g	--	--	--	--	--	<0.50	--	<0.50	--	<0.50
methyl tert-butyl ether	µg/g	<0.10	<0.10	<0.10	<0.10	--	<0.10	<0.10	<0.10	<0.10	<0.10
methylcyclohexane	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20

Non-Halogenated Aromatics											
isopropylbenzene	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
trimethylbenzene, 1,2,4-	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20
trimethylbenzene, 1,3,5-	µg/g	--	--	--	--	--	<0.20	--	<0.20	--	<0.20

TABLE 3: SOIL ANALYTICAL RESULTS
VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards

n/g	n/g	n/g	100	550	550
n/g	n/g	n/g	300	4000	4000
n/g	n/g	n/g	20	300	300
0.1	50	50	0.1	50	50
n/g	n/g	n/g	n/s	n/s	n/s
0.1	50	50	0.1	50	50
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	85	400	400
n/g	n/g	n/g	3.5	15	15
n/g	n/g	n/g	3000	45000	45000
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
n/g	n/g	n/g	0.1	50	50
n/g	n/g	n/g	0.1	50	50
n/g	n/g	n/g	15	250	250
n/g	n/g	n/g	250	1500	1500
0.1	50	50	35	150	150
0.1	0.5	0.6	2.5a	2.5a	2.5a
n/g	n/g	n/g	450000	1000000	1000000
0.1	50	50	0.1	50	50
0.1	50	50	0.1	50	50
0.01	0.01	0.01	0.3a	0.3a	0.3a
n/g	n/g	n/g	4500	70000	70000
n/g	n/g	n/g	0.95	45	45

n/g	n/g	n/g	150	2000	2000
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
n/g	n/g	n/g	0.05	10	10
n/g	n/g	n/g	0.05	10	10

0.3	n/g	n/g	15000	200000	200000
n/g	n/g	n/g	2	9.5	9.5
0.3	n/g	n/g	9500	150000	150000
n/g	n/g	n/g	n/s	n/s	n/s
0.3	n/g	n/g	n/s	n/s	n/s
0.3	n/g	n/g	4000	20000	20000
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	1500	25000	25000
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	150	2500	2500

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW20-9 (2.5) 26-Oct-20 C078994 YS8667 2.5	MW20-10 (0.5) 26-Oct-20 C078994 YS8671 0.5	MW20-10 (2.5) 26-Oct-20 C078994 YS8702 2.5	MW20-11 (0.5) 26-Oct-20 C078994 YS8704 0.5	MW20-12 (0.3) 26-Oct-20 C078994 YS8706 0.3	MW20-13 (0.5) 26-Oct-20 C078994 YS8711 0.5	MW20-F 26-Oct-20 C078994 YS8759 Duplicate of MW20-13 (0.5)	RPD for MW20-13 (0.5) and MW20-F	BH20-14 (0.5) 26-Oct-20 C078994 YS8719 0.5	BH20-14 (4.0) 26-Oct-20 C078994 YS8722 4.0	MW20-15 (7.5) 26-Oct-20 C078994 YS8747 7.5	BH20-16 (0.5) 26-Oct-20 C078994 YS8749 0.5	BH20-16 (2.5) 26-Oct-20 C078994 YS8751 2.5
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Halogenated Aliphatics														
bromodichloromethane	µg/g	--	<0.050	--	<0.050	<0.050	--	--	--	<0.050	--	--	<0.050	--
bromoform	µg/g	--	<0.050	--	<0.050	<0.050	--	--	--	<0.050	--	--	<0.050	--
bromomethane	µg/g	--	<0.30	--	<0.30	<0.30	--	--	--	<0.30	--	--	<0.30	--
carbon tetrachloride	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
chloroethane	µg/g	--	<0.10	--	<0.10	<0.10	--	--	--	<0.10	--	--	<0.10	--
chloroform	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
chloromethane	µg/g	--	<0.050	--	<0.050	<0.050	--	--	--	<0.050	--	--	<0.050	--
dibromochloromethane	µg/g	--	<0.050	--	<0.050	<0.050	--	--	--	<0.050	--	--	<0.050	--
dibromoethane, 1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichlorodifluoromethane	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
dichloroethane, 1,1-	µg/g	--	<0.025	--	<0.025	<0.025	--	--	--	<0.025	--	--	<0.025	--
dichloroethane, 1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichloroethylene, 1,1-	µg/g	--	<0.025	--	<0.025	<0.025	--	--	--	<0.025	--	--	<0.025	--
dichloroethylene, 1,2- (cis)	µg/g	--	<0.030	--	<0.030	<0.030	--	--	--	<0.030	--	--	<0.030	--
dichloroethylene, 1,2- (trans)	µg/g	--	<0.030	--	<0.030	<0.030	--	--	--	<0.030	--	--	<0.030	--
dichloromethane	µg/g	--	<0.080	--	<0.080	<0.080	--	--	--	<0.080	--	--	<0.080	--
dichloropropane, 1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichloropropene, 1,3- (cis)	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichloropropene, 1,3- (trans)	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
hexachlorobutadiene, 1,3-	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
tetrachloroethane, 1,1,1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
tetrachloroethane, 1,1,1,2,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
tetrachloroethylene	µg/g	--	<0.010	--	<0.010	<0.010	--	--	--	<0.010	--	--	<0.010	--
trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
trichloroethane, 1,1,1-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
trichloroethane, 1,1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
trichloroethylene	µg/g	--	<0.0090	--	<0.0090	<0.0090	--	--	--	<0.0090	--	--	<0.0090	--
trichlorofluoromethane	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
vinyl chloride	µg/g	--	<0.040	--	<0.040	<0.040	--	--	--	<0.040	--	--	<0.040	--

Halogenated Aromatics														
bromobenzene	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
dichlorobenzene, 1,2-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichlorobenzene, 1,3-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
dichlorobenzene, 1,4-	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
monochlorobenzene	µg/g	--	<0.020	--	<0.020	<0.020	--	--	--	<0.020	--	--	<0.020	--
trichlorobenzene, 1,2,3-	µg/g	--	<0.030	--	<0.030	<0.030	--	--	--	<0.030	--	--	<0.030	--
trichlorobenzene, 1,2,4-	µg/g	--	<0.030	--	<0.030	<0.030	--	--	--	<0.030	--	--	<0.030	--

Non-Halogenated Aliphatics														
acetone	µg/g	--	<5.0*	--	<5.0*	<5.0*	--	--	--	<5.0*	--	--	<5.0*	--
butadiene, 1,3-	µg/g	--	<0.080	--	<0.080	<0.080	--	--	--	<0.080	--	--	<0.080	--
butanone, 2-	µg/g	--	<15*	--	<15*	<15*	--	--	--	<15*	--	--	<15*	--
decane, n-	µg/g	--	<2.0	--	<2.0	<2.0	--	--	--	<2.0	--	--	<2.0	--
methyl-2-pentanone, 4-	µg/g	--	<0.50	--	<0.50	<0.50	--	--	--	<0.50	--	--	<0.50	--
methyl tert-butyl ether	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	--	<0.10	<0.10	<0.10	<0.10	<0.10
methylcyclohexane	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--

Non-Halogenated Aromatics														
isopropylbenzene	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
trimethylbenzene, 1,2,4-	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--
trimethylbenzene, 1,3,5-	µg/g	--	<0.20	--	<0.20	<0.20	--	--	--	<0.20	--	--	<0.20	--

TABLE 4: SOIL ANALYTICAL RESULTS
PHENOLICS

10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	0.05	5	5
0.05	5	5	0.05	5	5
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
0.05	5	5	n/s	n/s	n/s
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
0.05	5	5	n/s	n/s	n/s
7.6	7.6	7.6	0.1-300ab	0.1-300ab	0.1-300ab
n/g	n/g	n/g	0.05	5	5
0.05	5	5	0.05	5	5
n/g	n/g	n/g	0.05	5	5
0.05	5	5	n/s	n/s	n/s
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
n/g	n/g	n/g	0.05	5	5
0.05	5	5	0.05	5	5
n/g	n/g	n/g	0.05	5	5
0.05	5	5	n/s	n/s	n/s
n/g	n/g	n/g	n/s	n/s	n/s

n/g	n/g	n/g	1500	25000	25000
0.1	10	10	0.1	10	10
n/g	n/g	n/g	25	150	4000
n/g	n/g	n/g	40	250	7000
0.1	10	10	0.1	10	10
n/g	n/g	n/g	100	550	550
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
0.1	10	10	0.1	10	10
3.8	3.8	3.8	7.5a	7.5a	7.5a
n/g	n/g	n/g	n/s	n/s	n/s

Soil Exceedances	
125	Exceeds CCME AL guidelines
125	Exceeds CCME CL guidelines
125	Exceeds CCME IL guidelines
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	BH20-1 (1.0) 23-Oct-20 C078994 YS8622 1.0
pH	--	5.90

Chlorinated Phenols		
dichlorophenol, 2,3-	µg/g	<0.0050
dichlorophenol, 2,4&2,5-	µg/g	<0.0050
dichlorophenol, 2,6-	µg/g	<0.0050
dichlorophenol, 3,4-	µg/g	<0.0050
dichlorophenol, 3,5-	µg/g	<0.0050
dichlorophenols (total)	µg/g	<0.0050
monochlorophenol, 2-	µg/g	<0.0050
monochlorophenol, 3&4-	µg/g	<0.0050
monochlorophenols (total)	µg/g	<0.0050
pentachlorophenol	µg/g	<0.0050
tetrachlorophenol, 2,3,4,5-	µg/g	<0.0050
tetrachlorophenol, 2,3,4,6-	µg/g	<0.0050
tetrachlorophenol, 2,3,5,6-	µg/g	<0.0050
tetrachlorophenols (total)	µg/g	<0.0050
trichlorophenol, 2,3,4-	µg/g	<0.0050
trichlorophenol, 2,3,5-	µg/g	<0.0050
trichlorophenol, 2,3,6-	µg/g	<0.0050
trichlorophenol, 2,4,5-	µg/g	<0.0050
trichlorophenol, 2,4,6-	µg/g	<0.0050
trichlorophenol, 3,4,5-	µg/g	<0.0050
trichlorophenols (total)	µg/g	<0.0050
chlorophenols (total)	µg/g	<0.0050

Non-Chlorinated Phenols		
chloro-3-methylphenol, 4-	µg/g	<5.0
dimethylphenol, 2,4-	µg/g	<0.050
dimethylphenol, 2,6-	µg/g	<0.050
dimethylphenol, 3,4-	µg/g	<0.050
dinitrophenol, 2,4-	µg/g	<0.050
hydroquinone	µg/g	<5.0
methyl-4,6-dinitrophenol, 2-	µg/g	<0.050
methylphenol, 2-	µg/g	<0.050
methylphenol, 3&4-	µg/g	<0.050
nitrophenol, 2-	µg/g	<0.050
nitrophenol, 4-	µg/g	<0.050
phenol	µg/g	<0.050
nonchlorinated phenols (total)	µg/g	<5.0

TABLE 5: SOIL ANALYTICAL RESULTS
GLYCOLS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CCME AL Guidelines	CCME CL Guidelines	CCME IL Guidelines	CSR AL Standards	CSR CL Standards	CSR IL Standards

n/g	n/g	n/g	n/s	n/s	n/s
960	960	960	10a	10a	10a
n/g	n/g	n/g	n/s	n/s	n/s
n/g	n/g	n/g	30000	450000	450000

Soil Exceedances
125
125
125
125
125
125

Exceeds CCME AL guidelines
Exceeds CCME CL guidelines
Exceeds CCME IL guidelines
Exceeds CSR AL standards
Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances
80%

RPD exceeds data quality objectives

SAMPLE ID	Units	BH20-4 (0.5)	BH20-6 (1.5)	BH20-8 (1.5)	MW20-10 (0.5)	MW20-11 (0.5)	MW20-12 (0.3)	BH20-14 (0.5)	BH20-16 (0.5)
DATE SAMPLED		23-Oct-20	23-Oct-20	26-Oct-20	26-Oct-20	26-Oct-20	26-Oct-20	26-Oct-20	26-Oct-20
LAB CERTIFICATE		C078994	C078994	C078994	C078994	C078994	C078994	C078994	C078994
LAB SAMPLE ID		YS8634	YS8646	YS8663	YS8671	YS8704	YS8706	YS8719	YS8749
SAMPLE DEPTH (mbg)		0.5	1.5	1.5	0.5	0.5	0.3	0.5	0.5
SOIL DESCRIPTION									

Glycols									
diethylene glycol	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
ethylene glycol	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
propylene glycol	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
triethylene glycol	µg/g	<10	<10	<10	<10	<10	<10	<10	<10

GLOSSARY: GROUNDWATER ANALYTICAL RESULTS

10582 and 10620/10626, Scott Rd., Surrey, BC

Brunswick Property Holdings Ltd.

Project #: 15934

December 2020

List of Acronyms

AL	Agricultural Land Use
AW_{FW}	Aquatic Life Water Use (freshwater)
AW_M	Aquatic Life Water Use (marine)
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CL	Commercial Land Use
CSR	British Columbia Contaminated Sites Regulation
DW	Drinking Water Use
EPHW₁₀₋₁₉	Extractable Petroleum Hydrocarbons (carbon range 10 to 19)
EPHW₁₉₋₃₂	Extractable Petroleum Hydrocarbons (carbon range 19 to 32)
F1	Petroleum Hydrocarbon Fraction 1 (carbon range 6 to 10)
F2	Petroleum Hydrocarbon Fraction 2 (carbon range 10 to 16)
F3	Petroleum Hydrocarbon Fraction 3 (carbon range 16 to 34)
F4	Petroleum Hydrocarbon Fraction 4 (carbon range 34 to 50)
HEPHw	Heavy Extractable Petroleum Hydrocarbons (corrected for PAHs)
HMW-PAHs	Heavy Molecular Weight Polycyclic Aromatic Hydrocarbons
HWR	British Columbia Hazardous Waste Regulation
IL	Industrial Land Use
LEPHw	Light Extractable Petroleum Hydrocarbons (corrected for PAHs)
LMW-PAHs	Light Molecular Weight Polycyclic Aromatic Hydrocarbons
LW	Livestock Water Use
MTBE	Methyl tert-Butyl Ether
n/s	No Standard
PAHs	Polycyclic Aromatic Hydrocarbons
PL	Parkland Use
RDL	Reported Detection Limit
RL	Residential Land Use
RPD	Relative Percent Difference
TDS	Total Dissolved Solids
VHW₆₋₁₀	Volatile Petroleum Hydrocarbons (carbon range 6 to 10)
VOC	Volatile Organic Compounds
VPHw	Volatile Petroleum Hydrocarbons (corrected for BTEX)

Formulas

RPD	$RPD = ((\text{Max. Concentration} - \text{Min. Concentration}) / ((\text{Max. Concentration} + \text{Min. Concentration}) / 2)) * 100$
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List of Symbols

<	Concentration is less than the laboratory reported detection limit
*	Laboratory reported detection limit is greater than applicable standard/guideline
**	Concentration is greater than the applicable CSR standard, but less than the background groundwater estimate
--	Sample was not analyzed for the specified constituent
†	FIGQ AL Guidelines (Tier 2) site specific factors: 1 <i>Inhalation</i> 2 <i>Soil organisms direct contact</i> 3 <i>Freshwater life</i>
a	Guideline/standard is pH dependent
b	Guideline/standard is hardness dependent
c	Regional background groundwater estimate from BC ENV Technical Bulletin 3 (Lower Mainland 1)
d	Interim background groundwater concentration estimate
e	Guideline for coarse-grained soils
f	Guideline for fine-grained soils

List of Units

mbg	Metres below grade
µg/L	Micrograms per litre
mg/L	Milligrams per litre

Groundwater Exceedances

125	Exceeds FIGQG AL/CL/L guidelines
125	Exceeds BC WQ guidelines
125	Exceeds CSR AW _{FW} standards
125	Exceeds CSR DW standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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TABLE 6: GROUNDWATER ANALYTICAL RESULTS
INORGANICS

10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

FIGQ AL Guidelines (Tier 2 ¹)	FIGQ CL Guidelines (Tier 2 ¹)	FIGQ IL Guidelines (Tier 2 ¹)	HC DWQ Guidelines	CSR AW _{FW} Standards	CSR DW Standards
n/g	n/g	n/g	n/g	n/s	n/s
6.5-9	6.5-9	6.5-9	n/g	n/s	n/s

5-100a	5-100a	5-100a	n/g	n/s	9500
2000	2000	2000	6	90	6
5	5	5	10	50	10 (37c)
500	500	500	2000	10000	1000
5.3	5.3	5.3	n/g	1.5	8
n/g	n/g	n/g	n/g	n/s	n/s
500	500	500	5000	12000	5000
0.017	0.017	0.017	7	0.5-4b	5
n/g	n/g	n/g	n/g	n/s	n/s
8.9	8.9	8.9	50	10	50
50	50	50	n/g	40	20d
2-4b	2-4b	2-4b	2000	20-90b	1500
300	300	300	n/g	n/s	n/a
1-7b	1-7b	1-7b	5	40-160b	10
n/g	n/g	n/g	n/g	n/s	8 (28c)
n/g	n/g	n/g	n/g	n/s	n/s
200	200	200	120	n/s	n/a
0.026	0.026	0.026	1	0.25	1
73	73	73	n/g	10000	250
25-150b	25-150b	25-150b	n/g	250-1500b	80
n/g	n/g	n/g	n/g	n/s	n/s
1	1	1	50	20	10
n/g	n/g	n/g	n/g	n/s	n/s
0.25	0.25	0.25	n/g	0.5-15b	20
n/g	n/g	n/g	7000	n/s	2500
n/g	n/g	n/g	n/g	n/s	n/s
0.8	0.8	0.8	n/g	3	n/s
n/g	n/g	n/g	n/g	n/s	2500
100	100	100	n/g	1000	n/s
15	10	10	20	85	20
100	100	100	n/g	n/s	20
30	10	10	n/g	75-3150b	3000
n/g	n/g	n/g	n/g	n/s	n/s

Groundwater Exceedances

125	Exceeds FIGQG AL/CL/IL guidelines
125	Exceeds BC WQ guidelines
125	Exceeds CSR AW _{FW} standards
125	Exceeds CSR DW standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID TOP OF SCREEN (mbg) BOTTOM OF SCREEN (mbg)	Units	MW20-5 29-Oct-20 C080058 YT5535 2.8 4.6	MW20-7 28-Oct-20 C080058 YT5536 1.8 3.6	MW20-9 29-Oct-20 C080058 YT5537 4.2 6.1	MW20-10 29-Oct-20 C080058 YT5538 2.4 4.2	MW20-11 29-Oct-20 C080058 YT5539 0.6 2.1	MW20-12 29-Oct-20 C080058 YT5540 2.8 4.6	MW20-13 29-Oct-20 C080058 YT5541 0.8 2.4	MW20-15 28-Oct-20 C080058 YT5542 5.8 7.6	MW20-A 28-Oct-20 C080058 YT5543 Duplicate of MW20-15	RPD or MS for MW20-15 and MW20-A
hardness	mg/L	554	390	698	484	279	238	217	1010	1040	--
pH (field)	--	6.76	7.16	6.94	6.58	7.03	6.79	6.79	6.86	6.86	--

Dissolved Metals											
aluminum	µg/L	34.7	39.1	34.6	78.6	102	23	95	41.1	39.4	4%
antimony	µg/L	1	<0.50	11	2.1	45	<2.5	<2.5	0.77	0.75	--
arsenic	µg/L	7.28**	4.35	13**	6.74**	20.2**	2.56	3.41	3.1	3.04	2%
barium	µg/L	169	112	244	107	158	128	71.3	266	274	3%
beryllium	µg/L	<0.20	<0.10	<0.20	<0.20	<0.10	<0.50	<0.50	<0.10	<0.10	--
bismuth	µg/L	<2.0	<1.0	<2.0	<2.0	<1.0	<5.0	<5.0	<1.0	<1.0	--
boron	µg/L	284	54	237	<100	<50	<250	<250	70	70	--
cadmium	µg/L	<0.020	<0.010	<0.020	0.076	<0.010	<0.050	<0.050	0.037	0.036	--
calcium	µg/L	178000	131000	242000	155000	103000	62300	72600	319000	332000	4%
chromium (total)	µg/L	<2.0	<1.0	<2.0	3.3	1.2	<5.0	<5.0	1.1	1	--
cobalt	µg/L	7.91	4.2	3.47	14.3	2.07	3.9	4.6	16.6	16.3	2%
copper	µg/L	<0.40	<0.20	<0.40	0.87	1.12	<1.0	2.1	1.86	1.74	7%
iron	µg/L	3140	13000	18100	16600	13100	19400	3150	8530	8700	2%
lead	µg/L	<0.40	<0.20	<0.40	<0.40	0.71	<1.0	<1.0	<0.20	<0.20	--
lithium	µg/L	10.2**	<2.0	<4.0	<4.0	3.7	<10*	<10*	12.3**	12.4**	--
magnesium	µg/L	26700	15700	22900	23600	5440	20100	8640	52600	51700	2%
manganese	µg/L	2900	3690	3590	3990	500	1270	812	5010	4950	1%
mercury	µg/L	<0.0019	<0.0019	<0.0019	<0.0019	0.0022	<0.0019	<0.0019	0.0036	0.0038	--
molybdenum	µg/L	<2.0	<1.0	7.4	2.4	105	<5.0	<5.0	1.5	1.4	--
nickel	µg/L	10.8	3.5	4.5	15.9	3.9	<5.0	14.3	30.4	29.7	2%
potassium	µg/L	16200	6100	10900	15200	12500	1620	16900	16800	16300	3%
selenium	µg/L	0.84	0.33	0.71	0.78	0.88	<0.50	<0.50	2.33	2.33	0%
silicon	µg/L	22300	15500	18300	25400	17300	25600	25700	14800	15200	3%
silver	µg/L	<0.040	<0.020	<0.040	<0.040	<0.020	<0.10	<0.10	<0.020	<0.020	--
strontium	µg/L	781	591	1320	581	514	267	205	1420	1400	1%
sulphur	µg/L	13900	9000	15400	8600	18600	<15000	<15000	40000	38100	5%
thallium	µg/L	0.036	0.012	<0.020	0.064	<0.010	<0.050	0.067	0.147	0.145	1%
tin	µg/L	<10	<5.0	<10	<10	<5.0	<25	<25	<5.0	<5.0	--
titanium	µg/L	<10	<5.0	<10	<10	<5.0	<25	<25	<5.0	<5.0	--
uranium	µg/L	2.7	0.52	1.71	1.61	0.46	<0.50	<0.50	8.75	8.68	1%
vanadium	µg/L	<10	<5.0	<10	<10	<5.0	<25*	<25*	<5.0	<5.0	--
zinc	µg/L	<10	8.8	<10	31	5.8	<25	<25	21.8	20.5	--
zirconium	µg/L	0.56	0.4	3.31	0.86	0.69	<0.50	<0.50	3.2	3.13	2%

TABLE 7: GROUNDWATER ANALYTICAL RESULTS
HYDROCARBONS

10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

FIGQ AL Guidelines (Tier 2 ¹)	FIGQ CL Guidelines (Tier 2 ¹)	FIGQ IL Guidelines (Tier 2 ¹)	HC DWQ Guidelines	CSR AW _{FW} Standards	CSR DW Standards
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810e / 6500f	810e / 6500f	810e / 6500f	n/g	n/s	n/s
810e / 6500f	810e / 6500f	810e / 6500f	n/g	n/s	n/s
1300e / 1800f	1300e / 1800f	1300e / 1800f	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	1500	n/s
n/g	n/g	n/g	n/g	15000	15000
n/g	n/g	n/g	n/g	500	n/s
n/g	n/g	n/g	n/g	5000	5000
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	n/s

88	88	88	5	400	5
3200	3200	3200	140	2000	140
72	72	72	n/g	720	800
83e / 82000f	83e / 82000f	83e / 82000f	60	5	60
3900e / 21000f	13000	3900	90	300	90

5.8	5.8	5.8	n/g	60	250
46	46	46	n/g	n/s	n/s
0.05	0.05	0.05	n/g	0.5	n/s
0.012	0.012	0.012	n/g	1	1000
0.018	0.018	0.018	n/g	1	0.07
0.015e / 0.017f	0.015e / 0.017f	0.015e / 0.017f	0.04	0.1	0.01
0.48	0.48	0.48	n/g	n/s	0.07
0.17e / 0.21f	0.17e / 0.21f	0.17e / 0.21f	n/g	n/s	n/s
0.48	0.48	0.48	n/g	n/s	n/s
0.1	0.1	0.1	n/g	1	7
0.26e / 0.28f	0.26e / 0.28f	0.26e / 0.28f	n/g	n/s	0.01
0.04	0.04	0.04	n/g	2	150
3	3	3	n/g	120	150
0.21e / 0.23f	0.21e / 0.23f	0.21e / 0.23f	n/g	n/s	n/s
180	180	180	n/g	n/s	5.5
180	180	180	n/g	n/s	15
1.1	1.1	1.1	n/g	10	80
0.4	0.4	0.4	n/g	3	n/s
0.025	0.025	0.025	n/g	0.2	100
3.4	n/g	n/g	n/g	34	0.05
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	n/s

Groundwater Exceedances

125	Exceeds FIGQG AL/CL/IL guidelines
125	Exceeds BC WQ guidelines
125	Exceeds CSR AW _{FW} standards
125	Exceeds CSR DW standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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SAMPLE ID	Units	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-13	MW20-15	MW20-A	RPD
DATE SAMPLED		29-Oct-20	28-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	28-Oct-20	28-Oct-20	for
LAB CERTIFICATE		C080058	C080058	C080058	C080058	C080058	C080058	C080058	C080058	C080058	MW20-15
LAB SAMPLE ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5541	YT5542	YT5543	and
TOP OF SCREEN (mbg)		2.8	1.8	4.2	2.4	0.6	2.8	0.8	5.8	Duplicate of	MW20-A
BOTTOM OF SCREEN (mbg)		4.6	3.6	6.1	4.2	2.1	4.6	2.4	7.6	MW20-15	

Petroleum Hydrocarbons											
F1 ₆₋₁₀ uncorrected	µg/L	<300	<300	<300	<300	<300	<300	<300	<300	<300	--
F1 ₆₋₁₀ minus BTEX	µg/L	<300	<300	<300	<300	<300	<300	<300	<300	<300	--
F2 ₁₀₋₁₆ uncorrected	µg/L	<150	<150	<150	<150	<150	<150	<150	<150	<150	--
F3 ₁₆₋₃₄ uncorrected	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--
F4 ₃₄₋₅₀	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--
VPHw	µg/L	<300	<300	<300	<300	<300	<300	<300	<300	<300	--
VHW ₆₋₁₀	µg/L	<300	<300	<300	<300	<300	<300	<300	<300	<300	--
LEPHw	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--
EPHw ₁₀₋₁₉	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--
HEPHw	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--
EPHw ₁₉₋₃₂	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	--

Monocyclic Aromatic Hydrocarbons											
benzene	µg/L	0.49	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	--
ethylbenzene	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	--
styrene	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
toluene	µg/L	0.49	<0.40	<0.40	0.59	0.46	<0.40	0.48	0.45	0.47	--
xylenes	µg/L	0.62	<0.40	<0.40	0.42	<0.40	<0.40	<0.40	<0.40	<0.40	--

Polycyclic Aromatic Hydrocarbons											
acenaphthene	µg/L	<0.050	0.072	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
acenaphthylene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
acridine	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
anthracene	µg/L	<0.010	0.019	0.015	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	--
benzo(a)anthracene	µg/L	<0.010	0.037	0.013	0.028	<0.010	<0.010	<0.010	<0.010	<0.010	--
benzo(a)pyrene	µg/L	0.0056	0.055	0.014	0.036	<0.0050	<0.0050	0.0094	<0.0050	<0.0050	--
benzo(b+j)fluoranthene	µg/L	<0.030	0.033	<0.030	0.032	<0.030	<0.030	<0.030	<0.030	<0.030	--
benzo(g,h,i)perylene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
benzo(k)fluoranthene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
chrysene	µg/L	<0.020	0.047	<0.020	0.036	<0.020	<0.020	<0.020	<0.020	<0.020	--
dibenz(a,h)anthracene	µg/L	<0.0030	0.0085	<0.0030	0.0066	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	--
fluoranthene	µg/L	<0.020	0.073	0.051	0.05	<0.020	<0.020	<0.020	<0.020	<0.020	--
fluorene	µg/L	<0.050	0.054	0.066	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
indeno(1,2,3-cd)pyrene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	--
methylnaphthalene, 1-	µg/L	<0.050	0.077	<0.050	0.087	<0.050	<0.050	<0.050	<0.050	<0.050	--
methylnaphthalene, 2-	µg/L	<0.10	0.12	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	--
naphthalene	µg/L	<0.10	0.18	0.11	0.67	0.11	<0.10	0.12	0.3	0.3	--
phenanthrene	µg/L	<0.050	0.11	0.075	0.055	<0.050	<0.050	<0.050	<0.050	<0.050	--
pyrene	µg/L	<0.020	0.088	0.045	0.061	<0.020	<0.020	0.021	<0.020	<0.020	--
quinoline	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	--
Total HMW-PAHs	µg/L	<0.050	0.34	0.12	0.25	<0.050	<0.050	<0.050	<0.050	<0.050	--
Total LMW-PAHs	µg/L	<0.10	0.62	0.39	0.92	0.11	<0.10	0.12	0.3	0.3	--
Total PAHs	µg/L	<0.10	0.96	0.51	1.2	0.11	<0.10	0.15	0.3	0.3	--

TABLE 8: GROUNDWATER ANALYTICAL RESULTS
VOCS

10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

FIGQ AL Guidelines (Tier 2 ^f)	FIGQ CL Guidelines (Tier 2 ^f)	FIGQ IL Guidelines (Tier 2 ^f)	HC DWQ Guidelines	CSR AW _{FW} Standards	CSR DW Standards

8500	8500	8500	100	n/s	100
380e / 770f	380e / 770f	380e / 770f	100	n/s	100
5.6e / 56f	5.6e / 56f	5.6e / 56f	n/g	n/s	5.5
0.56e / 11f	0.56e / 11f	0.56e / 11f	2	130	2
n/g	n/g	n/g	n/g	n/s	n/s
1.8	1.8	1.8	100	20	100
n/g	n/g	n/g	n/g	n/s	n/s
1100e / 26000f	1100e / 26000f	1100e / 26000f	100	n/s	100
0.25e / 0.83f	0.25e / 0.83f	0.25e / 0.83f	n/g	n/s	0.5
n/g	n/g	n/g	n/g	n/s	800
320e / 3100f	320e / 3100f	320e / 3100f	n/g	n/s	30
10e / 100f	10e / 100f	10e / 100f	5	1000	5
39e / 680f	39e / 680f	39e / 680f	14	n/s	14
1.6e / 17f	1.6e / 17f	1.6e / 17f	n/g	n/s	8
1.6e / 17f	1.6e / 17f	1.6e / 17f	n/g	n/s	80
98	98	98	50	980	50
16e / 140f	16e / 140f	16e / 140f	n/g	n/s	4.5
5.2e / 45f	5.2e / 45f	5.2e / 45f	n/g	n/s	1.5
5.2e / 45f	5.2e / 45f	5.2e / 45f	n/g	n/s	1.5
n/g	n/g	n/g	n/g	15	2
3.3e / 28f	3.3e / 28f	3.3e / 28f	n/g	n/s	6
3.2e / 15f	3.2e / 15f	3.2e / 15f	n/g	n/s	0.8
12e / 110f	12e / 110f	12e / 110f	10	1100	30
n/g	n/g	n/g	n/g	n/s	100000
640e / 1100f	640e / 1100f	640e / 1100f	n/g	n/s	8000
4.7e / 30f	4.7e / 30f	4.7e / 30f	n/g	n/s	3
20e / 270f	20e / 270f	20e / 270f	5	200	5
n/g	n/g	n/g	n/g	n/s	1000
1.1e / 18f	1.1e / 18f	1.1e / 18f	2	n/s	2

n/g	n/g	n/g	n/g	n/s	30
0.7	0.7	0.7	200	7	200
42	42	42	n/g	1500	n/s
26	26	26	5	260	5
1.3	1.3	1.3	80	13	80
8	8	8	n/g	80	3
54	54	54	n/g	240	5.5

13000	13000	13000	n/g	n/s	3500
150000	150000	150000	n/g	n/s	2500
n/g	n/g	n/g	n/g	n/s	n/s
58000	58001	58002	n/g	n/s	n/s
340e / 6100f	340e / 6100f	340e / 6100f	n/g	34000	95
n/g	n/g	n/g	n/g	n/s	n/s

n/g	n/g	n/g	n/g	n/s	400
n/g	n/g	n/g	n/g	n/s	n/s
n/g	n/g	n/g	n/g	n/s	40

Groundwater Exceedances

125	Exceeds FIGQG AL/CL/IL guidelines
125	Exceeds BC WQ guidelines
125	Exceeds CSR AW _{FW} standards
125	Exceeds CSR DW standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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SAMPLE ID	Units	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-13	MW20-15	MW20-A	RPD
DATE SAMPLED		29-Oct-20	28-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	28-Oct-20	28-Oct-20	
LAB CERTIFICATE		C080058	C080058	C080058	C080058	C080058	C080058	C080058	C080058	C080058	for
LAB SAMPLE ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5541	YT5542	YT5543	MW20-15
TOP OF SCREEN (mbg)		2.8	1.8	4.2	2.4	0.6	2.8	0.8	5.8	Duplicate of	and
BOTTOM OF SCREEN (mbg)		4.6	3.6	6.1	4.2	2.1	4.6	2.4	7.6	MW20-15	MW20-A

Halogenated Aliphatics											
bromodichloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
bromoform	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
bromomethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
carbon tetrachloride	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
chloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
chloroform	µg/L	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
chloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
dibromochloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
dibromoethane, 1,2-	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	--
dichlorodifluoromethane	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
dichloroethane, 1,1-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichloroethane, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichloroethylene, 1,1-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichloroethylene, 1,2- (cis)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
dichloroethylene, 1,2- (trans)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
dichloromethane	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
dichloropropane, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichloropropene, 1,3- (cis)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
dichloropropene, 1,3- (trans)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
hexachlorobutadiene, 1,3-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
tetrachloroethane, 1,1,1,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
tetrachloroethane, 1,1,2,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
tetrachloroethylene	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
trichloroethane, 1,1,1-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
trichloroethane, 1,1,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
trichloroethylene	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
trichlorofluoromethane	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	--
vinyl chloride	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--

Halogenated Aromatics											
bromobenzene	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
dichlorobenzene, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichlorobenzene, 1,3-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
dichlorobenzene, 1,4-	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
monochlorobenzene	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
trichlorobenzene, 1,2,3-	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
trichlorobenzene, 1,2,4-	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--

Non-Halogenated Aliphatics											
acetone	µg/L	<15	<15	<15	34	80	<15	15	25	27	--
butanone, 2-	µg/L	<50	<50	<50	<50	<50	<50	<50	<50	<50	--
decane, n-	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	--
methyl-2-pentanone, 4-	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	--
methyl tert-butyl ether	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	--
methylcyclohexane	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--

Non-Halogenated Aromatics											
isopropylbenzene	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
trimethylbenzene, 1,2,4-	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
trimethylbenzene, 1,3,5-	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--

TABLE 9: GROUNDWATER ANALYTICAL RESULTS
GLYCOLS

10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

FIGQ AL Guidelines (Tier 2 [†])	FIGQ CL Guidelines (Tier 2 [†])	FIGQ IL Guidelines (Tier 2 [†])	HC DWQ Guidelines	CSR AW _{FW} Standards	CSR DW Standards

n/g	n/g	n/g	n/g	n/s	n/s
190000	190000	190000	n/g	1920000	8000
500000	500000	500000	n/g	5000000	80000
n/g	n/g	n/g	n/g	n/s	8000

Groundwater Exceedances	
125	Exceeds FIGQG AL/CL/IL guidelines
125	Exceeds BC WQ guidelines
125	Exceeds CSR AW _{FW} standards
125	Exceeds CSR DW standards

QA/QC Exceedances	
80%	RPD exceeds data quality objectives

SAMPLE ID	Units	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-15	MW20-A	RPD
DATE SAMPLED		29-Oct-20	28-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	28-Oct-20	28-Oct-20	for
LAB CERTIFICATE		C080058	C080058	C080058	C080058	C080058	C080058	C080058	C080058	MW20-15
LAB SAMPLE ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5542	YT5543	and
TOP OF SCREEN (mbg)		2.8	1.8	4.2	2.4	0.6	2.8	5.8	Duplicate of	MW20-A
BOTTOM OF SCREEN (mbg)		4.6	3.6	6.1	4.2	2.1	4.6	7.6	MW20-15	

Glycols										
diethylene glycol	µg/L	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<5000	--
ethylene glycol	µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	--
propylene glycol	µg/L	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<5000	--
triethylene glycol	µg/L	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<5000	--

GLOSSARY: VAPOUR ANALYTICAL RESULTS

10582 and 10620/10626, Scott Rd., Surrey, BC

Brunswick Property Holdings Ltd.

Project #: 15934

December 2020

List of Acronyms

AL	Agricultural Land Use
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CL	Commercial Land Use
CSR	British Columbia Contaminated Sites Regulation
IL	Industrial Land Use
MSVC	Measured Sub-surface Vapour Concentration
MTBE	Methyl Tertiary Butyl Ether
n/s	No Standard
PIVC	Predicted Indoor Vapour Concentration
PK	Parkade Use
PL	Urban Park Land Use
POVC	Predicted Outdoor Vapour Concentration
RDL	Reported Detection Limit
RL	Residential Land Use
RPD	Relative Percent Difference
VHV ₆₋₁₃	Volatile Petroleum Hydrocarbons (carbon range 6 to 13)
VOC	Volatile Organic Compounds
VPHv	Volatile Petroleum Hydrocarbon (corrected for BTEX)

Formulas

PIVC	$PIVC = MSVC (\mu g/m^3) * \text{Attenuation Factor for PIVC (unitless)}$
POVC	$POVC = MSVC (\mu g/m^3) * \text{Attenuation Factor for POVC (unitless)}$
RPD	$RPD = \frac{[Max\ Concentration - Min\ Concentration]}{([Max\ Concentration + Min\ Concentration]/2)} * 100\}$

List of Symbols

<	Concentration is less than the laboratory reported detection limit
*	Laboratory reported detection limit is greater than applicable standard/guideline
--	Sample was not analyzed for the specified constituent

List of Units

mbg	Metres below grade
$\mu g/m^3$	Micrograms per gram
L/min	Litres per minute
min	Minutes

Vapour Exceedances

125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances

80%	RPD exceeds data quality objectives
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TABLE 10: VAPOUR ANALYTICAL RESULTS
HYDROCARBONS AND NON-HALOGENATED VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CSR AL Standards	CSR CL Standards	CSR IL Standards

1000	3000	11500
n/s	n/s	n/s

1.5	4	10
1000	3000	9000
1000	3000	9000
5000	15000	45000
100	300	900

3	9	25
---	---	----

2	2	3
5000	15000	45000
2500	8000	25000
700	2000	6500
n/s	n/s	n/s
3000	9000	25000
3000	9000	25000
1500	5000	35000

2000	5500	35000
n/s	n/s	n/s
n/s	n/s	n/s
n/s	n/s	n/s
70	200	650
400	1000	3500
n/s	n/s	n/s
n/s	n/s	n/s
7	20	65
3.5	10	65

Vapour Exceedances
125
125
125

Exceeds CSR AL standards
Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances
80%

RPD exceeds data quality objectives

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) FLOW RATE (L/min) FLOW DURATION (min)	Units	SV20-5 27-Oct-20 C080056 YT5519 1.0 0.2 20				SV20-7 27-Oct-20 C080056 YT5520 0.5 0.2 20				SV20-A 27-Oct-20 C080056 YT5526 Duplicate of SV20-7				RPD or MS for SV20-7 and SV20-A	SV20-9 27-Oct-20 C080056 YT5521 1.0 0.2 20			
VAPOUR CONCENTRATION ATTENUATION FACTOR		MSVC	PIVC (AL)	PIVC (CL/IL)	POVC	MSVC	PIVC (AL)	PIVC (CL/IL)	POVC	MSVC	PIVC (AL)	PIVC (CL/IL)	POVC	MSVC	MSVC	PIVC (AL)	PIVC (CL/IL)	POVC
		--	2.8E-03	3.7E-04	1.5E-06	--	2.0E-02	2.0E-02	1.0E-04	--	2.0E-02	2.0E-02	1.0E-04	--	--	2.8E-03	3.7E-04	1.5E-06

Petroleum Hydrocarbons																		
VPHv	µg/m³	280	0.784	0.1036	0.00042	<130	<2.6	<2.6	<0.013	<130	<2.6	<2.6	<0.013	--	7800	21.84	2.886	0.0117
VHV ₆₋₁₃	µg/m³	300	0.84	0.111	0.00045	<130	<2.6	<2.6	<0.013	<130	<2.6	<2.6	<0.013	--	8900	24.92	3.293	0.01335

Monocyclic Aromatic Hydrocarbons																		
benzene	µg/m³	22	0.0616	0.00814	0.000033	<0.38	<0.0076	<0.0076	<0.000038	<0.38	<0.0076	<0.0076	<0.000038	--	64	0.1792	0.02368	0.000096
ethylbenzene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	70	0.196	0.0259	0.000105
styrene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	<50	<0.14	<0.0185	<0.000075
toluene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	280	0.784	0.1036	0.00042
xylenes	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	320	0.896	0.1184	0.00048

Polycyclic Aromatic Hydrocarbons																		
naphthalene	µg/m³	2.1	0.00588	0.000777	0.00000315	<0.75	<0.015	<0.015	<0.000075	<0.75	<0.015	<0.015	<0.000075	--	3.3	0.00924	0.001221	0.0000495

Non-Halogenated Aliphatics																		
butadiene, 1,3-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	4.2	0.01176	0.001554	0.0000063
butanone, 2-	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	<130	<2.6	<2.6	<0.013	--	<130	<0.364	<0.0481	<0.000195
decane, n-	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	<25	<0.5	<0.5	<0.0025	--	<25	<0.07	<0.00925	<0.0000375
hexane, n-	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	<25	<0.5	<0.5	<0.0025	--	410	1.148	0.1517	0.000615
hexanone, 2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	11	0.0308	0.00407	0.0000165
methyl tert-butyl ether	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	<50	<0.14	<0.0185	<0.000075
methyl-2-pentanone, 4-	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	<50	<0.14	<0.0185	<0.000075
methylcyclohexane	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<1	<1	<0.005	--	79	0.2212	0.02923	0.0001185

Non-Halogenated Aromatics																		
acetone	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.1	<0.1	<0.0005	--	<5	<0.014	<0.00185	<0.0000075
butylbenzene, n-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	4	0.0112	0.00148	0.000006
butylbenzene, sec-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	3	0.0084	0.00111	0.0000045
butylbenzene, tert-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
ethyl acetate	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	9.6	0.02688	0.003552	0.0000144
isopropylbenzene	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	8.8	0.02464	0.003256	0.0000132
isopropyltoluene, p-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	15	0.042	0.00555	0.0000225
propylbenzene, n-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	27	0.0756	0.00999	0.0000405
trimethylbenzene, 1,2,3-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	24	0.0672	0.00888	0.000036
trimethylbenzene, 1,2,4-	µg/m³	1.2	0.00336	0.000444	0.0000018	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	93	0.2604	0.03441	0.0001395
trimethylbenzene, 1,3,5-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	29	0.0812	0.01073	0.0000435

TABLE 10: VAPOUR ANALYTICAL RESULTS
HYDROCARBONS AND NON-HALOGENATED VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CSR AL Standards	CSR CL Standards	CSR IL Standards	SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) FLOW RATE (L/min) FLOW DURATION (min)	Units	SV20-10 27-Oct-20 C080056 YT5522 1.0 0.2 20	SV20-12 27-Oct-20 C080056 YT5523 1.0 0.2 20	SV20-13 27-Oct-20 C080056 YT5524 0.5 0.2 20	SV20-15 27-Oct-20 C080056 YT5525 1.0 0.2 20												
			VAPOUR CONCENTRATION ATTENUATION FACTOR		MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06	MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06	MSVC --	PIVC (AL) 2.0E-02	PIVC (CL/IL) 2.0E-02	POVC 1.0E-04	MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06
Petroleum Hydrocarbons																				
			VPHv	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	13000	36.4	4.81	0.0195
			VHV ₆₋₁₃	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	14000	39.2	5.18	0.021
Monocyclic Aromatic Hydrocarbons																				
			benzene	µg/m³	0.55	0.00154	0.0002035	0.000000825	0.48	0.001344	0.0001776	0.00000072	0.93	0.0186	0.0186	0.000093	240	0.672	0.0888	0.00036
			ethylbenzene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	110	0.308	0.0407	0.000165
			styrene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<0.14	<0.0185	<0.000075
			toluene	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<0.14	<0.0185	<0.000075
			xylenes	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	670	1.876	0.2479	0.001005
Polycyclic Aromatic Hydrocarbons																				
			naphthalene	µg/m³	<0.75	<0.0021	<0.0002775	<0.000001125	<0.75	<0.0021	<0.0002775	<0.000001125	<0.75	<0.015	<0.015	<0.000075	5.3	0.01484	0.001961	0.00000795
Non-Halogenated Aliphatics																				
			butadiene, 1,3-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	5.6	0.01568	0.002072	0.0000084
			butanone, 2-	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	<130	<0.364	<0.0481	<0.000195
			decane, n-	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	75	0.21	0.02775	0.0001125
			hexane, n-	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	510	1.428	0.1887	0.000765
			hexanone, 2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	4.7	0.01316	0.001739	0.00000705
			methyl tert-butyl ether	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<0.14	<0.0185	<0.000075
			methyl-2-pentanone, 4-	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<0.14	<0.0185	<0.000075
			methylcyclohexane	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	380	1.064	0.1406	0.00057
Non-Halogenated Aromatics																				
			acetone	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.014	<0.00185	<0.0000075
			butylbenzene, n-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			butylbenzene, sec-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	5.6	0.01568	0.002072	0.0000084
			butylbenzene, tert-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			ethyl acetate	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			isopropylbenzene	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	18	0.0504	0.00666	0.000027
			isopropyltoluene, p-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	70	0.196	0.0259	0.000105
			propylbenzene, n-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	54	0.1512	0.01998	0.000081
			trimethylbenzene, 1,2,3-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	40	0.112	0.0148	0.00006
			trimethylbenzene, 1,2,4-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	130	0.364	0.0481	0.000195
			trimethylbenzene, 1,3,5-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	66	0.1848	0.02442	0.000099

Vapour Exceedances		
125	Exceeds CSR AL standards	
125	Exceeds CSR CL standards	
125	Exceeds CSR IL standards	
QA/QC Exceedances		
80%	RPD exceeds data quality objectives	

TABLE 11: VAPOUR ANALYTICAL RESULTS
HALOGENATED VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CSR AL Standards	CSR CL Standards	CSR IL Standards	SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) FLOW RATE (L/min) FLOW DURATION (min)	Units	SV20-5 27-Oct-20 C080056 YT5519 1.0 0.2 20				SV20-7 27-Oct-20 C080056 YT5520 0.5 0.2 20				SV20-A 27-Oct-20 C080056 YT5526 Duplicate of SV20-7				RPD or MS for SV20-7 and SV20-A	SV20-9 27-Oct-20 C080056 YT5521 1.0 0.2 20			
			VAPOUR CONCENTRATION ATTENUATION FACTOR		MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06	MSVC --	PIVC (AL) 2.0E-02	PIVC (CL/IL) 2.0E-02	POVC 1.0E-04	MSVC --	PIVC (AL) 2.0E-02	PIVC (CL/IL) 2.0E-02	POVC 1.0E-04	MSVC --	MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06
Halogenated Aliphatics																					
			bromodichloromethane	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			bromoform	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			bromomethane	µg/m³	<1.3	<0.00364	<0.000481	<0.00000195	<1.3	<0.026	<0.026	<0.00013	<1.3	<0.026	<0.026	<0.00013	--	<1.3	<0.00364	<0.000481	<0.00000195
			carbon tetrachloride	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.005	<0.005	<0.000025	--	<0.25	<0.0007	<0.0000925	<0.000000375
			chloroethane	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	<130	<2.6	<2.6	<0.013	--	<130	<0.364	<0.0481	<0.000195
			chloroform	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	2.6	0.00728	0.000962	0.0000039
			chlriomethane	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.1	<0.1	<0.0005	--	<5	<0.014	<0.00185	<0.0000075
			dibromo-3-chloropropane, 1,2-	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.005	<0.005	<0.000025	--	<0.25	<0.0007	<0.0000925	<0.000000375
			dibromochloromethane	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			dibromoethane, 1,2-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	<0.13	<0.0026	<0.0026	<0.000013	--	0.15	0.00042	0.0000555	0.000000225
			dibromomethane	µg/m³	<1	<0.0028	<0.00037	<0.0000015	<1	<0.02	<0.02	<0.0001	<1	<0.02	<0.02	<0.0001	--	<1	<0.0028	<0.00037	<0.0000015
			dichlorodifluoromethane	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.1	<0.1	<0.0005	--	<5	<0.014	<0.00185	<0.0000075
			dichloroethane, 1,1-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichloroethane, 1,2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			dichloroethylene, 1,1-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichloroethylene, 1,2- (cis)	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	5.6	0.01568	0.002072	0.0000084
			dichloroethylene, 1,2- (trans)	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichloromethane	µg/m³	<13	<0.0364	<0.00481	<0.0000195	<13	<0.26	<0.26	<0.0013	<13	<0.26	<0.26	<0.0013	--	<13	<0.0364	<0.00481	<0.0000195
			dichloropropane, 1,2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	1.3	0.00364	0.000481	0.00000195
			dichloropropane, 1,3-	µg/m³	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.0076	<0.0076	<0.000038	<0.38	<0.0076	<0.0076	<0.000038	--	<0.38	<0.001064	<0.0001406	<0.00000057
			dichloropropene, 1,3- (cis)	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			dichloropropene, 1,3- (trans)	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			hexachlorobutadiene, 1,3-	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.005	<0.005	<0.000025	--	<0.25	<0.0007	<0.0000925	<0.000000375
			tetrachloroethane, 1,1,1,2-	µg/m³	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.0076	<0.0076	<0.000038	<0.38	<0.0076	<0.0076	<0.000038	--	<0.38	<0.001064	<0.0001406	<0.00000057
			tetrachloroethane, 1,1,2,2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			tetrachloroethylene	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	4.9	0.01372	0.001813	0.00000735
			trichloroethane, 1,1,1-	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.0005	<50	<1	<1	<0.0005	--	<50	<0.14	<0.0185	<0.000075
			trichloroethane, 1,1,2-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	<0.13	<0.0026	<0.0026	<0.000013	--	0.18	0.000504	0.0000666	0.00000027
			trichloroethylene	µg/m³	0.98	0.002744	0.0003626	0.00000147	1	0.02	0.02	0.0001	0.9	0.018	0.018	0.00009	0.1<0.25	1.8	0.00504	0.000666	0.0000027
			trichlorofluoromethane	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	<25	<0.5	<0.5	<0.0025	--	<25	<0.07	<0.00925	<0.0000375
			trichloropropane, 1,2,3-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	<0.13	<0.0026	<0.0026	<0.000013	--	<0.13	<0.000364	<0.0000481	<0.000000195
			vinyl chloride	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.005	<0.005	<0.000025	--	2.6	0.00728	0.000962	0.0000039
Halogenated Aromatics																					
			bromobenzene	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			chlorotoluene, 2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.01	<0.01	<0.00005	--	<0.5	<0.0014	<0.000185	<0.00000075
			chlorotoluene, 4-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,3-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.05	<0.05	<0.00025	--	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,4-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.								

Vapour Exceedances	
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards
QA/QC Exceedances	
80%	RPD exceeds data quality objectives

TABLE 11: VAPOUR ANALYTICAL RESULTS
HALOGENATED VOCS
10582 and 10620/10626, Scott Rd., Surrey, BC
Brunswick Property Holdings Ltd.
Project #: 15934
December 2020

CSR AL Standards	CSR CL Standards	CSR IL Standards	SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) FLOW RATE (L/min) FLOW DURATION (min)	Units	SV20-10 27-Oct-20 C080056 YT5522 1.0 0.2 20				SV20-12 27-Oct-20 C080056 YT5523 1.0 0.2 20				SV20-13 27-Oct-20 C080056 YT5524 0.5 0.2 20				SV20-15 27-Oct-20 C080056 YT5525 1.0 0.2 20			
			VAPOUR CONCENTRATION ATTENUATION FACTOR		MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06	MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06	MSVC --	PIVC (AL) 2.0E-02	PIVC (CL/IL) 2.0E-02	POVC 1.0E-04	MSVC --	PIVC (AL) 2.8E-03	PIVC (CL/IL) 3.7E-04	POVC 1.5E-06
Halogenated Aliphatics																				
			bromodichloromethane	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			bromoform	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			bromomethane	µg/m³	<1.3	<0.00364	<0.000481	<0.00000195	<1.3	<0.00364	<0.000481	<0.00000195	<1.3	<0.026	<0.026	<0.00013	<1.3	<0.00364	<0.000481	<0.00000195
			carbon tetrachloride	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	0.33	0.000924	0.0001221	0.000000495
			chloroethane	µg/m³	<130	<0.364	<0.0481	<0.000195	<130	<0.364	<0.0481	<0.000195	<130	<2.6	<2.6	<0.013	<130	<0.364	<0.0481	<0.000195
			chloroform	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	0.68	0.001904	0.0002516	0.00000102
			chlormethane	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.014	<0.00185	<0.0000075
			dibromo-3-chloropropane, 1,2-	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.0007	<0.0000925	<0.000000375
			dibromochloromethane	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			dibromoethane, 1,2-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	0.23	0.000644	0.0000851	0.000000345
			dibromomethane	µg/m³	<1	<0.0028	<0.00037	<0.0000015	<1	<0.0028	<0.00037	<0.0000015	<1	<0.02	<0.02	<0.0001	<1	<0.0028	<0.00037	<0.0000015
			dichlorodifluoromethane	µg/m³	<5	<0.014	<0.00185	<0.0000075	<5	<0.014	<0.00185	<0.0000075	<5	<0.1	<0.1	<0.0005	<5	<0.014	<0.00185	<0.0000075
			dichloroethane, 1,1-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichloroethane, 1,2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			dichloroethylene, 1,1-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichloroethylene, 1,2- (cis)	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	3	0.0084	0.00111	0.00000045
			dichloroethylene, 1,2- (trans)	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichloromethane	µg/m³	<13	<0.0364	<0.00481	<0.0000195	<13	<0.0364	<0.00481	<0.0000195	<13	<0.26	<0.26	<0.0013	<13	<0.0364	<0.00481	<0.0000195
			dichloropropane, 1,2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	6.9	0.01932	0.002553	0.00001035
			dichloropropane, 1,3-	µg/m³	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.0076	<0.0076	<0.000038	<0.38	<0.001064	<0.0001406	<0.00000057
			dichloropropene, 1,3- (cis)	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			dichloropropene, 1,3- (trans)	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	1.3	0.00364	0.000481	0.000000195
			hexachlorobutadiene, 1,3-	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	<0.25	<0.0007	<0.0000925	<0.000000375
			tetrachloroethane, 1,1,1,2-	µg/m³	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.001064	<0.0001406	<0.00000057	<0.38	<0.0076	<0.0076	<0.000038	<0.38	<0.001064	<0.0001406	<0.00000057
			tetrachloroethane, 1,1,2,2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			tetrachloroethylene	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	4.4	0.01232	0.001628	0.00000066
			trichloroethane, 1,1,1-	µg/m³	<50	<0.14	<0.0185	<0.000075	<50	<0.14	<0.0185	<0.000075	<50	<1	<1	<0.005	<50	<0.14	<0.0185	<0.000075
			trichloroethane, 1,1,2-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	0.55	0.00154	0.0002035	0.000000825
			trichloroethylene	µg/m³	1.6	0.00448	0.000592	0.0000024	0.93	0.002604	0.0003441	0.000001395	1.5	0.03	0.03	0.00015	3.2	0.00896	0.001184	0.00000048
			trichlorofluoromethane	µg/m³	<25	<0.07	<0.00925	<0.0000375	<25	<0.07	<0.00925	<0.0000375	<25	<0.5	<0.5	<0.0025	<25	<0.07	<0.00925	<0.0000375
			trichloropropane, 1,2,3-	µg/m³	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.000364	<0.0000481	<0.000000195	<0.13	<0.0026	<0.0026	<0.000013	2.4	0.00672	0.000888	0.00000036
			vinyl chloride	µg/m³	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.0007	<0.0000925	<0.000000375	<0.25	<0.005	<0.005	<0.000025	8.7	0.02436	0.003219	0.00001305
Halogenated Aromatics																				
			bromobenzene	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			chlorotoluene, 2-	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	0.8	0.00224	0.000296	0.00000012
			chlorotoluene, 4-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,3-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			dichlorobenzene, 1,4-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			monochlorobenzene	µg/m³	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.0014	<0.000185	<0.00000075	<0.5	<0.01	<0.01	<0.00005	<0.5	<0.0014	<0.000185	<0.00000075
			monochlorophenol, 2-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000375
			trichlorobenzene, 1,2,3-	µg/m³	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.007	<0.000925	<0.00000375	<2.5	<0.05	<0.05	<0.00025	<2.5	<0.007	<0.000925	<0.00000

Vapour Exceedances	
125	Exceeds CSR AL standards
125	Exceeds CSR CL standards
125	Exceeds CSR IL standards
QA/QC Exceedances	
80%	RPD exceeds data quality objectives

GROUNDWATER SAMPLING SHEETS

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Groundwater Developing, Purging and Sampling Record

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GENERAL INFORMATION

Monitoring Well ID: MW20-5
 Sampler: RFM

Project #: 15434
 Client: Brunswick Prep Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Lock ☐ Well Casing 2-inch (51 mm) ☒
 Stick-up ☐ m above grade Diameter or other: _____
 Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 29/20 Weather: cloud 8C
 Depth to Bottom of Well from TOC (X) 4.515 metres
 Depth to Water from Top of Casing (Y) 1.148 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 3 metres
 Volume of Water in Well = (X - Y) • 2 36 litres
 Minimum Volume = 6 • well volume 36 litres
Total Volume Developed 36 litres
Development Method
 Waterra Pump ☐
 Surge Block (time: 5 min) ☒
 Bailer ☐
 Other (specify) _____
Turbidity Ratings *
 Before Dev. 10
 After Dev. 10

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29 20 Weather: cloud 12C
 Minimum Volume = 3 • well volume 18 litres
Purge/Sample Method
 Waterra Pump ☐
 Peristaltic (tubing set to: 24m) ☒
 Bailer ☐
 Other (specify) _____
Turbidity Ratings *
 Purging 4
 Sampling 3

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1648</u>	<u>1.138</u>	
<u>6</u>	<u>6.76</u>	<u>1806</u>	<u>14.8</u>	<u>85</u>	<u>-</u>	<u>1701</u>	<u>1.206</u>	<u>~100 mL/min</u>
<u>12</u>	<u>6.76</u>	<u>1678</u>	<u>14.8</u>	<u>75</u>	<u>-</u>	<u>1721</u>	<u>1.230</u>	
<u>18</u>	<u>6.76</u>	<u>1672</u>	<u>14.8</u>	<u>73</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
 Sheen Yes ☐ No ☒ Description: _____

Colour (initial) grey-brown (stable) grey-brown
 Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPB ☒ BTEX/VPB/MTBE ☐ EPH ☐
 LEPA/HEPA ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other Glycols ☒

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

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GENERAL INFORMATION

Monitoring Well ID: MW20-7
 Sampler: RFM

Project #: 15434
 Client: Brownish Prop Holdings

WELL INFORMATION

Well Cover Type: ☒ Flush ☐ Stick-up ☐ m above grade Lock ☐ Well Casing: 2-inch (51 mm) ☒ Diameter or other: _____
 Well Head Vapour Reading: 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 27/20 Weather: cloud 8°C
 Depth to Bottom of Well from TOC (X) 3.0m metres
 Depth to Water from Top of Casing (Y) surface metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 3 metres
 Volume of Water in Well = (X - Y) • 2 6 litres
 Minimum Volume = 6 • well volume 36 litres
Total Volume Developed 36 litres

Development Method

Water Pump ☐
 Surge Block (time: 5 min) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Before Dev. 10
 After Dev. 6

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 28/20 Weather: cloud 7°C
 Minimum Volume = 3 • well volume 18 litres

Purge/Sample Method

Water Pump ☐
 Peristaltic (tubing set to: ~ 2.5) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Purging 1
 Sampling 1

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1500</u>	<u>0</u>	
<u>6</u>	<u>7.02</u>	<u>1098</u>	<u>14.0</u>	<u>38</u>	<u>-</u>	<u>1515</u>	<u>0</u>	
<u>12</u>	<u>7.15</u>	<u>1400</u>	<u>14.0</u>	<u>40</u>	<u>-</u>		<u>0</u>	<u>~ 500 mL/min</u>
<u>18</u>	<u>7.16</u>	<u>1910</u>	<u>14.0</u>	<u>40</u>	<u>-</u>		<u>0</u>	

Odour: Yes ☐ No ☒ Description: _____
 Sheen: Yes ☐ No ☒ Description: _____

Colour (initial) _____ (stable) _____
 Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 28 2020 Laboratory: BV

VOC/VPH ☒ BTEX/VPH/MTBE ☐ EPH ☐
 LEPH/HEPH ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other lyals ☒

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

artesian well conditions

GENERAL INFORMATION

Monitoring Well ID: MW20-9
Sampler: RFM

Project #: 15434
Client: Brownish Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Lock ☐ Well Casing 2-inch (51 mm) ☒
Stick-up ☐ m above grade Diameter or other: _____
Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 28/20 Weather: cloudy
Depth to Bottom of Well from TOC (X) 2.90 metres
Depth to Water from Top of Casing (Y) 1.07 metres
Depth to Product (if applicable) _____ metres
Length of Water Column (X-Y) 2 metres
Volume of Water in Well = (X - Y) • 2 4 litres
Minimum Volume = 6 • well volume 24 litres
Total Volume Developed 24 litres

Development Method

Water Pump ☐
Surge Block (time: 5 min) ☒
Bailer ☐
Other (specify) _____

Turbidity Ratings *

Before Dev. 10
After Dev. 8

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29/20 Weather: cloudy 12°C
Minimum Volume = 3 • well volume 12 litres

Purge/Sample Method

Water Pump ☐
Peristaltic (tubing set to: 2.4) ☒
Bailer ☐
Other (specify) _____

Turbidity Ratings *

Purging 1
Sampling 1

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0810</u>	<u>1.081</u>	
<u>4</u>	<u>6.93</u>	<u>2.27</u>	<u>14.3</u>	<u>27</u>	<u>-</u>	<u>0825</u>	<u>1.06</u>	
<u>8</u>	<u>6.93</u>	<u>2.27</u>	<u>14.2</u>	<u>22</u>	<u>-</u>		<u>1.119</u>	<u>maximum</u>
<u>12</u>	<u>6.94</u>	<u>2.27</u>	<u>14.2</u>	<u>21</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
Sheen Yes ☐ No ☒ Description: _____

Colour (initial) grey (stable) grey
Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPB ☒ BTEX/VPB/MTBE ☐ EPH ☐
LEPH/HEPB ☒ PAHs ☒ Glycols ☐
Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
Pesticides ☐ pH ☐ Other glycols ☒

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

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GENERAL INFORMATION

Monitoring Well ID: MW20-10
 Sampler: RFM

Project #: 15434
 Client: Brunswick Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Lock ☐ Well Casing 2-inch (51 mm) ☒
 Stick-up ☐ m above grade Diameter or other: _____
 Well Head Vapour Reading _____ ppm or %LEL ☐ RKL Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 29/20 Weather: cloud 10c
 Depth to Bottom of Well from TOC (X) 4.189 metres
 Depth to Water from Top of Casing (Y) 1.623 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 2.5 metres
 Volume of Water in Well = (X - Y) • 2 5 litres
 Minimum Volume = 6 • well volume 30 litres
Total Volume Developed 30 litres

Development Method

Water Pump ☐
 Surge Block (time: 5 min) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Before Dev. 10
 After Dev. 10

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29 20 Weather: cloud 13c
 Minimum Volume = 3 • well volume 15 litres

Purge/Sample Method

Water Pump ☐
 Peristaltic (tubing set to: ~3.6) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Purging 5
 Sampling 3

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
0	-	-	-	-	-	1022	0.315	-
5	6.52	1660	13.1	109	-	1046	0.320	-
10	6.57	1665	13.1	106	-	1059	0.320	maximum
15	6.53	1665	13.1	105	-			

Odour Yes ☐ No ☒ Description: _____
 Sheen Yes ☐ No ☒ Description: _____

Colour (initial) Drum (stable) Drum
 Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPH ☐ BTEX/VPH/MTBE ☐ EPH ☐
 LEPH/HEPH ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other ☐

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

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GENERAL INFORMATION

Monitoring Well ID: MW20-11
 Sampler: RFM

Project #: 15434
 Client: Brunswick Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Stick-up ☐ m above grade Lock ☐ Well Casing 2-inch (51 mm) ☒ Diameter or other: _____

Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 28/20 Weather: cloudy 8°C
 Depth to Bottom of Well from TOC (X) 2.128 metres
 Depth to Water from Top of Casing (Y) 0.699 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 1.5 metres
 Volume of Water in Well = (X - Y) • 2 3 litres
 Minimum Volume = 6 • well volume 18 litres
Total Volume Developed 20 litres

Development Method

Water Pump ☐
 Surge Block (time: 5 min) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Before Dev. 10
 After Dev. 10

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29 20 Weather: cloudy 12°C
 Minimum Volume = 3 • well volume 9 litres

Purge/Sample Method

Water Pump ☐
 Peristaltic (tubing set to: ~1.5) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Purging 8
 Sampling 3

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1429</u>	<u>0.682</u>	
<u>3</u>	<u>7.03</u>	<u>1458</u>	<u>15.2</u>	<u>21</u>	<u>-</u>	<u>1441</u>	<u>0.698</u>	
<u>6</u>	<u>7.02</u>	<u>1462</u>	<u>15.2</u>	<u>20</u>	<u>-</u>		<u>0.711</u>	<u>maximum</u>
<u>9</u>	<u>7.03</u>	<u>1464</u>	<u>15.2</u>	<u>18</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
 Sheen Yes ☐ No ☒ Description: _____

Colour (initial) red-brown (stable) red-brown
 Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPB ☒ BTEX/VPB/MTBE ☐ EPH ☐
 LEPH/HEPH ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other glycols ☒

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

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GENERAL INFORMATION

Monitoring Well ID: MW20-12
 Sampler: RFM

Project #: 15434
 Client: Brownish Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Stick-up ☐ m above grade Lock ☐ Well Casing 2-inch (51 mm) ☒ Diameter or other: _____
 Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 28/20 Weather: cloud 8°C
 Depth to Bottom of Well from TOC (X) 4.464 metres
 Depth to Water from Top of Casing (Y) 0.735 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 3.5 metres
 Volume of Water in Well = (X - Y) • 2 7 litres
 Minimum Volume = 6 • well volume 42 litres
Total Volume Developed 44 litres

Development Method

Water Pump ☐
 Surge Block (time: 10 min) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Before Dev. 10
 After Dev. 10

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29 20 Weather: cloud 13°C
 Minimum Volume = 3 • well volume 21 litres

Purge/Sample Method

Water Pump ☐
 Peristaltic (tubing set to: ~4 m) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Purging 6
 Sampling 4

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1501</u>	<u>0.562</u>	
<u>7</u>	<u>6.80</u>	<u>942</u>	<u>14.2</u>	<u>72</u>	<u>-</u>	<u>1621</u>	<u>0.511</u>	
<u>14</u>	<u>6.80</u>	<u>937</u>	<u>14.0</u>	<u>38</u>	<u>-</u>	<u>1640</u>	<u>0.626</u>	<u>max mL/min</u>
<u>21</u>	<u>6.7A</u>	<u>937</u>	<u>13.9</u>	<u>36</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
 Sheen Yes ☐ No ☒ Description: _____

Colour (initial) grey-brown (stable) grey-brown
 Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPH ☒ BTEX/VPH/MTBE ☐ EPH ☐
 LEPH/HEPH ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other Glycols ☒

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

GENERAL INFORMATION

Monitoring Well ID: MW20-13
Sampler: RFM

Project #: 15434
Client: Brunswick Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Stick-up ☐ Lock ☐ Well Casing 2-inch (51 mm) ☒ Diameter or other: _____
Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 28/20 Weather: cloud 10c
Depth to Bottom of Well from TOC (X) 2.428 metres
Depth to Water from Top of Casing (Y) 0.573 metres
Depth to Product (if applicable) _____ metres
Length of Water Column (X-Y) 2 metres
Volume of Water in Well = (X - Y) • 2 4 litres
Minimum Volume = 6 • well volume 24 litres
Total Volume Developed 24 litres

Development Method

Water Pump ☐
Surge Block (time: 5 min) ☒
Bailer ☐
Other (specify) _____

Turbidity Ratings *

Before Dev. 10
After Dev. 8

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29 20 Weather: cloud 18c
Minimum Volume = 3 • well volume 18 litres

Purge/Sample Method

Water Pump ☐
Peristaltic (tubing set to: ~2 m.) ☒
Bailer ☐
Other (specify) _____

Turbidity Ratings *

Purging 2
Sampling 2

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTWC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1306</u>	<u>0.572</u>	
<u>4</u>	<u>6.85</u>	<u>1072</u>	<u>14.5</u>	<u>82</u>	<u>-</u>	<u>1326</u>	<u>0.695</u>	<u>no water</u>
<u>8</u>	<u>6.80</u>	<u>962</u>	<u>14.5</u>	<u>72</u>	<u>-</u>	<u>1339</u>	<u>0.782</u>	
<u>12</u>	<u>6.79</u>	<u>961</u>	<u>14.5</u>	<u>70</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
Sheen Yes ☐ No ☒ Description: _____

Colour (initial) red-brown (stable) red-brown
Recovery ** Slow ☐ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPB ☒	BTEX/VPB/MTBE ☐	EPH ☐
LEPH/HEPB ☒	PAHs ☒	Glycols ☐
Non-Chlorinated Phenol ☐	Chlorinated Phenols ☐	PCBs ☐
Dissolved Metals ☒	Field Filter & Preserved? ☒	Total Metals ☐
Pesticides ☐	pH ☐	Other ☐

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record

Version 3.0



GENERAL INFORMATION

Monitoring Well ID: MW20-15
 Sampler: RFM

Project #: 15434
 Client: Brunswick Prop Holdings

WELL INFORMATION

Well Cover Type ☒ Flush ☐ Stick-up ☐ Lock ☐ Well Casing 2-inch (51 mm) ☒ Diameter or other: _____
 Well Head Vapour Reading 0 ppm or %LEL ☐ RKI Eagle ☒ MiniRae ☐ Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Oct 29/20 Weather: cloud 8
 Depth to Bottom of Well from TOC (X) 7.5m metres
 Depth to Water from Top of Casing (Y) 4.8m metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 3 metres
 Volume of Water in Well = (X - Y) • 2 6 litres
 Minimum Volume = 6 • well volume 36 litres
Total Volume Developed 36 litres

Development Method

Water Pump ☐
 Surge Block (time: 10 min) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Before Dev. 10
 After Dev. 8

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Oct 29/20 Weather: cloud 12
 Minimum Volume = 3 • well volume 18 litres

Purge/Sample Method

Water Pump ☐
 Peristaltic (tubing set to: ~ 7 m) ☒
 Bailer ☐
 Other (specify) _____

Turbidity Ratings *

Purging 1
 Sampling 1

Well volume Purged (L)	pH	Conductivity (uS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min.)
<u>0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1430</u>	<u>4.726</u>	
<u>6</u>	<u>6.88</u>	<u>2.52</u>	<u>13.6</u>	<u>63</u>	<u>-</u>	<u>1442</u>	<u>4.716</u>	
<u>12</u>	<u>6.85</u>	<u>2.57</u>	<u>13.6</u>	<u>65</u>	<u>-</u>		<u>4.719</u>	<u>~ 100 mL/min</u>
<u>18</u>	<u>6.86</u>	<u>2.58</u>	<u>13.6</u>	<u>65</u>	<u>-</u>			

Odour Yes ☐ No ☒ Description: _____
 Sheen Yes ☐ No ☒ Description: _____

Colour (initial) yellow (stable) yellow
 Recovery ** Slow ☒ Moderate ☐ Fast ☒

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)

*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

Date and Time: Oct 29 2020 Laboratory: BV

VOC/VPB ☒ BTEX/VPB/MTBE ☐ EPH ☐
 LEPH/HEPH ☒ PAHs ☒ Glycols ☐
 Non-Chlorinated Phenol ☐ Chlorinated Phenols ☐ PCBs ☐
 Dissolved Metals ☒ Field Filter & Preserved? ☒ Total Metals ☐
 Pesticides ☐ pH ☐ Other: glycols ☒

Duplicate Sample ID: MW20-A

Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

BUREAU VERITAS LABORATORIES LTD. ANALYTICAL REPORTS



Your Project #: 15934

Attention: Ross McCarter

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Your C.O.C. #: 623318-05-01, 623318-02-01, 623318-01-01, 623318-03-01, 623318-04-01, 617674-03-01, 617674-04-01, 617674-05-01

Report Date: 2020/11/10
Report #: R2953948
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C078994

Received: 2020/10/27, 08:00

Sample Matrix: Soil
Samples Received: 22

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH VH F1 in Soil - Field Pres. (2)	12	N/A	2020/10/30	BBY8SOP-00010 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul 2017
BTEX/MTBE LH VH F1 in Soil - Field Pres. (2)	1	N/A	2020/11/03	BBY8SOP-00010 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul 2017
Phenols in Soil by GCMS	1	2020/11/03	2020/11/03	BBY8SOP-00054	BCMOE BCLM Sep2017 m
Volatile F1-BTEX (3)	12	N/A	2020/11/01	BBY WI-00033	Auto Calc
Volatile F1-BTEX (3)	4	N/A	2020/11/02	BBY WI-00033	Auto Calc
Volatile F1-BTEX (3)	4	N/A	2020/11/04	BBY WI-00033	Auto Calc
Volatile F1-BTEX (3)	1	N/A	2020/11/05	BBY WI-00033	Auto Calc
CCME Hydrocarbons (F2-F4 in soil) (4)	8	2020/10/30	2020/10/30	BBY8SOP-00030	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (4)	11	2020/10/30	2020/10/31	BBY8SOP-00030	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (4)	2	2020/11/02	2020/11/03	BBY8SOP-00030	CCME PHC-CWS m
Glycols in Soil by GC/FID (1)	8	2020/11/02	2020/11/02	CAL SOP-00093	BCMOE Glycols 09/17
Elements by ICPMS (total)	4	2020/11/04	2020/11/04	BBY7SOP-00004 / BBY7SOP-00001	EPA 6020b R2 m
Elements by ICPMS (total)	18	2020/11/04	2020/11/05	BBY7SOP-00004 / BBY7SOP-00001	EPA 6020b R2 m
Moisture	21	2020/10/30	2020/10/31	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	1	2020/11/02	2020/11/03	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Index of Additive Cancer Risk Calc.	14	N/A	2020/11/02	BBY WI-00033	Auto Calc
Index of Additive Cancer Risk Calc.	6	N/A	2020/11/03	BBY WI-00033	Auto Calc
Index of Additive Cancer Risk Calc.	2	N/A	2020/11/04	BBY WI-00033	Auto Calc
PAH in Soil by GC/MS (SIM)	5	2020/10/30	2020/10/30	BBY8SOP-00022	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	9	2020/10/30	2020/10/31	BBY8SOP-00022	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	1	2020/10/30	2020/11/01	BBY8SOP-00022	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	5	2020/10/30	2020/11/02	BBY8SOP-00022	BCMOE BCLM Jul2017m



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CERTIFICATE OF ANALYSIS

BV LABS JOB #: C078994

Received: 2020/10/27, 08:00

Sample Matrix: Soil
Samples Received: 22

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
PAH in Soil by GC/MS (SIM)	2	2020/11/02	2020/11/04	BBY8SOP-00022	BCMOE BCLM Jul2017m
Total PAH and B(a)P Calculation (5)	14	N/A	2020/11/02	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation (5)	6	N/A	2020/11/03	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation (5)	2	N/A	2020/11/04	BBY WI-00033	Auto Calc
Phenols (Totals) in Soil - Calc. (6)	1	N/A	2020/11/04	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	4	2020/11/04	2020/11/04	BBY6SOP-00028	BCMOE BCLM Mar2005 m
pH (2:1 DI Water Extract)	18	2020/11/04	2020/11/05	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID (7)	14	N/A	2020/11/02	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID (7)	6	N/A	2020/11/03	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID (7)	2	N/A	2020/11/05	BBY WI-00033	Auto Calc
EPH in Soil by SG GC/FID	1	2020/11/10	2020/11/10	BBY8SOP-00029	BCMOE BCLM Dec2016 m
EPH in Soil by GC/FID	9	2020/10/30	2020/10/30	BBY8SOP-00029	BCMOE BCLM Dec2016 m
EPH in Soil by GC/FID	10	2020/10/30	2020/10/31	BBY8SOP-00029	BCMOE BCLM Dec2016 m
EPH in Soil by GC/FID	1	2020/10/30	2020/11/02	BBY8SOP-00029	BCMOE BCLM Dec2016 m
EPH in Soil by GC/FID	2	2020/11/02	2020/11/04	BBY8SOP-00029	BCMOE BCLM Dec2016 m
VOCs, VH, F1, LH in Soil - Field Pres. (2)	4	N/A	2020/10/31	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Sep 2017m
VOCs, VH, F1, LH in Soil - Field Pres. (2)	4	N/A	2020/11/04	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Sep 2017m
Volatile HC-BTEX for Soil (8)	4	N/A	2020/11/02	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil (8)	3	N/A	2020/11/04	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil (8)	1	N/A	2020/11/05	BBY WI-00033	Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

Your Project #: 15934

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Your C.O.C. #: 623318-05-01, 623318-02-01, 623318-01-01, 623318-03-01, 623318-04-01, 617674-03-01, 617674-04-01, 617674-05-01

Report Date: 2020/11/10

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CERTIFICATE OF ANALYSIS

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All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by BV Labs Calgary Environmental

(2) The extraction date for VOC, BTEX, VH, or F1 samples that are field preserved with methanol equals the date sampled, unless otherwise stated.

(3) F1 - BTEX calculation is based on the Canada-Wide Standard for Petroleum Hydrocarbons by the CCME = F1 result subtracts the results of BTEX.

(4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(5) Total PAHs in Soil include: Quinoline, Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Acridine, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b&j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, and Benzo(g,h,i)perylene.

Total PAHs in Sediment include (B.C. Reg. 116/2018, Schedule 3.4): Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(a)pyrene, and Dibenzo(a,h)anthracene.

(6) Total Phenols include (from BC Lab Manual): Nonchlorinated Phenols [Phenol, 2,4-Dimethylphenol, 2,6-Dimethylphenol, 3,4-Dimethylphenol, 4-Methylphenol (para-Cresol), 4-Hydroxyphenol(Hydroquinone)]; Nitrophenols [2,4-Dinitrophenol, 2-Methyl-4,6-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol]; Chlorophenols [2-Chlorophenol, 3-Chlorophenol, 4-Chlorophenol, 4-Chloro-3-Methylphenol, 2,3-Dichlorophenol, 2,4-Dichlorophenol, 2,5-Dichlorophenol, 2,6-Dichlorophenol, 3,4-Dichlorophenol, 3,5-Dichlorophenol, 2,3,4-Trichlorophenol, 2,3,5-Trichlorophenol, 2,3,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 3,4,5-Trichlorophenol, 2,3,4,5-Tetrachlorophenol, 2,3,4,6-Tetrachlorophenol, 2,3,5,6-Tetrachlorophenol, Pentachlorophenol].



Your Project #: 15934

Attention: Ross McCarter

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BV LABS JOB #: C078994

Received: 2020/10/27, 08:00

(7) LEPH = EPH (C10 to C19) - (Naphthalene + Phenanthrene)

HEPH = EPH (C19 to C32) - (Benzo(a)anthracene + Benzo(a)pyrene + Benzo(b)fluoranthene + Benzo(k)fluoranthene + Dibenz(a,h)anthracene + Indeno(1,2,3-cd)pyrene + Pyrene)

(8) VPH = VH - (Benzene + Toluene + Ethylbenzene + m & p-Xylene + o-Xylene + Styrene)

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gail Pedersen, Key Account Specialist

Email: Gail.Pedersen@bvlabs.com

Phone# (604) 734 7276

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**PETROLEUM HYDROCARBONS (CCME)**

BV Labs ID		YS8623	YS8625	YS8628	YS8634	YS8640	YS8646		
Sampling Date		2020/10/23 12:00	2020/10/23 12:00	2020/10/23 12:00	2020/10/23 10:00	2020/10/22 08:00	2020/10/23 09:00		
COC Number		623318-05-01	623318-05-01	623318-05-01	623318-02-01	623318-02-01	623318-01-01		
	UNITS	BH20-1 (1.5)	BH20-2 (0.3)	BH20-3 (0.5)	BH20-4 (0.5)	MW20-5 (2.5)	BH20-6 (1.5)	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	<10	15	45	<10	10	<10	10	A072827
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	710	1300	57	85	94	50	A072827
F4 (C34-C50 Hydrocarbons)	mg/kg	57	1300	2800	110	140	70	50	A072827
Reached Baseline at C50	mg/kg	Yes	No	No	No	No	Yes	N/A	A072827

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	91	91	89	103	104	105		A072827
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RDL = Reportable Detection Limit

N/A = Not Applicable

BV Labs ID		YS8652	YS8663	YS8667	YS8671	YS8702		
Sampling Date		2020/10/26 13:00	2020/10/26 15:00	2020/10/26 15:00	2020/10/26 15:00	2020/10/26 12:00		
COC Number		623318-01-01	623318-03-01	623318-03-01	623318-03-01	623318-04-01		
	UNITS	MW20-7 (3.5)	BH20-8 (1.5)	MW20-9 (2.5)	MW20-10 (0.5)	MW20-10 (2.5)	RDL	QC Batch

Ext. Pet. Hydrocarbon

F2 (C10-C16 Hydrocarbons)	mg/kg	17	11	<10	17	<10	10	A072827
F3 (C16-C34 Hydrocarbons)	mg/kg	120	250	<50	300	62	50	A072827
F4 (C34-C50 Hydrocarbons)	mg/kg	85	280	<50	540	<50	50	A072827
Reached Baseline at C50	mg/kg	Yes	No	Yes	No	Yes	N/A	A072827

Surrogate Recovery (%)

O-TERPHENYL (sur.)	%	101	102	105	93	103		A072827
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RDL = Reportable Detection Limit

N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		YS8704		YS8706	YS8711	YS8719	YS8719		
Sampling Date		2020/10/26 12:00		2020/10/26 12:00	2020/10/26 12:00	2020/10/26 16:00	2020/10/26 16:00		
COC Number		623318-04-01		623318-04-01	623318-04-01	617674-03-01	617674-03-01		
	UNITS	MW20-11 (0.5)	QC Batch	MW20-12 (0.3)	MW20-13 (0.5)	BH20-14 (0.5)	BH20-14 (0.5) Lab-Dup	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A076629	<10	29	13	15	10	A072827
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	A076629	<50	550	170	230	50	A072827
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	A076629	<50	910	420	470	50	A072827
Reached Baseline at C50	mg/kg	Yes	A076629	Yes	No	No	No	N/A	A072827

Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	95	A076629	101	93	97	97		A072827

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

BV Labs ID		YS8722	YS8747	YS8749	YS8751	YS8755		
Sampling Date		2020/10/26 16:00	2020/10/26 13:00	2020/10/26 13:00	2020/10/26 13:00	2020/10/23 08:00		
COC Number		617674-03-01	617674-04-01	617674-04-01	617674-04-01	617674-05-01		
	UNITS	BH20-14 (4.0)	MW20-15 (7.5)	BH20-16 (0.5)	BH20-16 (2.5)	BH20-B	RDL	QC Batch

Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	18	<10	59	10	A072827
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	150	3400	72	1200	50	A072827
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	190	3300	55	2900	50	A072827
Reached Baseline at C50	mg/kg	Yes	No	No	Yes	No	N/A	A072827

Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	102	105	91	104	92		A072827

RDL = Reportable Detection Limit
N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		YS8759	YS8759		
Sampling Date		2020/10/26 08:00	2020/10/26 08:00		
COC Number		617674-05-01	617674-05-01		
	UNITS	MW20-F	MW20-F Lab-Dup	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	31	33	10	A076629
F3 (C16-C34 Hydrocarbons)	mg/kg	610	710	50	A076629
F4 (C34-C50 Hydrocarbons)	mg/kg	1000	1200	50	A076629
Reached Baseline at C50	mg/kg	No	No	N/A	A076629
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	95	92		A076629
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable					

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**GLYCOLS BY GC-FID (SOIL)**

BV Labs ID		YS8634	YS8646	YS8663	YS8671	YS8704		
Sampling Date		2020/10/23 10:00	2020/10/23 09:00	2020/10/26 15:00	2020/10/26 15:00	2020/10/26 12:00		
COC Number		623318-02-01	623318-01-01	623318-03-01	623318-03-01	623318-04-01		
	UNITS	BH20-4 (0.5)	BH20-6 (1.5)	BH20-8 (1.5)	MW20-10 (0.5)	MW20-11 (0.5)	RDL	QC Batch
Glycols								
Extractable (Water) Ethylene Glycol	mg/kg	<10	<10	<10	<10	<10	10	A074519
Extractable (Water) Diethylene Glycol	mg/kg	<10	<10	<10	<10	<10	10	A074519
Extractable (Water) Triethylene Glycol	mg/kg	<10	<10	<10	<10	<10	10	A074519
Extractable (Water) Propylene Glycol	mg/kg	<10	<10	<10	<10	<10	10	A074519
Surrogate Recovery (%)								
Extractable (Water) Methyl Sulfone (sur.)	%	91	82	94	95	98		A074519
RDL = Reportable Detection Limit								

BV Labs ID		YS8706	YS8719	YS8749		
Sampling Date		2020/10/26 12:00	2020/10/26 16:00	2020/10/26 13:00		
COC Number		623318-04-01	617674-03-01	617674-04-01		
	UNITS	MW20-12 (0.3)	BH20-14 (0.5)	BH20-16 (0.5)	RDL	QC Batch
Glycols						
Extractable (Water) Ethylene Glycol	mg/kg	<10	<10	<10	10	A074519
Extractable (Water) Diethylene Glycol	mg/kg	<10	<10	<10	10	A074519
Extractable (Water) Triethylene Glycol	mg/kg	<10	<10	<10	10	A074519
Extractable (Water) Propylene Glycol	mg/kg	<10	<10	<10	10	A074519
Surrogate Recovery (%)						
Extractable (Water) Methyl Sulfone (sur.)	%	98	94	96		A074519
RDL = Reportable Detection Limit						

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**PHYSICAL TESTING (SOIL)**

BV Labs ID		YS8622		YS8623	YS8625	YS8628	YS8634		
Sampling Date		2020/10/23 12:00		2020/10/23 12:00	2020/10/23 12:00	2020/10/23 12:00	2020/10/23 10:00		
COC Number		623318-05-01		623318-05-01	623318-05-01	623318-05-01	623318-02-01		
	UNITS	BH20-1 (1.0)	QC Batch	BH20-1 (1.5)	BH20-2 (0.3)	BH20-3 (0.5)	BH20-4 (0.5)	RDL	QC Batch

Physical Properties

Moisture	%	43	A072737	17	8.0	9.2	11	0.30	A072638
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RDL = Reportable Detection Limit

BV Labs ID		YS8640	YS8646	YS8652	YS8663	YS8667	YS8671		
Sampling Date		2020/10/22 08:00	2020/10/23 09:00	2020/10/26 13:00	2020/10/26 15:00	2020/10/26 15:00	2020/10/26 15:00		
COC Number		623318-02-01	623318-01-01	623318-01-01	623318-03-01	623318-03-01	623318-03-01		
	UNITS	MW20-5 (2.5)	BH20-6 (1.5)	MW20-7 (3.5)	BH20-8 (1.5)	MW20-9 (2.5)	MW20-10 (0.5)	RDL	QC Batch

Physical Properties

Moisture	%	12	12	17	13	16	8.9	0.30	A072638
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RDL = Reportable Detection Limit

BV Labs ID		YS8702		YS8704		YS8706	YS8711		
Sampling Date		2020/10/26 12:00		2020/10/26 12:00		2020/10/26 12:00	2020/10/26 12:00		
COC Number		623318-04-01		623318-04-01		623318-04-01	623318-04-01		
	UNITS	MW20-10 (2.5)	QC Batch	MW20-11 (0.5)	QC Batch	MW20-12 (0.3)	MW20-13 (0.5)	RDL	QC Batch

Physical Properties

Moisture	%	15	A072638	24	A075010	20	6.7	0.30	A072638
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RDL = Reportable Detection Limit

BV Labs ID		YS8719	YS8722	YS8747	YS8749	YS8751	YS8755		
Sampling Date		2020/10/26 16:00	2020/10/26 16:00	2020/10/26 13:00	2020/10/26 13:00	2020/10/26 13:00	2020/10/23 08:00		
COC Number		617674-03-01	617674-03-01	617674-04-01	617674-04-01	617674-04-01	617674-05-01		
	UNITS	BH20-14 (0.5)	BH20-14 (4.0)	MW20-15 (7.5)	BH20-16 (0.5)	BH20-16 (2.5)	BH20-B	RDL	QC Batch

Physical Properties

Moisture	%	8.1	13	17	5.6	13	9.2	0.30	A072638
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RDL = Reportable Detection Limit

BV Labs ID		YS8755		YS8759		
Sampling Date		2020/10/23 08:00		2020/10/26 08:00		
COC Number		617674-05-01		617674-05-01		
	UNITS	BH20-B Lab-Dup	QC Batch	MW20-F	RDL	QC Batch

Physical Properties

Moisture	%	9.6	A072638	9.0	0.30	A072773
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RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

TOTAL PETROLEUM HYDROCARBONS (SOIL)

BV Labs ID		YS8622		
Sampling Date		2020/10/23 12:00		
COC Number		623318-05-01		
	UNITS	BH20-1 (1.0)	RDL	QC Batch
Hydrocarbons				
SG BC-CSR EPH (C10-C19)	mg/kg	<100	100	A082839
SG BC-CSR EPH (C19-C32)	mg/kg	311	100	A082839
Surrogate Recovery (%)				
SG O-TERPHENYL (sur.)	%	82		A082839
RDL = Reportable Detection Limit				

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VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CCME BTEX/F1IN SOIL - FIELD PRESERVED (SOIL)

BV Labs ID		YS8623			YS8623			YS8625		
Sampling Date		2020/10/23 12:00			2020/10/23 12:00			2020/10/23 12:00		
COC Number		623318-05-01			623318-05-01			623318-05-01		
	UNITS	BH20-1 (1.5)	RDL	QC Batch	BH20-1 (1.5) Lab-Dup	RDL	QC Batch	BH20-2 (0.3)	RDL	QC Batch
Volatiles										
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	A072703	<0.10	0.10	A072703	<0.10	0.10	A072703
Benzene	mg/kg	<0.0050	0.0050	A072703	<0.0050	0.0050	A072703	<0.0050	0.0050	A072703
Toluene	mg/kg	<0.050	0.050	A072703	<0.050	0.050	A072703	<0.050	0.050	A072703
Ethylbenzene	mg/kg	<0.010	0.010	A072703	<0.010	0.010	A072703	<0.010	0.010	A072703
m & p-Xylene	mg/kg	<0.040	0.040	A072703	<0.040	0.040	A072703	<0.040	0.040	A072703
o-Xylene	mg/kg	<0.040	0.040	A072703	<0.040	0.040	A072703	<0.040	0.040	A072703
Styrene	mg/kg	<0.030	0.030	A072703	<0.030	0.030	A072703	<0.030	0.030	A072703
Xylenes (Total)	mg/kg	<0.040	0.040	A072703	<0.040	0.040	A072703	<0.040	0.040	A072703
F1 (C6-C10)	mg/kg	<10	10	A072703	<10	10	A072703	<10	10	A072703
Calculated Parameters										
F1 (C6-C10) - BTEX	mg/kg	<10	10	A071369				<10	10	A071369
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	105		A072703	100		A072703	104		A072703
4-Bromofluorobenzene (sur.)	%	92		A072703	97		A072703	98		A072703
D10-o-Xylene (sur.)	%	75		A072703	93		A072703	89		A072703
D4-1,2-Dichloroethane (sur.)	%	107		A072703	87		A072703	94		A072703
RDL = Reportable Detection Limit										
Lab-Dup = Laboratory Initiated Duplicate										



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CCME BTEX/F1IN SOIL - FIELD PRESERVED (SOIL)

BV Labs ID		YS8628	YS8640	YS8652	YS8667		YS8702		
Sampling Date		2020/10/23 12:00	2020/10/22 08:00	2020/10/26 13:00	2020/10/26 15:00		2020/10/26 12:00		
COC Number		623318-05-01	623318-02-01	623318-01-01	623318-03-01		623318-04-01		
	UNITS	BH20-3 (0.5)	MW20-5 (2.5)	MW20-7 (3.5)	MW20-9 (2.5)	QC Batch	MW20-10 (2.5)	RDL	QC Batch

Volatiles									
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	A072703	<0.10	0.10	A072712
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	A072703	<0.0050	0.0050	A072712
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	A072703	<0.050	0.050	A072712
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	A072703	<0.010	0.010	A072712
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	A072703	<0.040	0.040	A072712
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	A072703	<0.040	0.040	A072712
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	A072703	<0.030	0.030	A072712
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	A072703	<0.040	0.040	A072712
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	A072703	<10	10	A072712

Calculated Parameters									
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	A071369	<10	10	A071369

Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	102	100	102	95	A072703	98		A072712
4-Bromofluorobenzene (sur.)	%	95	94	101	91	A072703	91		A072712
D10-o-Xylene (sur.)	%	92	85	87	81	A072703	94		A072712
D4-1,2-Dichloroethane (sur.)	%	88	89	89	89	A072703	96		A072712

RDL = Reportable Detection Limit



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CCME BTEX/F1IN SOIL - FIELD PRESERVED (SOIL)

BV Labs ID		YS8702			YS8711	YS8722		
Sampling Date		2020/10/26 12:00			2020/10/26 12:00	2020/10/26 16:00		
COC Number		623318-04-01			623318-04-01	617674-03-01		
	UNITS	MW20-10 (2.5) Lab-Dup	RDL	QC Batch	MW20-13 (0.5)	BH20-14 (4.0)	RDL	QC Batch
Volatiles								
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	A072712	<0.10	<0.10	0.10	A072703
Benzene	mg/kg	<0.0050	0.0050	A072712	<0.0050	<0.0050	0.0050	A072703
Toluene	mg/kg	<0.050	0.050	A072712	<0.050	<0.050	0.050	A072703
Ethylbenzene	mg/kg	<0.010	0.010	A072712	<0.010	<0.010	0.010	A072703
m & p-Xylene	mg/kg	<0.040	0.040	A072712	<0.040	<0.040	0.040	A072703
o-Xylene	mg/kg	<0.040	0.040	A072712	<0.040	<0.040	0.040	A072703
Styrene	mg/kg	<0.030	0.030	A072712	<0.030	<0.030	0.030	A072703
Xylenes (Total)	mg/kg	<0.040	0.040	A072712	<0.040	<0.040	0.040	A072703
F1 (C6-C10)	mg/kg	<10	10	A072712	<10	<10	10	A072703
Calculated Parameters								
F1 (C6-C10) - BTEX	mg/kg				<10	<10	10	A071369
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	101		A072712	102	112		A072703
4-Bromofluorobenzene (sur.)	%	101		A072712	96	99		A072703
D10-o-Xylene (sur.)	%	97		A072712	90	83		A072703
D4-1,2-Dichloroethane (sur.)	%	103		A072712	92	94		A072703
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**CCME BTEX/F1IN SOIL - FIELD PRESERVED (SOIL)**

BV Labs ID		YS8747	YS8751		YS8755		YS8759		
Sampling Date		2020/10/26 13:00	2020/10/26 13:00		2020/10/23 08:00		2020/10/26 08:00		
COC Number		617674-04-01	617674-04-01		617674-05-01		617674-05-01		
	UNITS	MW20-15 (7.5)	BH20-16 (2.5)	QC Batch	BH20-B	QC Batch	MW20-F	RDL	QC Batch

Volatiles

Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	A072712	<0.10	A076041	<0.10	0.10	A072703
Benzene	mg/kg	<0.0050	<0.0050	A072712	<0.0050	A076041	<0.0050	0.0050	A072703
Toluene	mg/kg	<0.050	<0.050	A072712	<0.050	A076041	<0.050	0.050	A072703
Ethylbenzene	mg/kg	<0.010	<0.010	A072712	<0.010	A076041	<0.010	0.010	A072703
m & p-Xylene	mg/kg	<0.040	<0.040	A072712	<0.040	A076041	<0.040	0.040	A072703
o-Xylene	mg/kg	<0.040	<0.040	A072712	<0.040	A076041	<0.040	0.040	A072703
Styrene	mg/kg	<0.030	<0.030	A072712	<0.030	A076041	<0.030	0.030	A072703
Xylenes (Total)	mg/kg	<0.040	<0.040	A072712	<0.040	A076041	<0.040	0.040	A072703
F1 (C6-C10)	mg/kg	<10	<10	A072712	<10	A076041	<10	10	A072703

Calculated Parameters

F1 (C6-C10) - BTEX	mg/kg	<10	<10	A071369	<10	A071369	<10	10	A071369
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Surrogate Recovery (%)

1,4-Difluorobenzene (sur.)	%	98	98	A072712	101	A076041	98		A072703
4-Bromofluorobenzene (sur.)	%	94	96	A072712	100	A076041	97		A072703
D10-o-Xylene (sur.)	%	95	97	A072712	90	A076041	90		A072703
D4-1,2-Dichloroethane (sur.)	%	97	98	A072712	105	A076041	91		A072703

RDL = Reportable Detection Limit

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**COMBINED CP/NCP PHENOLS IN SOIL (SOIL)**

BV Labs ID		YS8622		
Sampling Date		2020/10/23 12:00		
COC Number		623318-05-01		
	UNITS	BH20-1 (1.0)	RDL	QC Batch
Calculated Parameters				
Total Monochlorophenols	mg/kg	<0.0050	0.0050	A071717
Total Dichlorophenols	mg/kg	<0.0050	0.0050	A071717
Total Trichlorophenols	mg/kg	<0.0050	0.0050	A071717
Total Tetrachlorophenols	mg/kg	<0.0050	0.0050	A071717
Total Chlorophenols	mg/kg	<0.0050	0.0050	A071717
Total Nonchlorinated Phenols	mg/kg	<5.0	5.0	A071717
Total Phenolic Compounds	mg/kg	<5.0	5.0	A071717
SEMI-VOLATILE ORGANICS				
Phenol	mg/kg	<0.050	0.050	A075326
2-chlorophenol	mg/kg	<0.0050	0.0050	A075326
3 & 4-chlorophenol	mg/kg	<0.0050	0.0050	A075326
2-methylphenol	mg/kg	<0.050	0.050	A075326
3 & 4-methylphenol	mg/kg	<0.050	0.050	A075326
2-nitrophenol	mg/kg	<0.050	0.050	A075326
2,4-dimethylphenol	mg/kg	<0.050	0.050	A075326
2,4 + 2,5-Dichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3-Dichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,6-dichlorophenol	mg/kg	<0.0050	0.0050	A075326
3,5-Dichlorophenol	mg/kg	<0.0050	0.0050	A075326
3,4-Dichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,4,5-trichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,4,6-trichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3,5-trichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3,6-Trichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3,4-trichlorophenol	mg/kg	<0.0050	0.0050	A075326
3,4,5-Trichlorophenol	mg/kg	<0.0050	0.0050	A075326
2,4-dinitrophenol	mg/kg	<0.050	0.050	A075326
4,6-dinitro-2-methylphenol	mg/kg	<0.050	0.050	A075326
2,3,4,6-tetrachlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3,4,5-tetrachlorophenol	mg/kg	<0.0050	0.0050	A075326
2,3,5,6-tetrachlorophenol	mg/kg	<0.0050	0.0050	A075326
4-nitrophenol	mg/kg	<0.050	0.050	A075326
RDL = Reportable Detection Limit				



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

COMBINED CP/NCP PHENOLS IN SOIL (SOIL)

BV Labs ID		YS8622		
Sampling Date		2020/10/23 12:00		
COC Number		623318-05-01		
	UNITS	BH20-1 (1.0)	RDL	QC Batch
2,6-Dimethylphenol	mg/kg	<0.050	0.050	A075326
3,4-Dimethylphenol	mg/kg	<0.050	0.050	A075326
Pentachlorophenol	mg/kg	<0.0050	0.0050	A075326
4-Chloro-3-Methylphenol	mg/kg	<5.0	5.0	A075326
4-Hydroxyphenol (Hydroquinone)	mg/kg	<5.0	5.0	A075326
Surrogate Recovery (%)				
2,4,6-TRIBROMOPHENOL (sur.)	%	101		A075326
2,4-DIBROMOPHENOL (sur.)	%	101		A075326
RDL = Reportable Detection Limit				



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BV Labs Job #: C078994

Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8622		YS8623		YS8625	YS8628		
Sampling Date		2020/10/23 12:00		2020/10/23 12:00		2020/10/23 12:00	2020/10/23 12:00		
COC Number		623318-05-01		623318-05-01		623318-05-01	623318-05-01		
	UNITS	BH20-1 (1.0)	QC Batch	BH20-1 (1.5)	RDL	BH20-2 (0.3)	BH20-3 (0.5)	RDL	QC Batch

Calculated Parameters

Index of Additive Cancer Risk(IACR)	N/A	48	A071716	1.8	0.10	2.2	1.8	0.10	A071716
Low Molecular Weight PAH's	ug/g	17	A071204	0.81	0.050	0.21	0.21	0.050	A071204
High Molecular Weight PAH's	ug/g	29	A071204	1.2	0.050	1.2	0.78	0.25	A071204
Total PAH	ug/g	46	A071204	2.0	0.050	1.4	0.99	0.25	A071204
B[a]P TPE Total Potency Equivalents	ug/g	4.3	A071204	0.15	0.010	0.19	0.16	0.010	A071204

Polycyclic Aromatics

Quinoline	ug/g	<0.050	A073678	<0.050	0.050	<0.050	<0.050	0.050	A072815
Naphthalene	ug/g	0.61	A073678	0.029	0.010	<0.010	<0.010	0.010	A072815
1-Methylnaphthalene	ug/g	0.88	A073678	<0.050	0.050	<0.050	<0.050	0.050	A072815
2-Methylnaphthalene	ug/g	1.2	A073678	0.049	0.020	<0.020	0.032	0.020	A072815
Acenaphthylene	ug/g	0.17	A073678	0.012	0.0050	0.015	0.035	0.0050	A072815
Acenaphthene	ug/g	2.1	A073678	0.092	0.0050	0.015	0.0073 (1)	0.0050	A072815
Fluorene	ug/g	2.1	A073678	0.099	0.020	0.022	0.027	0.020	A072815
Phenanthrene	ug/g	7.3	A073678	0.43	0.010	0.13	0.083	0.010	A072815
Anthracene	ug/g	2.2	A073678	0.099	0.0040	0.033	0.022	0.0040	A072815
Fluoranthene	ug/g	6.9	A073678	0.31	0.020	0.23	0.088	0.020	A072815
Pyrene	ug/g	6.0	A073678	0.26	0.020	0.25	0.14	0.020	A072815
Benzo(a)anthracene	ug/g	2.8	A073678	0.11	0.020	0.096	0.063	0.020	A072815
Chrysene	ug/g	2.7	A073678	0.11	0.020	0.14	0.14	0.020	A072815
Benzo(b&j)fluoranthene	ug/g	3.2	A073678	0.12	0.020	0.16	0.14	0.020	A072815
Benzo(b)fluoranthene	ug/g	1.9	A073678	0.069	0.020	0.10	0.096	0.020	A072815
Benzo(k)fluoranthene	ug/g	1.2	A073678	0.049	0.020	0.052	0.033	0.020	A072815
Benzo(a)pyrene	ug/g	2.7	A073678	0.10	0.020	0.12	0.11	0.020	A072815
Indeno(1,2,3-cd)pyrene	ug/g	1.6	A073678	0.061	0.020	0.072	0.053	0.020	A072815
Dibenz(a,h)anthracene	ug/g	0.63	A073678	<0.020	0.020	0.029	0.022	0.020	A072815
Benzo(g,h,i)perylene	ug/g	1.6	A073678	0.059	0.050	<0.25 (2)	<0.25 (2)	0.25	A072815

Calculated Parameters

LEPH (C10-C19 less PAH)	mg/kg	<100	A071474	<100	100	<100	<100	100	A071474
HEPH (C19-C32 less PAH)	mg/kg	390	A071474	<100	100	510	990	100	A071474

RDL = Reportable Detection Limit

(1) Tentatively identified result and may be potentially biased high due to matrix interference.

(2) Detection limits raised due to dilution as a result of sample matrix interference.



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8622		YS8623		YS8625	YS8628		
Sampling Date		2020/10/23 12:00		2020/10/23 12:00		2020/10/23 12:00	2020/10/23 12:00		
COC Number		623318-05-01		623318-05-01		623318-05-01	623318-05-01		
	UNITS	BH20-1 (1.0)	QC Batch	BH20-1 (1.5)	RDL	BH20-2 (0.3)	BH20-3 (0.5)	RDL	QC Batch

Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	A073686	<100	100	<100	<100	100	A072820
EPH (C19-C32)	mg/kg	410	A073686	<100	100	510	990	100	A072820
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	81	A073678	84		83	84		A072815
D8-ACENAPHTHYLENE (sur.)	%	83	A073678	82		81	80		A072815
D8-NAPHTHALENE (sur.)	%	85	A073678	84		81	79		A072815
TERPHENYL-D14 (sur.)	%	87	A073678	81		85	81		A072815
O-TERPHENYL (sur.)	%	94	A073686	95		94	93		A072820
RDL = Reportable Detection Limit									



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8634	YS8640	YS8646	YS8652	YS8663		
Sampling Date		2020/10/23 10:00	2020/10/22 08:00	2020/10/23 09:00	2020/10/26 13:00	2020/10/26 15:00		
COC Number		623318-02-01	623318-02-01	623318-01-01	623318-01-01	623318-03-01		
	UNITS	BH20-4 (0.5)	MW20-5 (2.5)	BH20-6 (1.5)	MW20-7 (3.5)	BH20-8 (1.5)	RDL	QC Batch

Calculated Parameters

Index of Additive Cancer Risk(IACR)	N/A	0.24	1.1	0.24	6.0	2.7	0.10	A071716
Low Molecular Weight PAH's	ug/g	<0.050	0.067	<0.050	3.8	0.30	0.050	A071204
High Molecular Weight PAH's	ug/g	<0.050	0.55	<0.050	3.3	1.5	0.050	A071204
Total PAH	ug/g	<0.050	0.62	<0.050	7.2	1.8	0.050	A071204
B[a]P TPE Total Potency Equivalents	ug/g	0.024	0.097	0.024	0.54	0.25	0.010	A071204

Polycyclic Aromatics

Quinoline	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A072815
Naphthalene	ug/g	<0.010	<0.010	<0.010	0.29	<0.010	0.010	A072815
1-Methylnaphthalene	ug/g	<0.050	<0.050	<0.050	0.36	<0.050	0.050	A072815
2-Methylnaphthalene	ug/g	<0.020	<0.020	<0.020	0.51	<0.020	0.020	A072815
Acenaphthylene	ug/g	<0.0050	0.017	<0.0050	0.063	0.034	0.0050	A072815
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	1.1	0.0092	0.0050	A072815
Fluorene	ug/g	<0.020	<0.020	<0.020	0.59	0.026	0.020	A072815
Phenanthrene	ug/g	<0.010	0.034	<0.010	0.83	0.18	0.010	A072815
Anthracene	ug/g	<0.0040	0.016	<0.0040	0.14	0.051	0.0040	A072815
Fluoranthene	ug/g	<0.020	0.074	<0.020	0.66	0.28	0.020	A072815
Pyrene	ug/g	<0.020	0.094	<0.020	0.56	0.26	0.020	A072815
Benzo(a)anthracene	ug/g	<0.020	0.051	<0.020	0.31	0.13	0.020	A072815
Chrysene	ug/g	<0.020	0.060	<0.020	0.33	0.15	0.020	A072815
Benzo(b&j)fluoranthene	ug/g	<0.020	0.072	<0.020	0.40	0.19	0.020	A072815
Benzo(b)fluoranthene	ug/g	<0.020	0.044	<0.020	0.24	0.12	0.020	A072815
Benzo(k)fluoranthene	ug/g	<0.020	0.026	<0.020	0.16	0.070	0.020	A072815
Benzo(a)pyrene	ug/g	<0.020	0.067	<0.020	0.36	0.17	0.020	A072815
Indeno(1,2,3-cd)pyrene	ug/g	<0.020	0.046	<0.020	0.25	0.11	0.020	A072815
Dibenz(a,h)anthracene	ug/g	<0.020	<0.020	<0.020	0.067	0.029	0.020	A072815
Benzo(g,h,i)perylene	ug/g	<0.050	0.059	<0.050	0.25	0.12	0.050	A072815

Calculated Parameters

LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	<100	100	A071474
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	110	210	100	A071474

RDL = Reportable Detection Limit



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8634	YS8640	YS8646	YS8652	YS8663		
Sampling Date		2020/10/23 10:00	2020/10/22 08:00	2020/10/23 09:00	2020/10/26 13:00	2020/10/26 15:00		
COC Number		623318-02-01	623318-02-01	623318-01-01	623318-01-01	623318-03-01		
	UNITS	BH20-4 (0.5)	MW20-5 (2.5)	BH20-6 (1.5)	MW20-7 (3.5)	BH20-8 (1.5)	RDL	QC Batch

Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	<100	100	A072820
EPH (C19-C32)	mg/kg	<100	<100	<100	120	210	100	A072820
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	82	82	84	87	84		A072815
D8-ACENAPHTHYLENE (sur.)	%	82	83	86	89	86		A072815
D8-NAPHTHALENE (sur.)	%	83	82	85	87	83		A072815
TERPHENYL-D14 (sur.)	%	81	79	82	86	83		A072815
O-TERPHENYL (sur.)	%	99	99	99	100	98		A072820
RDL = Reportable Detection Limit								



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BV Labs Job #: C078994

Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8667	YS8671	YS8702		YS8704		
Sampling Date		2020/10/26 15:00	2020/10/26 15:00	2020/10/26 12:00		2020/10/26 12:00		
COC Number		623318-03-01	623318-03-01	623318-04-01		623318-04-01		
	UNITS	MW20-9 (2.5)	MW20-10 (0.5)	MW20-10 (2.5)	QC Batch	MW20-11 (0.5)	RDL	QC Batch

Calculated Parameters

Index of Additive Cancer Risk(IACR)	N/A	0.24	1.8	0.24	A071716	0.24	0.10	A071716
Low Molecular Weight PAH's	ug/g	<0.050	0.71	<0.050	A071204	<0.050	0.050	A071204
High Molecular Weight PAH's	ug/g	<0.050	1.2	0.059	A071204	<0.050	0.050	A071204
Total PAH	ug/g	<0.050	1.9	0.083	A071204	<0.050	0.050	A071204
B[a]P TPE Total Potency Equivalents	ug/g	0.024	0.15	0.024	A071204	0.024	0.010	A071204

Polycyclic Aromatics

Quinoline	ug/g	<0.050	<0.050	<0.050	A072815	<0.050	0.050	A076622
Naphthalene	ug/g	<0.010	0.093	<0.010	A072815	<0.010	0.010	A076622
1-Methylnaphthalene	ug/g	<0.050	0.091	<0.050	A072815	<0.050	0.050	A076622
2-Methylnaphthalene	ug/g	<0.020	0.093	<0.020	A072815	<0.020	0.020	A076622
Acenaphthylene	ug/g	<0.0050	0.020	<0.0050	A072815	<0.0050	0.0050	A076622
Acenaphthene	ug/g	<0.0050	0.040	<0.0050	A072815	<0.0050	0.0050	A076622
Fluorene	ug/g	<0.020	0.050	<0.020	A072815	<0.020	0.020	A076622
Phenanthrene	ug/g	<0.010	0.26	0.019	A072815	<0.010	0.010	A076622
Anthracene	ug/g	<0.0040	0.069	0.0061	A072815	<0.0040	0.0040	A076622
Fluoranthene	ug/g	<0.020	0.26	0.028	A072815	<0.020	0.020	A076622
Pyrene	ug/g	<0.020	0.28	0.030	A072815	<0.020	0.020	A076622
Benzo(a)anthracene	ug/g	<0.020	0.11	<0.020	A072815	<0.020	0.020	A076622
Chrysene	ug/g	<0.020	0.13	<0.020	A072815	<0.020	0.020	A076622
Benzo(b&j)fluoranthene	ug/g	<0.020	0.12	<0.020	A072815	<0.020	0.020	A076622
Benzo(b)fluoranthene	ug/g	<0.020	0.077	<0.020	A072815	<0.020	0.020	A076622
Benzo(k)fluoranthene	ug/g	<0.020	0.043	<0.020	A072815	<0.020	0.020	A076622
Benzo(a)pyrene	ug/g	<0.020	0.11	<0.020	A072815	<0.020	0.020	A076622
Indeno(1,2,3-cd)pyrene	ug/g	<0.020	0.062	<0.020	A072815	<0.020	0.020	A076622
Dibenz(a,h)anthracene	ug/g	<0.020	<0.020	<0.020	A072815	<0.020	0.020	A076622
Benzo(g,h,i)perylene	ug/g	<0.050	0.074	<0.050	A072815	<0.050	0.050	A076622

Calculated Parameters

LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	A071474	<100	100	A071474
HEPH (C19-C32 less PAH)	mg/kg	<100	260	<100	A071474	<100	100	A071474

RDL = Reportable Detection Limit



LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8667	YS8671	YS8702		YS8704		
Sampling Date		2020/10/26 15:00	2020/10/26 15:00	2020/10/26 12:00		2020/10/26 12:00		
COC Number		623318-03-01	623318-03-01	623318-04-01		623318-04-01		
	UNITS	MW20-9 (2.5)	MW20-10 (0.5)	MW20-10 (2.5)	QC Batch	MW20-11 (0.5)	RDL	QC Batch

Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	<100	A072820	<100	100	A076633
EPH (C19-C32)	mg/kg	<100	260	<100	A072820	<100	100	A076633
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	81	81	84	A072815	88		A076622
D8-ACENAPHTHYLENE (sur.)	%	83	84	85	A072815	86		A076622
D8-NAPHTHALENE (sur.)	%	81	82	83	A072815	87		A076622
TERPHENYL-D14 (sur.)	%	77	80	81	A072815	95		A076622
O-TERPHENYL (sur.)	%	96	97	96	A072820	91		A076633
RDL = Reportable Detection Limit								



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8706		YS8711		YS8719		
Sampling Date		2020/10/26 12:00		2020/10/26 12:00		2020/10/26 16:00		
COC Number		623318-04-01		623318-04-01		617674-03-01		
	UNITS	MW20-12 (0.3)	RDL	MW20-13 (0.5)	RDL	BH20-14 (0.5)	RDL	QC Batch

Calculated Parameters

Index of Additive Cancer Risk(IACR)	N/A	0.24	0.10	3.9	0.10	0.73	0.10	A071716
Low Molecular Weight PAH's	ug/g	<0.050	0.050	0.62	0.050	0.22	0.050	A071204
High Molecular Weight PAH's	ug/g	<0.050	0.050	2.3	0.25	0.42	0.050	A071204
Total PAH	ug/g	<0.050	0.050	3.0	0.25	0.64	0.050	A071204
B[a]P TPE Total Potency Equivalents	ug/g	0.024	0.010	0.34	0.010	0.061	0.010	A071204

Polycyclic Aromatics

Quinoline	ug/g	<0.050	0.050	<0.050	0.050	<0.050	0.050	A072815
Naphthalene	ug/g	<0.010	0.010	<0.010	0.010	0.014	0.010	A072815
1-Methylnaphthalene	ug/g	<0.050	0.050	<0.050	0.050	<0.050	0.050	A072815
2-Methylnaphthalene	ug/g	<0.020	0.020	<0.020	0.020	<0.020	0.020	A072815
Acenaphthylene	ug/g	<0.0050	0.0050	0.018	0.0050	0.0059	0.0050	A072815
Acenaphthene	ug/g	<0.0050	0.0050	0.080	0.0050	0.023	0.0050	A072815
Fluorene	ug/g	<0.020	0.020	0.067	0.020	0.033	0.020	A072815
Phenanthrene	ug/g	<0.010	0.010	0.31	0.010	0.12	0.010	A072815
Anthracene	ug/g	<0.0040	0.0040	0.14	0.0040	0.024	0.0040	A072815
Fluoranthene	ug/g	<0.020	0.020	0.60	0.020	0.11	0.020	A072815
Pyrene	ug/g	<0.020	0.020	0.54	0.020	0.096	0.020	A072815
Benzo(a)anthracene	ug/g	<0.020	0.020	0.22	0.020	0.040	0.020	A072815
Chrysene	ug/g	<0.020	0.020	0.26	0.020	0.053	0.020	A072815
Benzo(b&j)fluoranthene	ug/g	<0.020	0.020	0.27	0.020	0.058	0.020	A072815
Benzo(b)fluoranthene	ug/g	<0.020	0.020	0.17	0.020	0.037	0.020	A072815
Benzo(k)fluoranthene	ug/g	<0.020	0.020	0.096	0.020	<0.020	0.020	A072815
Benzo(a)pyrene	ug/g	<0.020	0.020	0.22	0.020	0.037	0.020	A072815
Indeno(1,2,3-cd)pyrene	ug/g	<0.020	0.020	0.095	0.020	0.028	0.020	A072815
Dibenz(a,h)anthracene	ug/g	<0.020	0.020	0.041	0.020	<0.020	0.020	A072815
Benzo(g,h,i)perylene	ug/g	<0.050	0.050	<0.25 (1)	0.25	<0.050	0.050	A072815

Calculated Parameters

LEPH (C10-C19 less PAH)	mg/kg	<100	100	<100	100	<100	100	A071474
HEPH (C19-C32 less PAH)	mg/kg	<100	100	430	100	120	100	A071474

RDL = Reportable Detection Limit

(1) Detection limits raised due to dilution as a result of sample matrix interference.



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8706		YS8711		YS8719		
Sampling Date		2020/10/26 12:00		2020/10/26 12:00		2020/10/26 16:00		
COC Number		623318-04-01		623318-04-01		617674-03-01		
	UNITS	MW20-12 (0.3)	RDL	MW20-13 (0.5)	RDL	BH20-14 (0.5)	RDL	QC Batch
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	100	<100	100	<100	100	A072820
EPH (C19-C32)	mg/kg	<100	100	440	100	120	100	A072820
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	84		86		83		A072815
D8-ACENAPHTHYLENE (sur.)	%	85		84		82		A072815
D8-NAPHTHALENE (sur.)	%	82		82		81		A072815
TERPHENYL-D14 (sur.)	%	80		86		82		A072815
O-TERPHENYL (sur.)	%	97		97		96		A072820
RDL = Reportable Detection Limit								

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Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8719			YS8722	YS8747		
Sampling Date		2020/10/26 16:00			2020/10/26 16:00	2020/10/26 13:00		
COC Number		617674-03-01			617674-03-01	617674-04-01		
	UNITS	BH20-14 (0.5) Lab-Dup	RDL	QC Batch	BH20-14 (4.0)	MW20-15 (7.5)	RDL	QC Batch

Calculated Parameters								
Index of Additive Cancer Risk(IACR)	N/A				0.40	0.50	0.10	A071716
Low Molecular Weight PAH's	ug/g				<0.050	0.071	0.050	A071204
High Molecular Weight PAH's	ug/g				0.18	0.29	0.050	A071204
Total PAH	ug/g				0.22	0.36	0.050	A071204
B[a]P TPE Total Potency Equivalents	ug/g				0.044	0.056	0.010	A071204
Polycyclic Aromatics								
Quinoline	ug/g	<0.050	0.050	A072815	<0.050	<0.050	0.050	A072815
Naphthalene	ug/g	0.015	0.010	A072815	<0.010	<0.010	0.010	A072815
1-Methylnaphthalene	ug/g	<0.050	0.050	A072815	<0.050	<0.050	0.050	A072815
2-Methylnaphthalene	ug/g	<0.020	0.020	A072815	<0.020	<0.020	0.020	A072815
Acenaphthylene	ug/g	0.0069	0.0050	A072815	0.0070	0.0075	0.0050	A072815
Acenaphthene	ug/g	0.022	0.0050	A072815	<0.0050	0.0088	0.0050	A072815
Fluorene	ug/g	0.031	0.020	A072815	<0.020	<0.020	0.020	A072815
Phenanthrene	ug/g	0.13	0.010	A072815	0.023	0.042	0.010	A072815
Anthracene	ug/g	0.030	0.0040	A072815	0.0078	0.013	0.0040	A072815
Fluoranthene	ug/g	0.13	0.020	A072815	0.038	0.068	0.020	A072815
Pyrene	ug/g	0.12	0.020	A072815	0.043	0.066	0.020	A072815
Benzo(a)anthracene	ug/g	0.050	0.020	A072815	0.023	0.030	0.020	A072815
Chrysene	ug/g	0.070	0.020	A072815	0.027	0.038	0.020	A072815
Benzo(b&j)fluoranthene	ug/g	0.073	0.020	A072815	0.021	0.028	0.020	A072815
Benzo(b)fluoranthene	ug/g	0.046	0.020	A072815	0.021	0.028	0.020	A072815
Benzo(k)fluoranthene	ug/g	0.024	0.020	A072815	<0.020	<0.020	0.020	A072815
Benzo(a)pyrene	ug/g	0.041	0.020	A072815	0.027	0.037	0.020	A072815
Indeno(1,2,3-cd)pyrene	ug/g	0.038	0.020	A072815	<0.020	0.025	0.020	A072815
Dibenz(a,h)anthracene	ug/g	<0.020	0.020	A072815	<0.020	<0.020	0.020	A072815
Benzo(g,h,i)perylene	ug/g	0.053	0.050	A072815	<0.050	<0.050	0.050	A072815
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg				<100	<100	100	A071474
HEPH (C19-C32 less PAH)	mg/kg				<100	110	100	A071474
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8719			YS8722	YS8747		
Sampling Date		2020/10/26 16:00			2020/10/26 16:00	2020/10/26 13:00		
COC Number		617674-03-01			617674-03-01	617674-04-01		
	UNITS	BH20-14 (0.5) Lab-Dup	RDL	QC Batch	BH20-14 (4.0)	MW20-15 (7.5)	RDL	QC Batch
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	100	A072820	<100	<100	100	A072820
EPH (C19-C32)	mg/kg	180	100	A072820	<100	110	100	A072820
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	84		A072815	81	81		A072815
D8-ACENAPHTHYLENE (sur.)	%	74		A072815	83	83		A072815
D8-NAPHTHALENE (sur.)	%	73		A072815	79	81		A072815
TERPHENYL-D14 (sur.)	%	81		A072815	79	81		A072815
O-TERPHENYL (sur.)	%	100		A072820	96	97		A072820
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								

**LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)**

BV Labs ID		YS8749		YS8751		YS8755		
Sampling Date		2020/10/26 13:00		2020/10/26 13:00		2020/10/23 08:00		
COC Number		617674-04-01		617674-04-01		617674-05-01		
	UNITS	BH20-16 (0.5)	RDL	BH20-16 (2.5)	RDL	BH20-B	RDL	QC Batch

Calculated Parameters

Index of Additive Cancer Risk(IACR)	N/A	2.1	0.10	0.41	0.10	1.8	0.10	A071716
Low Molecular Weight PAH's	ug/g	<0.050	0.050	<0.050	0.050	0.31	0.050	A071204
High Molecular Weight PAH's	ug/g	0.72	0.25	0.19	0.050	0.81	0.25	A071204
Total PAH	ug/g	0.72	0.25	0.22	0.050	1.1	0.25	A071204
B[a]P TPE Total Potency Equivalents	ug/g	0.17	0.010	0.047	0.010	0.15	0.010	A071204

Polycyclic Aromatics

Quinoline	ug/g	<0.050	0.050	<0.050	0.050	<0.050	0.050	A072815
Naphthalene	ug/g	<0.010	0.010	<0.010	0.010	<0.010	0.010	A072815
1-Methylnaphthalene	ug/g	<0.050	0.050	<0.050	0.050	0.054	0.050	A072815
2-Methylnaphthalene	ug/g	<0.020	0.020	<0.020	0.020	0.053	0.020	A072815
Acenaphthylene	ug/g	<0.0050	0.0050	<0.0050	0.0050	0.041	0.0050	A072815
Acenaphthene	ug/g	<0.0050	0.0050	<0.0050	0.0050	0.0094 (1)	0.0050	A072815
Fluorene	ug/g	<0.020	0.020	<0.020	0.020	0.030	0.020	A072815
Phenanthrene	ug/g	<0.010	0.010	0.021	0.010	0.097	0.010	A072815
Anthracene	ug/g	<0.0040	0.0040	0.0080	0.0040	0.025	0.0040	A072815
Fluoranthene	ug/g	<0.020	0.020	0.043	0.020	0.079	0.020	A072815
Pyrene	ug/g	0.039	0.020	0.044	0.020	0.15	0.020	A072815
Benzo(a)anthracene	ug/g	0.037	0.020	0.025	0.020	0.072	0.020	A072815
Chrysene	ug/g	0.24	0.020	0.028	0.020	0.17	0.020	A072815
Benzo(b&j)fluoranthene	ug/g	0.21	0.020	0.021	0.020	0.15	0.020	A072815
Benzo(b)fluoranthene	ug/g	0.17	0.020	0.021	0.020	0.10	0.020	A072815
Benzo(k)fluoranthene	ug/g	0.027	0.020	<0.020	0.020	0.038	0.020	A072815
Benzo(a)pyrene	ug/g	0.12	0.020	0.030	0.020	0.10	0.020	A072815
Indeno(1,2,3-cd)pyrene	ug/g	0.047	0.020	<0.020	0.020	0.052	0.020	A072815
Dibenz(a,h)anthracene	ug/g	<0.020	0.020	<0.020	0.020	<0.020	0.020	A072815
Benzo(g,h,i)perylene	ug/g	<0.25 (2)	0.25	<0.050	0.050	<0.25 (2)	0.25	A072815

Calculated Parameters

LEPH (C10-C19 less PAH)	mg/kg	<100	100	<100	100	130	100	A071474
HEPH (C19-C32 less PAH)	mg/kg	3200	100	<100	100	1000	100	A071474

RDL = Reportable Detection Limit

(1) Tentatively identified result and may be potentially biased high due to matrix interference.

(2) Detection limits raised due to dilution as a result of sample matrix interference.



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8749		YS8751		YS8755		
Sampling Date		2020/10/26 13:00		2020/10/26 13:00		2020/10/23 08:00		
COC Number		617674-04-01		617674-04-01		617674-05-01		
	UNITS	BH20-16 (0.5)	RDL	BH20-16 (2.5)	RDL	BH20-B	RDL	QC Batch
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	100	<100	100	130	100	A072820
EPH (C19-C32)	mg/kg	3200	100	<100	100	1000	100	A072820
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	82		81		80		A072815
D8-ACENAPHTHYLENE (sur.)	%	78		83		77		A072815
D8-NAPHTHALENE (sur.)	%	78		81		75		A072815
TERPHENYL-D14 (sur.)	%	80		80		79		A072815
O-TERPHENYL (sur.)	%	94		97		96		A072820
RDL = Reportable Detection Limit								

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VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)**

BV Labs ID		YS8759			YS8759		
Sampling Date		2020/10/26 08:00			2020/10/26 08:00		
COC Number		617674-05-01			617674-05-01		
	UNITS	MW20-F	RDL	QC Batch	MW20-F Lab-Dup	RDL	QC Batch

Calculated Parameters							
Index of Additive Cancer Risk(IACR)	N/A	4.4	0.10	A071716			
Low Molecular Weight PAH's	ug/g	0.56	0.050	A071204			
High Molecular Weight PAH's	ug/g	2.8	0.050	A071204			
Total PAH	ug/g	3.4	0.050	A071204			
B[a]P TPE Total Potency Equivalents	ug/g	0.39	0.010	A071204			
Polycyclic Aromatics							
Quinoline	ug/g	<0.050	0.050	A076622	<0.050	0.050	A076622
Naphthalene	ug/g	<0.010	0.010	A076622	<0.010	0.010	A076622
1-Methylnaphthalene	ug/g	<0.050	0.050	A076622	<0.050	0.050	A076622
2-Methylnaphthalene	ug/g	<0.020	0.020	A076622	<0.020	0.020	A076622
Acenaphthylene	ug/g	0.018	0.0050	A076622	0.022	0.0050	A076622
Acenaphthene	ug/g	0.079	0.0050	A076622	0.094	0.0050	A076622
Fluorene	ug/g	0.063	0.020	A076622	0.081	0.020	A076622
Phenanthrene	ug/g	0.29	0.010	A076622	0.32	0.010	A076622
Anthracene	ug/g	0.11	0.0040	A076622	0.12	0.0040	A076622
Fluoranthene	ug/g	0.64	0.020	A076622	0.69	0.020	A076622
Pyrene	ug/g	0.58	0.020	A076622	0.63	0.020	A076622
Benzo(a)anthracene	ug/g	0.24	0.020	A076622	0.25	0.020	A076622
Chrysene	ug/g	0.26	0.020	A076622	0.28	0.020	A076622
Benzo(b&j)fluoranthene	ug/g	0.29	0.020	A076622	0.31	0.020	A076622
Benzo(b)fluoranthene	ug/g	0.18	0.020	A076622	0.20	0.020	A076622
Benzo(k)fluoranthene	ug/g	0.11	0.020	A076622	0.11	0.020	A076622
Benzo(a)pyrene	ug/g	0.25	0.020	A076622	0.27	0.020	A076622
Indeno(1,2,3-cd)pyrene	ug/g	0.15	0.020	A076622	0.14	0.020	A076622
Dibenz(a,h)anthracene	ug/g	0.055	0.020	A076622	0.057	0.020	A076622
Benzo(g,h,i)perylene	ug/g	0.22	0.050	A076622	0.23	0.050	A076622
Calculated Parameters							
LEPH (C10-C19 less PAH)	mg/kg	<100	100	A071474			
HEPH (C19-C32 less PAH)	mg/kg	440	100	A071474			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate							



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)

BV Labs ID		YS8759			YS8759		
Sampling Date		2020/10/26 08:00			2020/10/26 08:00		
COC Number		617674-05-01			617674-05-01		
	UNITS	MW20-F	RDL	QC Batch	MW20-F Lab-Dup	RDL	QC Batch
Hydrocarbons							
EPH (C10-C19)	mg/kg	<100	100	A076633	<100	100	A076633
EPH (C19-C32)	mg/kg	440	100	A076633	540	100	A076633
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	78		A076622	79		A076622
D8-ACENAPHTHYLENE (sur.)	%	75		A076622	77		A076622
D8-NAPHTHALENE (sur.)	%	75		A076622	76		A076622
TERPHENYL-D14 (sur.)	%	80		A076622	80		A076622
O-TERPHENYL (sur.)	%	91		A076633	90		A076633
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							

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VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CSR/CCME METALS IN SOIL WITH HG (SOIL)

BV Labs ID		YS8622	YS8623			YS8623			YS8625		
Sampling Date		2020/10/23 12:00	2020/10/23 12:00			2020/10/23 12:00			2020/10/23 12:00		
COC Number		623318-05-01	623318-05-01			623318-05-01			623318-05-01		
	UNITS	BH20-1 (1.0)	BH20-1 (1.5)	RDL	QC Batch	BH20-1 (1.5) Lab-Dup	RDL	QC Batch	BH20-2 (0.3)	RDL	QC Batch

Physical Properties

Soluble (2:1) pH	pH	5.90	6.38	N/A	A077339				11.4	N/A	A077339
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Total Metals by ICPMS

Total Aluminum (Al)	mg/kg	10200	11800	100	A077338	12500	100	A077338	15800	100	A077338
Total Antimony (Sb)	mg/kg	0.27	0.17	0.10	A077338	0.16	0.10	A077338	0.41	0.10	A077338
Total Arsenic (As)	mg/kg	2.22	1.96	0.20	A077338	2.22	0.20	A077338	4.51	0.20	A077338
Total Barium (Ba)	mg/kg	64.7	54.9	0.10	A077338	58.2	0.10	A077338	156	0.10	A077338
Total Beryllium (Be)	mg/kg	0.22	<0.20	0.20	A077338	<0.20	0.20	A077338	0.32	0.20	A077338
Total Boron (B)	mg/kg	2.4	1.3	1.0	A077338	1.2	1.0	A077338	13.2	1.0	A077338
Total Cadmium (Cd)	mg/kg	0.160	0.069	0.050	A077338	0.059	0.050	A077338	0.127	0.050	A077338
Total Chromium (Cr)	mg/kg	20.6	16.7	0.50	A077338	17.2	0.50	A077338	24.1	0.50	A077338
Total Cobalt (Co)	mg/kg	6.33	5.06	0.10	A077338	5.44	0.10	A077338	7.70	0.10	A077338
Total Copper (Cu)	mg/kg	23.8	13.1	0.50	A077338	13.5	0.50	A077338	31.1	0.50	A077338
Total Iron (Fe)	mg/kg	17200	16000	100	A077338	16800	100	A077338	20500	100	A077338
Total Lead (Pb)	mg/kg	31.9	6.59	0.10	A077338	6.71	0.10	A077338	8.77	0.10	A077338
Total Lithium (Li)	mg/kg	6.68	4.92	0.50	A077338	5.33	0.50	A077338	8.31	0.50	A077338
Total Manganese (Mn)	mg/kg	326	265	0.20	A077338	291	0.20	A077338	380	0.20	A077338
Total Mercury (Hg)	mg/kg	0.061	<0.050	0.050	A077338	<0.050	0.050	A077338	<0.050	0.050	A077338
Total Molybdenum (Mo)	mg/kg	0.77	0.20	0.10	A077338	0.24	0.10	A077338	1.95	0.10	A077338
Total Nickel (Ni)	mg/kg	20.1	11.3	0.50	A077338	12.0	0.50	A077338	20.8	0.50	A077338
Total Selenium (Se)	mg/kg	<0.50	<0.50	0.50	A077338	<0.50	0.50	A077338	<0.50	0.50	A077338
Total Silver (Ag)	mg/kg	<0.050	<0.050	0.050	A077338	<0.050	0.050	A077338	0.058	0.050	A077338
Total Strontium (Sr)	mg/kg	33.5	32.8	0.10	A077338	30.3	0.10	A077338	142	0.10	A077338
Total Thallium (Tl)	mg/kg	0.076	<0.050	0.050	A077338	<0.050	0.050	A077338	0.081	0.050	A077338
Total Tin (Sn)	mg/kg	0.56	0.27	0.10	A077338	0.26	0.10	A077338	0.72	0.10	A077338
Total Titanium (Ti)	mg/kg	767	774	1.0	A077338	717	1.0	A077338	1120	1.0	A077338
Total Tungsten (W)	mg/kg	<0.50	<0.50	0.50	A077338	<0.50	0.50	A077338	1.04	0.50	A077338
Total Uranium (U)	mg/kg	0.663	0.306	0.050	A077338	0.298	0.050	A077338	0.913	0.050	A077338
Total Vanadium (V)	mg/kg	44.9	45.6	1.0	A077338	45.9	1.0	A077338	52.2	1.0	A077338
Total Zinc (Zn)	mg/kg	65.1	29.8	1.0	A077338	31.6	1.0	A077338	60.0	1.0	A077338

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



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BV Labs Job #: C078994

Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

CSR/CCME METALS IN SOIL WITH HG (SOIL)

BV Labs ID		YS8628		YS8634	YS8640	YS8646		
Sampling Date		2020/10/23 12:00		2020/10/23 10:00	2020/10/22 08:00	2020/10/23 09:00		
COC Number		623318-05-01		623318-02-01	623318-02-01	623318-01-01		
	UNITS	BH20-3 (0.5)	QC Batch	BH20-4 (0.5)	MW20-5 (2.5)	BH20-6 (1.5)	RDL	QC Batch

Physical Properties								
Soluble (2:1) pH	pH	8.74	A077339	8.52	8.42	7.45	N/A	A077733
Total Metals by ICPMS								
Total Aluminum (Al)	mg/kg	12800	A077338	7500	10400	13300	100	A077728
Total Antimony (Sb)	mg/kg	0.38	A077338	<0.10	0.25	0.17	0.10	A077728
Total Arsenic (As)	mg/kg	3.10	A077338	1.12	3.09	2.16	0.20	A077728
Total Barium (Ba)	mg/kg	69.3	A077338	27.8	46.4	65.7	0.10	A077728
Total Beryllium (Be)	mg/kg	<0.20	A077338	<0.20	<0.20	<0.20	0.20	A077728
Total Boron (B)	mg/kg	2.0	A077338	1.2	1.8	1.7	1.0	A077728
Total Cadmium (Cd)	mg/kg	0.120	A077338	<0.050	0.090	0.058	0.050	A077728
Total Chromium (Cr)	mg/kg	15.6	A077338	11.6	15.1	20.5	0.50	A077728
Total Cobalt (Co)	mg/kg	7.83	A077338	3.57	4.89	5.85	0.10	A077728
Total Copper (Cu)	mg/kg	25.0	A077338	8.96	15.0	13.9	0.50	A077728
Total Iron (Fe)	mg/kg	20900	A077338	14800	15800	17100	100	A077728
Total Lead (Pb)	mg/kg	13.6	A077338	1.46	6.50	3.04	0.10	A077728
Total Lithium (Li)	mg/kg	9.07	A077338	2.49	4.37	5.58	0.50	A077728
Total Manganese (Mn)	mg/kg	369	A077338	151	246	269	0.20	A077728
Total Mercury (Hg)	mg/kg	<0.050	A077338	<0.050	<0.050	<0.050	0.050	A077728
Total Molybdenum (Mo)	mg/kg	1.00	A077338	0.19	0.40	0.23	0.10	A077728
Total Nickel (Ni)	mg/kg	15.0	A077338	6.66	9.99	15.7	0.50	A077728
Total Selenium (Se)	mg/kg	<0.50	A077338	<0.50	<0.50	<0.50	0.50	A077728
Total Silver (Ag)	mg/kg	<0.050	A077338	0.206	0.182	0.319	0.050	A077728
Total Strontium (Sr)	mg/kg	33.7	A077338	36.7	34.6	36.0	0.10	A077728
Total Thallium (Tl)	mg/kg	0.051	A077338	<0.050	<0.050	<0.050	0.050	A077728
Total Tin (Sn)	mg/kg	0.39	A077338	0.20	0.37	0.32	0.10	A077728
Total Titanium (Ti)	mg/kg	939	A077338	657	690	898	1.0	A077728
Total Tungsten (W)	mg/kg	0.91	A077338	<0.50	<0.50	<0.50	0.50	A077728
Total Uranium (U)	mg/kg	0.421	A077338	0.234	0.595	0.356	0.050	A077728
Total Vanadium (V)	mg/kg	56.6	A077338	43.3	43.8	45.2	1.0	A077728
Total Zinc (Zn)	mg/kg	47.7	A077338	18.9	31.6	28.2	1.0	A077728
RDL = Reportable Detection Limit								
N/A = Not Applicable								

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VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CSR/CCME METALS IN SOIL WITH HG (SOIL)

BV Labs ID		YS8646			YS8652	YS8663	YS8667	YS8671		
Sampling Date		2020/10/23 09:00			2020/10/26 13:00	2020/10/26 15:00	2020/10/26 15:00	2020/10/26 15:00		
COC Number		623318-01-01			623318-01-01	623318-03-01	623318-03-01	623318-03-01		
	UNITS	BH20-6 (1.5) Lab-Dup	RDL	QC Batch	MW20-7 (3.5)	BH20-8 (1.5)	MW20-9 (2.5)	MW20-10 (0.5)	RDL	QC Batch

Physical Properties

Soluble (2:1) pH	pH				7.86	8.50	8.04	11.0	N/A	A077733
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Total Metals by ICPMS

Total Aluminum (Al)	mg/kg	13700	100	A077728	11600	14400	15200	18100	100	A077728
Total Antimony (Sb)	mg/kg	0.17	0.10	A077728	1.19	1.38	0.31	1.58	0.10	A077728
Total Arsenic (As)	mg/kg	2.25	0.20	A077728	5.85	4.69	2.88	4.40	0.20	A077728
Total Barium (Ba)	mg/kg	67.5	0.10	A077728	81.2	82.3	68.2	239	0.10	A077728
Total Beryllium (Be)	mg/kg	<0.20	0.20	A077728	<0.20	<0.20	<0.20	0.25	0.20	A077728
Total Boron (B)	mg/kg	1.7	1.0	A077728	3.2	4.3	2.0	6.6	1.0	A077728
Total Cadmium (Cd)	mg/kg	0.063	0.050	A077728	0.198	0.251	0.079	0.120	0.050	A077728
Total Chromium (Cr)	mg/kg	21.1	0.50	A077728	29.8	26.1	20.5	43.7	0.50	A077728
Total Cobalt (Co)	mg/kg	6.03	0.10	A077728	8.82	7.24	6.88	11.0	0.10	A077728
Total Copper (Cu)	mg/kg	14.2	0.50	A077728	25.1	31.6	17.1	33.9	0.50	A077728
Total Iron (Fe)	mg/kg	17500	100	A077728	20900	18800	19900	25000	100	A077728
Total Lead (Pb)	mg/kg	3.02	0.10	A077728	19.2	31.8	5.89	10.7	0.10	A077728
Total Lithium (Li)	mg/kg	5.75	0.50	A077728	9.60	6.94	7.39	8.90	0.50	A077728
Total Manganese (Mn)	mg/kg	274	0.20	A077728	388	334	339	450	0.20	A077728
Total Mercury (Hg)	mg/kg	<0.050	0.050	A077728	<0.050	0.057	<0.050	<0.050	0.050	A077728
Total Molybdenum (Mo)	mg/kg	0.25	0.10	A077728	0.70	1.07	0.44	1.55	0.10	A077728
Total Nickel (Ni)	mg/kg	16.1	0.50	A077728	32.1	16.4	16.4	32.3	0.50	A077728
Total Selenium (Se)	mg/kg	<0.50	0.50	A077728	<0.50	<0.50	<0.50	<0.50	0.50	A077728
Total Silver (Ag)	mg/kg	0.265	0.050	A077728	0.181	0.170	0.086	0.130	0.050	A077728
Total Strontium (Sr)	mg/kg	37.1	0.10	A077728	37.6	54.9	40.5	139	0.10	A077728
Total Thallium (Tl)	mg/kg	0.052	0.050	A077728	0.064	0.060	0.057	0.059	0.050	A077728
Total Tin (Sn)	mg/kg	0.33	0.10	A077728	1.94	2.68	0.45	1.30	0.10	A077728
Total Titanium (Ti)	mg/kg	923	1.0	A077728	813	817	851	934	1.0	A077728
Total Tungsten (W)	mg/kg	<0.50	0.50	A077728	<0.50	<0.50	<0.50	<0.50	0.50	A077728
Total Uranium (U)	mg/kg	0.343	0.050	A077728	0.554	0.635	0.402	0.568	0.050	A077728
Total Vanadium (V)	mg/kg	46.3	1.0	A077728	47.1	45.6	50.0	67.2	1.0	A077728
Total Zinc (Zn)	mg/kg	28.8	1.0	A077728	87.8	106	44.1	73.6	1.0	A077728

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CSR/CCME METALS IN SOIL WITH HG (SOIL)

BV Labs ID		YS8702	YS8704			YS8704		YS8706		
Sampling Date		2020/10/26 12:00	2020/10/26 12:00			2020/10/26 12:00		2020/10/26 12:00		
COC Number		623318-04-01	623318-04-01			623318-04-01		623318-04-01		
	UNITS	MW20-10 (2.5)	MW20-11 (0.5)	RDL	QC Batch	MW20-11 (0.5) Lab-Dup	QC Batch	MW20-12 (0.3)	RDL	QC Batch

Physical Properties										
Soluble (2:1) pH	pH	8.01	8.85	N/A	A077733	8.87	A077733	6.95	N/A	A077733
Total Metals by ICPMS										
Total Aluminum (Al)	mg/kg	19800	9130	100	A077728			8930	100	A077728
Total Antimony (Sb)	mg/kg	0.41	0.45	0.10	A077728			0.22	0.10	A077728
Total Arsenic (As)	mg/kg	3.78	2.54	0.20	A077728			1.97	0.20	A077728
Total Barium (Ba)	mg/kg	94.4	53.0	0.10	A077728			44.6	0.10	A077728
Total Beryllium (Be)	mg/kg	<0.20	<0.20	0.20	A077728			<0.20	0.20	A077728
Total Boron (B)	mg/kg	3.1	2.9	1.0	A077728			2.7	1.0	A077728
Total Cadmium (Cd)	mg/kg	0.139	0.098	0.050	A077728			0.106	0.050	A077728
Total Chromium (Cr)	mg/kg	24.2	32.5	0.50	A077728			29.4	0.50	A077728
Total Cobalt (Co)	mg/kg	7.67	8.46	0.10	A077728			7.69	0.10	A077728
Total Copper (Cu)	mg/kg	24.7	16.2	0.50	A077728			15.1	0.50	A077728
Total Iron (Fe)	mg/kg	21000	20200	100	A077728			17200	100	A077728
Total Lead (Pb)	mg/kg	11.3	3.76	0.10	A077728			2.41	0.10	A077728
Total Lithium (Li)	mg/kg	8.31	8.39	0.50	A077728			7.72	0.50	A077728
Total Manganese (Mn)	mg/kg	353	273	0.20	A077728			273	0.20	A077728
Total Mercury (Hg)	mg/kg	<0.050	<0.050	0.050	A077728			<0.050	0.050	A077728
Total Molybdenum (Mo)	mg/kg	0.50	0.49	0.10	A077728			0.42	0.10	A077728
Total Nickel (Ni)	mg/kg	17.6	37.3	0.50	A077728			33.7	0.50	A077728
Total Selenium (Se)	mg/kg	<0.50	<0.50	0.50	A077728			<0.50	0.50	A077728
Total Silver (Ag)	mg/kg	0.099	0.056	0.050	A077728			<0.050	0.050	A077728
Total Strontium (Sr)	mg/kg	40.7	26.6	0.10	A077728			22.1	0.10	A077728
Total Thallium (Tl)	mg/kg	0.069	<0.050	0.050	A077728			<0.050	0.050	A077728
Total Tin (Sn)	mg/kg	1.03	0.25	0.10	A077728			0.21	0.10	A077728
Total Titanium (Ti)	mg/kg	1000	819	1.0	A077728			825	1.0	A077728
Total Tungsten (W)	mg/kg	<0.50	<0.50	0.50	A077728			<0.50	0.50	A077728
Total Uranium (U)	mg/kg	0.477	0.325	0.050	A077728			0.285	0.050	A077728
Total Vanadium (V)	mg/kg	53.8	45.9	1.0	A077728			42.6	1.0	A077728
Total Zinc (Zn)	mg/kg	67.7	40.9	1.0	A077728			38.6	1.0	A077728

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CSR/CCME METALS IN SOIL WITH HG (SOIL)

BV Labs ID		YS8711	YS8719	YS8722	YS8747	YS8749	YS8751		
Sampling Date		2020/10/26 12:00	2020/10/26 16:00	2020/10/26 16:00	2020/10/26 13:00	2020/10/26 13:00	2020/10/26 13:00		
COC Number		623318-04-01	617674-03-01	617674-03-01	617674-04-01	617674-04-01	617674-04-01		
	UNITS	MW20-13 (0.5)	BH20-14 (0.5)	BH20-14 (4.0)	MW20-15 (7.5)	BH20-16 (0.5)	BH20-16 (2.5)	RDL	QC Batch

Physical Properties									
Soluble (2:1) pH	pH	8.50	10.9	8.09	7.93	6.72	7.85	N/A	A077728
Total Metals by ICPMS									
Total Aluminum (Al)	mg/kg	14300	13400	15100	18500	11400	14400	100	A077728
Total Antimony (Sb)	mg/kg	2.69	3.29	0.29	2.08	<0.10	0.24	0.10	A077728
Total Arsenic (As)	mg/kg	6.17	8.84	2.75	4.42	1.25	2.17	0.20	A077728
Total Barium (Ba)	mg/kg	108	94.4	78.2	90.6	64.5	72.6	0.10	A077728
Total Beryllium (Be)	mg/kg	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A077728
Total Boron (B)	mg/kg	6.2	7.8	1.8	2.2	1.8	1.9	1.0	A077728
Total Cadmium (Cd)	mg/kg	0.149	0.107	0.079	0.115	<0.050	0.078	0.050	A077728
Total Chromium (Cr)	mg/kg	22.3	22.8	21.9	23.0	11.7	18.8	0.50	A077728
Total Cobalt (Co)	mg/kg	7.26	6.42	7.37	8.48	5.52	6.94	0.10	A077728
Total Copper (Cu)	mg/kg	31.6	35.1	21.1	30.6	7.41	19.0	0.50	A077728
Total Iron (Fe)	mg/kg	18700	18400	21200	22700	18300	19300	100	A077728
Total Lead (Pb)	mg/kg	16.0	12.6	4.72	17.0	2.09	5.12	0.10	A077728
Total Lithium (Li)	mg/kg	7.09	6.47	7.19	7.69	2.67	6.46	0.50	A077728
Total Manganese (Mn)	mg/kg	365	319	405	477	374	343	0.20	A077728
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A077728
Total Molybdenum (Mo)	mg/kg	3.51	1.29	0.50	0.79	2.05	0.57	0.10	A077728
Total Nickel (Ni)	mg/kg	14.4	15.7	16.7	16.2	10.6	12.8	0.50	A077728
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A077728
Total Silver (Ag)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A077728
Total Strontium (Sr)	mg/kg	127	101	41.9	50.8	42.1	39.9	0.10	A077728
Total Thallium (Tl)	mg/kg	<0.050	<0.050	0.065	0.059	<0.050	0.053	0.050	A077728
Total Tin (Sn)	mg/kg	1.92	2.49	0.40	8.74	0.43	0.76	0.10	A077728
Total Titanium (Ti)	mg/kg	835	861	929	1050	753	851	1.0	A077728
Total Tungsten (W)	mg/kg	0.50	0.78	<0.50	<0.50	0.70	<0.50	0.50	A077728
Total Uranium (U)	mg/kg	0.607	0.576	0.379	0.655	0.476	0.458	0.050	A077728
Total Vanadium (V)	mg/kg	46.3	47.1	52.3	59.4	52.7	49.7	1.0	A077728
Total Zinc (Zn)	mg/kg	88.3	94.1	39.8	63.6	26.1	41.7	1.0	A077728

RDL = Reportable Detection Limit

N/A = Not Applicable

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**CSR/CCME METALS IN SOIL WITH HG (SOIL)**

BV Labs ID		YS8755	YS8759		
Sampling Date		2020/10/23 08:00	2020/10/26 08:00		
COC Number		617674-05-01	617674-05-01		
	UNITS	BH20-B	MW20-F	RDL	QC Batch

Physical Properties					
Soluble (2:1) pH	pH	8.74	8.53	N/A	A077728
Total Metals by ICPMS					
Total Aluminum (Al)	mg/kg	13400	14300	100	A077728
Total Antimony (Sb)	mg/kg	0.31	1.93	0.10	A077728
Total Arsenic (As)	mg/kg	2.85	13.4	0.20	A077728
Total Barium (Ba)	mg/kg	65.2	95.1	0.10	A077728
Total Beryllium (Be)	mg/kg	<0.20	<0.20	0.20	A077728
Total Boron (B)	mg/kg	1.9	5.3	1.0	A077728
Total Cadmium (Cd)	mg/kg	0.092	0.110	0.050	A077728
Total Chromium (Cr)	mg/kg	18.3	17.6	0.50	A077728
Total Cobalt (Co)	mg/kg	7.91	6.98	0.10	A077728
Total Copper (Cu)	mg/kg	23.4	24.2	0.50	A077728
Total Iron (Fe)	mg/kg	21100	18500	100	A077728
Total Lead (Pb)	mg/kg	16.1	13.3	0.10	A077728
Total Lithium (Li)	mg/kg	8.45	6.90	0.50	A077728
Total Manganese (Mn)	mg/kg	342	366	0.20	A077728
Total Mercury (Hg)	mg/kg	<0.050	<0.050	0.050	A077728
Total Molybdenum (Mo)	mg/kg	1.09	3.71	0.10	A077728
Total Nickel (Ni)	mg/kg	16.2	13.1	0.50	A077728
Total Selenium (Se)	mg/kg	<0.50	<0.50	0.50	A077728
Total Silver (Ag)	mg/kg	<0.050	<0.050	0.050	A077728
Total Strontium (Sr)	mg/kg	35.8	104	0.10	A077728
Total Thallium (Tl)	mg/kg	<0.050	<0.050	0.050	A077728
Total Tin (Sn)	mg/kg	0.44	1.38	0.10	A077728
Total Titanium (Ti)	mg/kg	1040	719	1.0	A077728
Total Tungsten (W)	mg/kg	1.12	0.56	0.50	A077728
Total Uranium (U)	mg/kg	0.395	0.562	0.050	A077728
Total Vanadium (V)	mg/kg	59.6	43.1	1.0	A077728
Total Zinc (Zn)	mg/kg	45.2	71.8	1.0	A077728
RDL = Reportable Detection Limit					
N/A = Not Applicable					



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BV Labs Job #: C078994

Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

CCME&CSR VOC/F1/VPH/KETONES - FIELD PRE. (SOIL)

BV Labs ID		YS8634	YS8646	YS8663		YS8671		
Sampling Date		2020/10/23 10:00	2020/10/23 09:00	2020/10/26 15:00		2020/10/26 15:00		
COC Number		623318-02-01	623318-01-01	623318-03-01		623318-03-01		
	UNITS	BH20-4 (0.5)	BH20-6 (1.5)	BH20-8 (1.5)	QC Batch	MW20-10 (0.5)	RDL	QC Batch
Calculated Parameters								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	A071377	<10	10	A071377
Volatiles								
F1 (C6-C10)	mg/kg	<10	<10	<10	A072969	<10	10	A076120
VH C6-C10	mg/kg	<10	<10	<10	A072969	<10	10	A076120
1,1,1,2-tetrachloroethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,1,2,2-tetrachloroethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,1,2Trichloro-1,2,2Trifluoroethane	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,1-dichloroethane	mg/kg	<0.025	<0.025	<0.025	A072969	<0.025	0.025	A076120
1,1-dichloroethene	mg/kg	<0.025	<0.025	<0.025	A072969	<0.025	0.025	A076120
1,2,3-trichlorobenzene	mg/kg	<0.030	<0.030	<0.030	A072969	<0.030	0.030	A076120
1,2,4-trichlorobenzene	mg/kg	<0.030	<0.030	<0.030	A072969	<0.030	0.030	A076120
1,2,4-trimethylbenzene	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
1,2-dibromoethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,2-dichloroethane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,3,5-trimethylbenzene	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
1,3-Butadiene	mg/kg	<0.080	<0.080	<0.080	A072969	<0.080	0.080	A076120
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
2-Butanone (MEK)	mg/kg	<15	<15	<15	A072969	<15	15	A076120
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.50	<0.50	<0.50	A072969	<0.50	0.50	A076120
Acetone	mg/kg	<5.0	<5.0	<5.0	A072969	<5.0	5.0	A076120
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	A072969	0.016	0.0050	A076120
Bromobenzene	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Bromodichloromethane	mg/kg	<0.050	<0.050	<0.050	A072969	<0.050	0.050	A076120
Bromoform	mg/kg	<0.050	<0.050	<0.050	A072969	<0.050	0.050	A076120
Bromomethane	mg/kg	<0.30	<0.30	<0.30	A072969	<0.30	0.30	A076120
Carbon tetrachloride	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
Chlorobenzene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
RDL = Reportable Detection Limit								



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BV Labs Job #: C078994

Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

CCME&CSR VOC/F1/VPH/KETONES - FIELD PRE. (SOIL)

BV Labs ID		YS8634	YS8646	YS8663		YS8671		
Sampling Date		2020/10/23 10:00	2020/10/23 09:00	2020/10/26 15:00		2020/10/26 15:00		
COC Number		623318-02-01	623318-01-01	623318-03-01		623318-03-01		
	UNITS	BH20-4 (0.5)	BH20-6 (1.5)	BH20-8 (1.5)	QC Batch	MW20-10 (0.5)	RDL	QC Batch
Chlorodibromomethane	mg/kg	<0.050	<0.050	<0.050	A072969	<0.050	0.050	A076120
Chloroethane	mg/kg	<0.10	<0.10	<0.10	A072969	<0.10	0.10	A076120
Chloroform	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
Chloromethane	mg/kg	<0.050	<0.050	<0.050	A072969	<0.050	0.050	A076120
cis-1,2-dichloroethene	mg/kg	<0.030	<0.030	<0.030	A072969	<0.030	0.030	A076120
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
Dichlorodifluoromethane	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Dichloromethane	mg/kg	<0.080	<0.080	<0.080	A072969	<0.080	0.080	A076120
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	A072969	0.041	0.010	A076120
Hexachlorobutadiene	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Isopropylbenzene	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Methylcyclohexane	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	A072969	<0.10	0.10	A076120
n-Decane	mg/kg	<2.0	<2.0	<2.0	A072969	<2.0	2.0	A076120
Styrene	mg/kg	<0.030	<0.030	<0.030	A072969	<0.030	0.030	A076120
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	A072969	<0.010	0.010	A076120
Toluene	mg/kg	<0.050	<0.050	<0.050	A072969	<0.050	0.050	A076120
trans-1,2-dichloroethene	mg/kg	<0.030	<0.030	<0.030	A072969	<0.030	0.030	A076120
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	A072969	<0.020	0.020	A076120
Trichloroethene	mg/kg	<0.0090	<0.0090	<0.0090	A072969	<0.0090	0.0090	A076120
Trichlorofluoromethane	mg/kg	<0.20	<0.20	<0.20	A072969	<0.20	0.20	A076120
Vinyl chloride	mg/kg	<0.040	<0.040	<0.040	A072969	<0.040	0.040	A076120
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	A072969	0.14	0.040	A076120
o-Xylene	mg/kg	<0.040	<0.040	<0.040	A072969	0.070	0.040	A076120
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	A072969	0.21	0.040	A076120
Calculated Parameters								
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	A071369	<10	10	A071369
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	100	98	A072969	99		A076120
4-Bromofluorobenzene (sur.)	%	85	87	84	A072969	100		A076120
D10-o-Xylene (sur.)	%	91	87	87	A072969	113		A076120
D4-1,2-Dichloroethane (sur.)	%	94	94	92	A072969	107		A076120
RDL = Reportable Detection Limit								

BUREAU
VERITASBV Labs Job #: C078994
Report Date: 2020/11/10KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM**CCME&CSR VOC/F1/VPH/KETONES - FIELD PRE. (SOIL)**

BV Labs ID		YS8704	YS8706		YS8719		YS8749		
Sampling Date		2020/10/26 12:00	2020/10/26 12:00		2020/10/26 16:00		2020/10/26 13:00		
COC Number		623318-04-01	623318-04-01		617674-03-01		617674-04-01		
	UNITS	MW20-11 (0.5)	MW20-12 (0.3)	QC Batch	BH20-14 (0.5)	QC Batch	BH20-16 (0.5)	RDL	QC Batch
Calculated Parameters									
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	A071377	<10	A071377	<10	10	A071377
Volatiles									
F1 (C6-C10)	mg/kg	<10	<10	A076120	<10	A072969	<10	10	A076120
VH C6-C10	mg/kg	<10	<10	A076120	<10	A072969	<10	10	A076120
1,1,1,2-tetrachloroethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,1,2,2-tetrachloroethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,1,2Trichloro-1,2,2Trifluoroethane	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,1-dichloroethane	mg/kg	<0.025	<0.025	A076120	<0.025	A072969	<0.025	0.025	A076120
1,1-dichloroethene	mg/kg	<0.025	<0.025	A076120	<0.025	A072969	<0.025	0.025	A076120
1,2,3-trichlorobenzene	mg/kg	<0.030	<0.030	A076120	<0.030	A072969	<0.030	0.030	A076120
1,2,4-trichlorobenzene	mg/kg	<0.030	<0.030	A076120	<0.030	A072969	<0.030	0.030	A076120
1,2,4-trimethylbenzene	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
1,2-dibromoethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,2-dichloroethane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,2-dichloropropane	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,3,5-trimethylbenzene	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
1,3-Butadiene	mg/kg	<0.080	<0.080	A076120	<0.080	A072969	<0.080	0.080	A076120
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
2-Butanone (MEK)	mg/kg	<15	<15	A076120	<15	A072969	<15	15	A076120
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.50	<0.50	A076120	<0.50	A072969	<0.50	0.50	A076120
Acetone	mg/kg	<5.0	<5.0	A076120	<5.0	A072969	<5.0	5.0	A076120
Benzene	mg/kg	<0.0050	<0.0050	A076120	<0.0050	A072969	<0.0050	0.0050	A076120
Bromobenzene	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Bromodichloromethane	mg/kg	<0.050	<0.050	A076120	<0.050	A072969	<0.050	0.050	A076120
Bromoform	mg/kg	<0.050	<0.050	A076120	<0.050	A072969	<0.050	0.050	A076120
Bromomethane	mg/kg	<0.30	<0.30	A076120	<0.30	A072969	<0.30	0.30	A076120
Carbon tetrachloride	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
Chlorobenzene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
RDL = Reportable Detection Limit									



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

CCME&CSR VOC/F1/VPH/KETONES - FIELD PRE. (SOIL)

BV Labs ID		YS8704	YS8706		YS8719		YS8749		
Sampling Date		2020/10/26 12:00	2020/10/26 12:00		2020/10/26 16:00		2020/10/26 13:00		
COC Number		623318-04-01	623318-04-01		617674-03-01		617674-04-01		
	UNITS	MW20-11 (0.5)	MW20-12 (0.3)	QC Batch	BH20-14 (0.5)	QC Batch	BH20-16 (0.5)	RDL	QC Batch
Chlorodibromomethane	mg/kg	<0.050	<0.050	A076120	<0.050	A072969	<0.050	0.050	A076120
Chloroethane	mg/kg	<0.10	<0.10	A076120	<0.10	A072969	<0.10	0.10	A076120
Chloroform	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
Chloromethane	mg/kg	<0.050	<0.050	A076120	<0.050	A072969	<0.050	0.050	A076120
cis-1,2-dichloroethene	mg/kg	<0.030	<0.030	A076120	<0.030	A072969	<0.030	0.030	A076120
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
Dichlorodifluoromethane	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Dichloromethane	mg/kg	<0.080	<0.080	A076120	<0.080	A072969	<0.080	0.080	A076120
Ethylbenzene	mg/kg	<0.010	<0.010	A076120	<0.010	A072969	<0.010	0.010	A076120
Hexachlorobutadiene	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Isopropylbenzene	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Methylcyclohexane	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	A076120	<0.10	A072969	<0.10	0.10	A076120
n-Decane	mg/kg	<2.0	<2.0	A076120	<2.0	A072969	<2.0	2.0	A076120
Styrene	mg/kg	<0.030	<0.030	A076120	<0.030	A072969	<0.030	0.030	A076120
Tetrachloroethene	mg/kg	<0.010	<0.010	A076120	<0.010	A072969	<0.010	0.010	A076120
Toluene	mg/kg	<0.050	<0.050	A076120	<0.050	A072969	<0.050	0.050	A076120
trans-1,2-dichloroethene	mg/kg	<0.030	<0.030	A076120	<0.030	A072969	<0.030	0.030	A076120
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	A076120	<0.020	A072969	<0.020	0.020	A076120
Trichloroethene	mg/kg	<0.0090	<0.0090	A076120	<0.0090	A072969	<0.0090	0.0090	A076120
Trichlorofluoromethane	mg/kg	<0.20	<0.20	A076120	<0.20	A072969	<0.20	0.20	A076120
Vinyl chloride	mg/kg	<0.040	<0.040	A076120	<0.040	A072969	<0.040	0.040	A076120
m & p-Xylene	mg/kg	<0.040	<0.040	A076120	<0.040	A072969	<0.040	0.040	A076120
o-Xylene	mg/kg	<0.040	<0.040	A076120	<0.040	A072969	<0.040	0.040	A076120
Xylenes (Total)	mg/kg	<0.040	<0.040	A076120	<0.040	A072969	<0.040	0.040	A076120
Calculated Parameters									
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A071369	<10	A071369	<10	10	A071369
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	100	100	A076120	99	A072969	100		A076120
4-Bromofluorobenzene (sur.)	%	95	94	A076120	84	A072969	91		A076120
D10-o-Xylene (sur.)	%	98	104	A076120	90	A072969	89		A076120
D4-1,2-Dichloroethane (sur.)	%	107	104	A076120	94	A072969	107		A076120
RDL = Reportable Detection Limit									



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C
Package 2	14.0°C

Sample YS8622 [BH20-1 (1.0)] : Sample analyzed past method specified hold time for EPH in Soil by SG GC/FID. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



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BV Labs Job #: C078994

Report Date: 2020/11/10

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A072703	1,4-Difluorobenzene (sur.)	2020/10/30	105	70 - 130	127	70 - 130	99	%				
A072703	4-Bromofluorobenzene (sur.)	2020/10/30	91	70 - 130	108	70 - 130	97	%				
A072703	D10-o-Xylene (sur.)	2020/10/30	93	60 - 130	81	60 - 130	90	%				
A072703	D4-1,2-Dichloroethane (sur.)	2020/10/30	89	70 - 130	122	70 - 130	95	%				
A072712	1,4-Difluorobenzene (sur.)	2020/10/30	108	70 - 130	102	70 - 130	119	%				
A072712	4-Bromofluorobenzene (sur.)	2020/10/30	107	70 - 130	98	70 - 130	98	%				
A072712	D10-o-Xylene (sur.)	2020/10/30	113	60 - 130	86	60 - 130	95	%				
A072712	D4-1,2-Dichloroethane (sur.)	2020/10/30	97	70 - 130	90	70 - 130	118	%				
A072815	D10-ANTHRACENE (sur.)	2020/10/30	80	50 - 140	80	50 - 140	95	%				
A072815	D8-ACENAPHTHYLENE (sur.)	2020/10/30	76	50 - 140	80	50 - 140	96	%				
A072815	D8-NAPHTHALENE (sur.)	2020/10/30	75	50 - 140	82	50 - 140	98	%				
A072815	TERPHENYL-D14 (sur.)	2020/10/30	78	50 - 140	76	50 - 140	90	%				
A072820	O-TERPHENYL (sur.)	2020/10/30	90	60 - 140	93	60 - 140	103	%				
A072827	O-TERPHENYL (sur.)	2020/10/30	90	50 - 130	92	50 - 130	100	%				
A072969	1,4-Difluorobenzene (sur.)	2020/10/31	102	50 - 140	100	50 - 140	99	%				
A072969	4-Bromofluorobenzene (sur.)	2020/10/31	102	50 - 140	99	50 - 140	93	%				
A072969	D10-o-Xylene (sur.)	2020/10/31	111	50 - 140	95	50 - 140	103	%				
A072969	D4-1,2-Dichloroethane (sur.)	2020/10/31	127	50 - 140	130	50 - 140	105	%				
A073678	D10-ANTHRACENE (sur.)	2020/10/31	88	50 - 140	96	50 - 140	89	%				
A073678	D8-ACENAPHTHYLENE (sur.)	2020/10/31	88	50 - 140	95	50 - 140	88	%				
A073678	D8-NAPHTHALENE (sur.)	2020/10/31	90	50 - 140	96	50 - 140	90	%				
A073678	TERPHENYL-D14 (sur.)	2020/10/31	93	50 - 140	100	50 - 140	93	%				
A073686	O-TERPHENYL (sur.)	2020/11/02	88	60 - 140	87	60 - 140	88	%				
A074519	Extractable (Water) Methyl Sulfone (sur.)	2020/11/02	87	50 - 140	92	50 - 140	91	%				
A075326	2,4,6-TRIBROMOPHENOL (sur.)	2020/11/03	91	50 - 140	90	50 - 140	90	%				
A075326	2,4-DIBROMOPHENOL (sur.)	2020/11/03	94	50 - 140	91	50 - 140	91	%				
A076041	1,4-Difluorobenzene (sur.)	2020/11/03	101	70 - 130	101	70 - 130	101	%				
A076041	4-Bromofluorobenzene (sur.)	2020/11/03	109	70 - 130	109	70 - 130	105	%				
A076041	D10-o-Xylene (sur.)	2020/11/03	128	60 - 130	110	60 - 130	108	%				
A076041	D4-1,2-Dichloroethane (sur.)	2020/11/03	122	70 - 130	115	70 - 130	117	%				
A076120	1,4-Difluorobenzene (sur.)	2020/11/03	101	50 - 140	101	50 - 140	100	%				
A076120	4-Bromofluorobenzene (sur.)	2020/11/03	102	50 - 140	104	50 - 140	94	%				



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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A076120	D10-o-Xylene (sur.)	2020/11/03	98	50 - 140	87	50 - 140	94	%				
A076120	D4-1,2-Dichloroethane (sur.)	2020/11/03	126	50 - 140	122	50 - 140	103	%				
A076622	D10-ANTHRACENE (sur.)	2020/11/03	80	50 - 140	88	50 - 140	90	%				
A076622	D8-ACENAPHTHYLENE (sur.)	2020/11/03	79	50 - 140	88	50 - 140	89	%				
A076622	D8-NAPHTHALENE (sur.)	2020/11/03	77	50 - 140	89	50 - 140	89	%				
A076622	TERPHENYL-D14 (sur.)	2020/11/03	82	50 - 140	93	50 - 140	94	%				
A076629	O-TERPHENYL (sur.)	2020/11/03	101	50 - 130	96	50 - 130	94	%				
A076633	O-TERPHENYL (sur.)	2020/11/04	87	60 - 140	87	60 - 140	91	%				
A082839	SG O-TERPHENYL (sur.)	2020/11/10			83	50 - 130	78	%				
A072638	Moisture	2020/10/31					<0.30	%	4.3	20		
A072703	Benzene	2020/10/30	98	60 - 140	118	70 - 130	<0.0050	mg/kg	NC	40		
A072703	Ethylbenzene	2020/10/30	96	60 - 140	90	70 - 130	<0.010	mg/kg	NC	40		
A072703	F1 (C6-C10)	2020/10/30			85	70 - 130	<10	mg/kg	NC	40		
A072703	m & p-Xylene	2020/10/30	96	60 - 140	93	70 - 130	<0.040	mg/kg	NC	40		
A072703	Methyl-tert-butylether (MTBE)	2020/10/30	96	60 - 140	107	70 - 130	<0.10	mg/kg	NC	40		
A072703	o-Xylene	2020/10/30	93	60 - 140	95	70 - 130	<0.040	mg/kg	NC	40		
A072703	Styrene	2020/10/30	98	60 - 140	100	70 - 130	<0.030	mg/kg	NC	40		
A072703	Toluene	2020/10/30	104	60 - 140	95	70 - 130	<0.050	mg/kg	NC	40		
A072703	Xylenes (Total)	2020/10/30					<0.040	mg/kg	NC	40		
A072712	Benzene	2020/10/30	93	60 - 140	95	70 - 130	<0.0050	mg/kg	NC	40		
A072712	Ethylbenzene	2020/10/30	98	60 - 140	97	70 - 130	<0.010	mg/kg	NC	40		
A072712	F1 (C6-C10)	2020/10/30			83	70 - 130	<10	mg/kg	NC	40		
A072712	m & p-Xylene	2020/10/30	100	60 - 140	99	70 - 130	<0.040	mg/kg	NC	40		
A072712	Methyl-tert-butylether (MTBE)	2020/10/30	91	60 - 140	94	70 - 130	<0.10	mg/kg	NC	40		
A072712	o-Xylene	2020/10/30	103	60 - 140	98	70 - 130	<0.040	mg/kg	NC	40		
A072712	Styrene	2020/10/30	104	60 - 140	103	70 - 130	<0.030	mg/kg	NC	40		
A072712	Toluene	2020/10/30	97	60 - 140	97	70 - 130	<0.050	mg/kg	NC	40		
A072712	Xylenes (Total)	2020/10/30					<0.040	mg/kg	NC	40		
A072737	Moisture	2020/10/31					<0.30	%	6.3	20		
A072773	Moisture	2020/10/31					<0.30	%	2.1	20		
A072815	1-Methylnaphthalene	2020/10/31	72	50 - 140	80	50 - 140	<0.050	ug/g	NC	50		
A072815	2-Methylnaphthalene	2020/10/31	72	50 - 140	80	50 - 140	<0.020	ug/g	NC	50		

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A072815	Acenaphthene	2020/10/31	73	50 - 140	79	50 - 140	<0.0050	ug/g	4.4	50		
A072815	Acenaphthylene	2020/10/31	70	50 - 140	76	50 - 140	<0.0050	ug/g	15	50		
A072815	Anthracene	2020/10/31	77	50 - 140	78	50 - 140	<0.0040	ug/g	23	50		
A072815	Benzo(a)anthracene	2020/10/31	79	50 - 140	78	50 - 140	<0.020	ug/g	22	50		
A072815	Benzo(a)pyrene	2020/10/31	70	50 - 140	73	50 - 140	<0.020	ug/g	9.6	50		
A072815	Benzo(b&j)fluoranthene	2020/10/31	76	50 - 140	79	50 - 140	<0.020	ug/g	23	50		
A072815	Benzo(b)fluoranthene	2020/10/31	78	50 - 140	77	50 - 140	<0.020	ug/g	22	50		
A072815	Benzo(g,h,i)perylene	2020/10/31	78	50 - 140	79	50 - 140	<0.050	ug/g	5.8	50		
A072815	Benzo(k)fluoranthene	2020/10/31	79	50 - 140	83	50 - 140	<0.020	ug/g	20	50		
A072815	Chrysene	2020/10/31	78	50 - 140	80	50 - 140	<0.020	ug/g	28	50		
A072815	Dibenz(a,h)anthracene	2020/10/31	83	50 - 140	78	50 - 140	<0.020	ug/g	NC	50		
A072815	Fluoranthene	2020/10/31	77	50 - 140	73	50 - 140	<0.020	ug/g	21	50		
A072815	Fluorene	2020/10/31	74	50 - 140	77	50 - 140	<0.020	ug/g	7.9	50		
A072815	Indeno(1,2,3-cd)pyrene	2020/10/31	79	50 - 140	80	50 - 140	<0.020	ug/g	28	50		
A072815	Naphthalene	2020/10/31	70	50 - 140	79	50 - 140	<0.010	ug/g	8.4	50		
A072815	Phenanthrene	2020/10/31	77	50 - 140	75	50 - 140	<0.010	ug/g	11	50		
A072815	Pyrene	2020/10/31	77	50 - 140	74	50 - 140	<0.020	ug/g	20	50		
A072815	Quinoline	2020/10/31	103	50 - 140	105	50 - 140	<0.050	ug/g	NC	50		
A072820	EPH (C10-C19)	2020/10/31	93	60 - 140	97	70 - 130	<100	mg/kg	NC	40		
A072820	EPH (C19-C32)	2020/10/31	84	60 - 140	87	70 - 130	<100	mg/kg	37	40		
A072827	F2 (C10-C16 Hydrocarbons)	2020/10/30	93	50 - 130	95	70 - 130	<10	mg/kg	11	40		
A072827	F3 (C16-C34 Hydrocarbons)	2020/10/30	96	50 - 130	105	70 - 130	<50	mg/kg	32	40		
A072827	F4 (C34-C50 Hydrocarbons)	2020/10/30	78	70 - 130	114	70 - 130	<50	mg/kg	13	40		
A072827	Reached Baseline at C50	2020/10/30					1.0	mg/kg	NC	50		
A072969	1,1,1,2-tetrachloroethane	2020/10/31	102	50 - 140	97	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,1,1-trichloroethane	2020/10/31	108	50 - 140	103	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,1,2,2-tetrachloroethane	2020/10/31	98	50 - 140	95	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,1,2Trichloro-1,2,2Trifluoroethane	2020/10/31	103	50 - 140	92	60 - 130	<0.20	mg/kg				
A072969	1,1,2-trichloroethane	2020/10/31	106	50 - 140	104	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,1-dichloroethane	2020/10/31	106	50 - 140	103	60 - 130	<0.025	mg/kg	NC	50		
A072969	1,1-dichloroethene	2020/10/31	102	50 - 140	97	60 - 130	<0.025	mg/kg	NC	50		
A072969	1,2,3-trichlorobenzene	2020/10/31	103	50 - 140	91	60 - 130	<0.030	mg/kg	NC	50		

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A072969	1,2,4-trichlorobenzene	2020/10/31	105	50 - 140	95	60 - 130	<0.030	mg/kg	NC	50		
A072969	1,2,4-trimethylbenzene	2020/10/31	108	50 - 140	101	60 - 130	<0.20	mg/kg	NC	50		
A072969	1,2-dibromoethane	2020/10/31	110	50 - 140	104	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,2-dichlorobenzene	2020/10/31	105	50 - 140	97	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,2-dichloroethane	2020/10/31	100	50 - 140	103	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,2-dichloropropane	2020/10/31	112	50 - 140	106	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,3,5-trimethylbenzene	2020/10/31	112	50 - 140	103	60 - 130	<0.20	mg/kg	NC	50		
A072969	1,3-Butadiene	2020/10/31	73	50 - 140	79	50 - 140	<0.080	mg/kg	NC	50		
A072969	1,3-dichlorobenzene	2020/10/31	107	50 - 140	98	60 - 130	<0.020	mg/kg	NC	50		
A072969	1,4-dichlorobenzene	2020/10/31	102	50 - 140	94	60 - 130	<0.020	mg/kg	NC	50		
A072969	2-Butanone (MEK)	2020/10/31			110	50 - 140	<15	mg/kg				
A072969	4-Methyl-2-pentanone (MIBK)	2020/10/31			98	50 - 140	<0.50	mg/kg				
A072969	Acetone	2020/10/31			85	50 - 140	<5.0	mg/kg				
A072969	Benzene	2020/10/31	108	50 - 140	105	60 - 130	<0.0050	mg/kg	NC	50		
A072969	Bromobenzene	2020/10/31	105	50 - 140	100	60 - 130	<0.20	mg/kg	NC	50		
A072969	Bromodichloromethane	2020/10/31	104	50 - 140	101	60 - 130	<0.050	mg/kg	NC	50		
A072969	Bromoform	2020/10/31	103	50 - 140	99	60 - 130	<0.050	mg/kg	NC	50		
A072969	Bromomethane	2020/10/31	105	50 - 140	65	50 - 140	<0.30	mg/kg	NC	50		
A072969	Carbon tetrachloride	2020/10/31	110	50 - 140	104	60 - 130	<0.020	mg/kg	NC	50		
A072969	Chlorobenzene	2020/10/31	102	50 - 140	96	60 - 130	<0.020	mg/kg	NC	50		
A072969	Chlorodibromomethane	2020/10/31	106	50 - 140	101	60 - 130	<0.050	mg/kg	NC	50		
A072969	Chloroethane	2020/10/31	86	50 - 140	68	50 - 140	<0.10	mg/kg	NC	50		
A072969	Chloroform	2020/10/31	100	50 - 140	97	60 - 130	<0.020	mg/kg	NC	50		
A072969	Chloromethane	2020/10/31	91	50 - 140	78	50 - 140	<0.050	mg/kg	NC	50		
A072969	cis-1,2-dichloroethene	2020/10/31	108	50 - 140	101	60 - 130	<0.030	mg/kg	NC	50		
A072969	cis-1,3-dichloropropene	2020/10/31	104	50 - 140	68	50 - 140	<0.020	mg/kg	NC	50		
A072969	Dichlorodifluoromethane	2020/10/31	103	50 - 140	62	50 - 140	<0.20	mg/kg				
A072969	Dichloromethane	2020/10/31	104	50 - 140	98	60 - 130	<0.080	mg/kg	NC	50		
A072969	Ethylbenzene	2020/10/31	108	50 - 140	104	60 - 130	<0.010	mg/kg	NC	50		
A072969	F1 (C6-C10)	2020/10/31			72	60 - 130	<10	mg/kg	NC	50		
A072969	Hexachlorobutadiene	2020/10/31	100	50 - 140	90	50 - 130	<0.20	mg/kg	NC	50		
A072969	Isopropylbenzene	2020/10/31	104	50 - 140	99	60 - 130	<0.20	mg/kg	NC	50		

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Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A072969	m & p-Xylene	2020/10/31	105	50 - 140	102	60 - 130	<0.040	mg/kg	NC	50		
A072969	Methylcyclohexane	2020/10/31	111	50 - 140	100	60 - 130	<0.20	mg/kg	NC	50		
A072969	Methyl-tert-butylether (MTBE)	2020/10/31	101	50 - 140	99	60 - 130	<0.10	mg/kg	NC	50		
A072969	n-Decane	2020/10/31	67	50 - 140	95	60 - 130	<2.0	mg/kg	NC	50		
A072969	o-Xylene	2020/10/31	103	50 - 140	97	60 - 130	<0.040	mg/kg	NC	50		
A072969	Styrene	2020/10/31	109	50 - 140	104	60 - 130	<0.030	mg/kg	NC	50		
A072969	Tetrachloroethene	2020/10/31	108	50 - 140	105	60 - 130	<0.010	mg/kg	NC	50		
A072969	Toluene	2020/10/31	113	50 - 140	106	60 - 130	<0.050	mg/kg	NC	50		
A072969	trans-1,2-dichloroethene	2020/10/31	108	50 - 140	98	60 - 130	<0.030	mg/kg	NC	50		
A072969	trans-1,3-dichloropropene	2020/10/31	101	50 - 140	58	50 - 140	<0.020	mg/kg	NC	50		
A072969	Trichloroethene	2020/10/31	107	50 - 140	97	60 - 130	<0.0090	mg/kg	NC	50		
A072969	Trichlorofluoromethane	2020/10/31	107	50 - 140	90	60 - 130	<0.20	mg/kg	NC	50		
A072969	VH C6-C10	2020/10/31			71	60 - 130	<10	mg/kg	NC	50		
A072969	Vinyl chloride	2020/10/31	107	50 - 140	86	50 - 140	<0.040	mg/kg	NC	50		
A072969	Xylenes (Total)	2020/10/31					<0.040	mg/kg	NC	50		
A073678	1-Methylnaphthalene	2020/10/31	88	50 - 140	95	50 - 140	<0.050	ug/g	NC	50		
A073678	2-Methylnaphthalene	2020/10/31	90	50 - 140	98	50 - 140	<0.020	ug/g	NC	50		
A073678	Acenaphthene	2020/10/31	91	50 - 140	98	50 - 140	<0.0050	ug/g	NC	50		
A073678	Acenaphthylene	2020/10/31	87	50 - 140	94	50 - 140	<0.0050	ug/g	NC	50		
A073678	Anthracene	2020/10/31	89	50 - 140	97	50 - 140	<0.0040	ug/g	NC	50		
A073678	Benzo(a)anthracene	2020/10/31	86	50 - 140	94	50 - 140	<0.020	ug/g	NC	50		
A073678	Benzo(a)pyrene	2020/10/31	81	50 - 140	88	50 - 140	<0.020	ug/g	NC	50		
A073678	Benzo(b&j)fluoranthene	2020/10/31	89	50 - 140	95	50 - 140	<0.020	ug/g	NC	50		
A073678	Benzo(b)fluoranthene	2020/10/31	87	50 - 140	93	50 - 140	<0.020	ug/g	NC	50		
A073678	Benzo(g,h,i)perylene	2020/10/31	90	50 - 140	99	50 - 140	<0.050	ug/g	NC	50		
A073678	Benzo(k)fluoranthene	2020/10/31	91	50 - 140	95	50 - 140	<0.020	ug/g	NC	50		
A073678	Chrysene	2020/10/31	88	50 - 140	95	50 - 140	<0.020	ug/g	NC	50		
A073678	Dibenz(a,h)anthracene	2020/10/31	96	50 - 140	106	50 - 140	<0.020	ug/g	NC	50		
A073678	Fluoranthene	2020/10/31	91	50 - 140	98	50 - 140	<0.020	ug/g	NC	50		
A073678	Fluorene	2020/10/31	87	50 - 140	94	50 - 140	<0.020	ug/g	NC	50		
A073678	Indeno(1,2,3-cd)pyrene	2020/10/31	95	50 - 140	104	50 - 140	<0.020	ug/g	NC	50		
A073678	Naphthalene	2020/10/31	90	50 - 140	96	50 - 140	<0.010	ug/g	NC	50		

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Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A073678	Phenanthrene	2020/10/31	88	50 - 140	94	50 - 140	<0.010	ug/g	NC	50		
A073678	Pyrene	2020/10/31	90	50 - 140	97	50 - 140	<0.020	ug/g	NC	50		
A073678	Quinoline	2020/10/31	110	50 - 140	110	50 - 140	<0.050	ug/g	NC	50		
A073686	EPH (C10-C19)	2020/11/02	90	60 - 140	90	70 - 130	<100	mg/kg	NC	40		
A073686	EPH (C19-C32)	2020/11/02	81	60 - 140	81	70 - 130	<100	mg/kg	NC	40		
A074519	Extractable (Water) Diethylene Glycol	2020/11/02	86	60 - 140	91	60 - 140	<10	mg/kg	NC	50		
A074519	Extractable (Water) Ethylene Glycol	2020/11/02	88	60 - 140	90	60 - 140	<10	mg/kg	NC	50		
A074519	Extractable (Water) Propylene Glycol	2020/11/02	88	60 - 140	90	60 - 140	<10	mg/kg	NC	50		
A074519	Extractable (Water) Triethylene Glycol	2020/11/02	79	60 - 140	90	60 - 140	<10	mg/kg	NC	50		
A075010	Moisture	2020/11/03					<0.30	%	1.0	20		
A075326	2,3,4,5-tetrachlorophenol	2020/11/03	106	50 - 140	82	50 - 140	<0.0050	mg/kg				
A075326	2,3,4,6-tetrachlorophenol	2020/11/03	116	50 - 140	90	50 - 140	<0.0050	mg/kg				
A075326	2,3,4-trichlorophenol	2020/11/03	103	50 - 140	86	50 - 140	<0.0050	mg/kg				
A075326	2,3,5,6-tetrachlorophenol	2020/11/03	103	50 - 140	82	50 - 140	<0.0050	mg/kg				
A075326	2,3,5-trichlorophenol	2020/11/03	102	50 - 140	85	50 - 140	<0.0050	mg/kg				
A075326	2,3,6-Trichlorophenol	2020/11/03	99	50 - 140	84	50 - 140	<0.0050	mg/kg				
A075326	2,3-Dichlorophenol	2020/11/03	106	50 - 140	89	50 - 140	<0.0050	mg/kg				
A075326	2,4 + 2,5-Dichlorophenol	2020/11/03	111	50 - 140	94	50 - 140	<0.0050	mg/kg				
A075326	2,4,5-trichlorophenol	2020/11/03	108	50 - 140	89	50 - 140	<0.0050	mg/kg				
A075326	2,4,6-trichlorophenol	2020/11/03	110	50 - 140	93	50 - 140	<0.0050	mg/kg				
A075326	2,4-dimethylphenol	2020/11/03	123	50 - 140	101	50 - 140	<0.050	mg/kg				
A075326	2,4-dinitrophenol	2020/11/03	130	30 - 130	97	30 - 130	<0.050	mg/kg				
A075326	2,6-dichlorophenol	2020/11/03	117	50 - 140	99	50 - 140	<0.0050	mg/kg				
A075326	2,6-Dimethylphenol	2020/11/03	103	50 - 140	92	50 - 140	<0.050	mg/kg				
A075326	2-chlorophenol	2020/11/03	116	50 - 140	101	50 - 140	<0.0050	mg/kg				
A075326	2-methylphenol	2020/11/03	93	50 - 140	87	50 - 140	<0.050	mg/kg				
A075326	2-nitrophenol	2020/11/03	109	30 - 130	93	30 - 130	<0.050	mg/kg				
A075326	3 & 4-chlorophenol	2020/11/03	123	50 - 140	109	50 - 140	<0.0050	mg/kg				
A075326	3 & 4-methylphenol	2020/11/03	87	50 - 140	85	50 - 140	<0.050	mg/kg				
A075326	3,4,5-Trichlorophenol	2020/11/03	100	50 - 140	85	50 - 140	<0.0050	mg/kg				
A075326	3,4-Dichlorophenol	2020/11/03	108	50 - 140	91	50 - 140	<0.0050	mg/kg				
A075326	3,4-Dimethylphenol	2020/11/03	97	50 - 140	89	50 - 140	<0.050	mg/kg				

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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A075326	3,5-Dichlorophenol	2020/11/03	113	50 - 140	95	50 - 140	<0.0050	mg/kg				
A075326	4,6-dinitro-2-methylphenol	2020/11/03	124	30 - 130	95	30 - 130	<0.050	mg/kg				
A075326	4-Chloro-3-Methylphenol	2020/11/03	110	50 - 140	95	50 - 140	<5.0	mg/kg				
A075326	4-Hydroxyphenol (Hydroquinone)	2020/11/03	115	50 - 140	107	50 - 140	<5.0	mg/kg				
A075326	4-nitrophenol	2020/11/03	93	30 - 130	93	30 - 130	<0.050	mg/kg				
A075326	Pentachlorophenol	2020/11/03	NC	50 - 140	71	50 - 140	<0.0050	mg/kg	34	50		
A075326	Phenol	2020/11/03	108	50 - 140	98	50 - 140	<0.050	mg/kg				
A076041	Benzene	2020/11/03	125	60 - 140	121	70 - 130	<0.0050	mg/kg	NC	40		
A076041	Ethylbenzene	2020/11/03	126	60 - 140	121	70 - 130	<0.010	mg/kg	NC	40		
A076041	F1 (C6-C10)	2020/11/03			89	70 - 130	<10	mg/kg				
A076041	m & p-Xylene	2020/11/03	127	60 - 140	123	70 - 130	<0.040	mg/kg	NC	40		
A076041	Methyl-tert-butylether (MTBE)	2020/11/03	125	60 - 140	117	70 - 130	<0.10	mg/kg	NC	40		
A076041	o-Xylene	2020/11/03	133	60 - 140	129	70 - 130	<0.040	mg/kg	NC	40		
A076041	Styrene	2020/11/03	123	60 - 140	127	70 - 130	<0.030	mg/kg	NC	40		
A076041	Toluene	2020/11/03	125	60 - 140	120	70 - 130	<0.050	mg/kg	NC	40		
A076041	Xylenes (Total)	2020/11/03					<0.040	mg/kg	NC	40		
A076120	1,1,1,2-tetrachloroethane	2020/11/04	100	50 - 140	98	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,1,1-trichloroethane	2020/11/04	100	50 - 140	95	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,1,2,2-tetrachloroethane	2020/11/04	96	50 - 140	92	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,1,2Trichloro-1,2,2Trifluoroethane	2020/11/03	97	50 - 140	95	60 - 130	<0.20	mg/kg				
A076120	1,1,2-trichloroethane	2020/11/04	110	50 - 140	112	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,1-dichloroethane	2020/11/04	102	50 - 140	96	60 - 130	<0.025	mg/kg	NC	50		
A076120	1,1-dichloroethene	2020/11/04	98	50 - 140	105	60 - 130	<0.025	mg/kg	NC	50		
A076120	1,2,3-trichlorobenzene	2020/11/04	98	50 - 140	95	60 - 130	<0.030	mg/kg	NC	50		
A076120	1,2,4-trichlorobenzene	2020/11/04	99	50 - 140	97	60 - 130	<0.030	mg/kg	NC	50		
A076120	1,2,4-trimethylbenzene	2020/11/03	102	50 - 140	97	60 - 130	<0.20	mg/kg				
A076120	1,2-dibromoethane	2020/11/04	110	50 - 140	107	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,2-dichlorobenzene	2020/11/04	98	50 - 140	95	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,2-dichloroethane	2020/11/04	93	50 - 140	85	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,2-dichloropropane	2020/11/04	104	50 - 140	102	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,3,5-trimethylbenzene	2020/11/04	102	50 - 140	98	60 - 130	<0.20	mg/kg	NC	50		
A076120	1,3-Butadiene	2020/11/03	66	50 - 140	77	50 - 140	<0.080	mg/kg				

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A076120	1,3-dichlorobenzene	2020/11/04	99	50 - 140	97	60 - 130	<0.020	mg/kg	NC	50		
A076120	1,4-dichlorobenzene	2020/11/04	94	50 - 140	93	60 - 130	<0.020	mg/kg	NC	50		
A076120	2-Butanone (MEK)	2020/11/03			99	50 - 140	<15	mg/kg				
A076120	4-Methyl-2-pentanone (MIBK)	2020/11/03			93	50 - 140	<0.50	mg/kg				
A076120	Acetone	2020/11/03			97	50 - 140	<5.0	mg/kg				
A076120	Benzene	2020/11/04	101	50 - 140	96	60 - 130	<0.0050	mg/kg	NC	50		
A076120	Bromobenzene	2020/11/04	98	50 - 140	95	60 - 130	<0.20	mg/kg	NC	50		
A076120	Bromodichloromethane	2020/11/04	99	50 - 140	97	60 - 130	<0.050	mg/kg	NC	50		
A076120	Bromoform	2020/11/04	99	50 - 140	98	60 - 130	<0.050	mg/kg	NC	50		
A076120	Bromomethane	2020/11/04	106	50 - 140	97	50 - 140	<0.30	mg/kg	NC	50		
A076120	Carbon tetrachloride	2020/11/04	100	50 - 140	96	60 - 130	<0.020	mg/kg	NC	50		
A076120	Chlorobenzene	2020/11/04	100	50 - 140	99	60 - 130	<0.020	mg/kg	NC	50		
A076120	Chlorodibromomethane	2020/11/04	103	50 - 140	102	60 - 130	<0.050	mg/kg	NC	50		
A076120	Chloroethane	2020/11/04	102	50 - 140	93	50 - 140	<0.10	mg/kg	NC	50		
A076120	Chloroform	2020/11/04	99	50 - 140	103	60 - 130	<0.020	mg/kg	NC	50		
A076120	Chloromethane	2020/11/04	82	50 - 140	78	50 - 140	<0.050	mg/kg	NC	50		
A076120	cis-1,2-dichloroethene	2020/11/04	101	50 - 140	98	60 - 130	<0.030	mg/kg	NC	50		
A076120	cis-1,3-dichloropropene	2020/11/04	122	50 - 140	118	50 - 140	<0.020	mg/kg	NC	50		
A076120	Dichlorodifluoromethane	2020/11/03	97	50 - 140	62	50 - 140	<0.20	mg/kg				
A076120	Dichloromethane	2020/11/04	104	50 - 140	101	60 - 130	<0.080	mg/kg	NC	50		
A076120	Ethylbenzene	2020/11/04	105	50 - 140	103	60 - 130	<0.010	mg/kg	NC	50		
A076120	F1 (C6-C10)	2020/11/03			90	60 - 130	<10	mg/kg				
A076120	Hexachlorobutadiene	2020/11/04	90	50 - 140	92	50 - 130	<0.20	mg/kg	NC	50		
A076120	Isopropylbenzene	2020/11/04	97	50 - 140	94	60 - 130	<0.20	mg/kg	NC	50		
A076120	m & p-Xylene	2020/11/04	104	50 - 140	100	60 - 130	<0.040	mg/kg	NC	50		
A076120	Methylcyclohexane	2020/11/03	102	50 - 140	98	60 - 130	<0.20	mg/kg				
A076120	Methyl-tert-butylether (MTBE)	2020/11/04	97	50 - 140	95	60 - 130	<0.10	mg/kg	NC	50		
A076120	n-Decane	2020/11/03			83	60 - 130	<2.0	mg/kg				
A076120	o-Xylene	2020/11/04	99	50 - 140	95	60 - 130	<0.040	mg/kg	NC	50		
A076120	Styrene	2020/11/04	105	50 - 140	103	60 - 130	<0.030	mg/kg	NC	50		
A076120	Tetrachloroethene	2020/11/04	102	50 - 140	110	60 - 130	<0.010	mg/kg	1.6	50		
A076120	Toluene	2020/11/04	107	50 - 140	102	60 - 130	<0.050	mg/kg	NC	50		



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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A076120	trans-1,2-dichloroethene	2020/11/04	100	50 - 140	96	60 - 130	<0.030	mg/kg	NC	50		
A076120	trans-1,3-dichloropropene	2020/11/04	130	50 - 140	119	50 - 140	<0.020	mg/kg	NC	50		
A076120	Trichloroethene	2020/11/04	101	50 - 140	99	60 - 130	<0.0090	mg/kg	NC	50		
A076120	Trichlorofluoromethane	2020/11/04	95	50 - 140	87	60 - 130	<0.20	mg/kg	NC	50		
A076120	VH C6-C10	2020/11/04			88	60 - 130	<10	mg/kg	NC	50		
A076120	Vinyl chloride	2020/11/04	97	50 - 140	83	50 - 140	<0.040	mg/kg	NC	50		
A076120	Xylenes (Total)	2020/11/04					<0.040	mg/kg	NC	50		
A076622	1-Methylnaphthalene	2020/11/04	75	50 - 140	86	50 - 140	<0.050	ug/g	NC	50		
A076622	2-Methylnaphthalene	2020/11/04	78	50 - 140	88	50 - 140	<0.020	ug/g	NC	50		
A076622	Acenaphthene	2020/11/04	76	50 - 140	88	50 - 140	<0.0050	ug/g	17	50		
A076622	Acenaphthylene	2020/11/04	74	50 - 140	84	50 - 140	<0.0050	ug/g	19	50		
A076622	Anthracene	2020/11/04	77	50 - 140	85	50 - 140	<0.0040	ug/g	13	50		
A076622	Benzo(a)anthracene	2020/11/04	72	50 - 140	82	50 - 140	<0.020	ug/g	4.0	50		
A076622	Benzo(a)pyrene	2020/11/04	72	50 - 140	78	50 - 140	<0.020	ug/g	6.0	50		
A076622	Benzo(b&j)fluoranthene	2020/11/04	76	50 - 140	86	50 - 140	<0.020	ug/g	5.1	50		
A076622	Benzo(b)fluoranthene	2020/11/04	79	50 - 140	87	50 - 140	<0.020	ug/g	7.0	50		
A076622	Benzo(g,h,i)perylene	2020/11/04	65	50 - 140	87	50 - 140	<0.050	ug/g	2.9	50		
A076622	Benzo(k)fluoranthene	2020/11/04	72	50 - 140	86	50 - 140	<0.020	ug/g	5.1	50		
A076622	Chrysene	2020/11/04	70	50 - 140	83	50 - 140	<0.020	ug/g	7.2	50		
A076622	Dibenz(a,h)anthracene	2020/11/04	78	50 - 140	90	50 - 140	<0.020	ug/g	4.7	50		
A076622	Fluoranthene	2020/11/04	80	50 - 140	88	50 - 140	<0.020	ug/g	7.1	50		
A076622	Fluorene	2020/11/04	75	50 - 140	83	50 - 140	<0.020	ug/g	25	50		
A076622	Indeno(1,2,3-cd)pyrene	2020/11/04	75	50 - 140	90	50 - 140	<0.020	ug/g	5.3	50		
A076622	Naphthalene	2020/11/04	76	50 - 140	87	50 - 140	<0.010	ug/g	NC	50		
A076622	Phenanthrene	2020/11/04	76	50 - 140	84	50 - 140	<0.010	ug/g	12	50		
A076622	Pyrene	2020/11/04	82	50 - 140	87	50 - 140	<0.020	ug/g	9.4	50		
A076622	Quinoline	2020/11/04	106	50 - 140	107	50 - 140	<0.050	ug/g	NC	50		
A076629	F2 (C10-C16 Hydrocarbons)	2020/11/03	95	50 - 130	102	70 - 130	<10	mg/kg	7.3	40		
A076629	F3 (C16-C34 Hydrocarbons)	2020/11/03	116	50 - 130	107	70 - 130	<50	mg/kg	15	40		
A076629	F4 (C34-C50 Hydrocarbons)	2020/11/03	NC	70 - 130	99	70 - 130	<50	mg/kg	11	40		
A076629	Reached Baseline at C50	2020/11/03					1.0	mg/kg	NC	50		
A076633	EPH (C10-C19)	2020/11/04	93	60 - 140	93	70 - 130	<100	mg/kg	NC	40		

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BV Labs Job #: C078994

Report Date: 2020/11/10

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A076633	EPH (C19-C32)	2020/11/04	89	60 - 140	83	70 - 130	<100	mg/kg	21	40		
A077338	Total Aluminum (Al)	2020/11/04	NC	75 - 125	104	75 - 125	<100	mg/kg	6.0	40	105	70 - 130
A077338	Total Antimony (Sb)	2020/11/04	97	75 - 125	108	75 - 125	<0.10	mg/kg	3.5	30	114	70 - 130
A077338	Total Arsenic (As)	2020/11/04	100	75 - 125	104	75 - 125	<0.20	mg/kg	12	30	93	70 - 130
A077338	Total Barium (Ba)	2020/11/04	107	75 - 125	103	75 - 125	<0.10	mg/kg	5.9	40	107	70 - 130
A077338	Total Beryllium (Be)	2020/11/04	98	75 - 125	104	75 - 125	<0.20	mg/kg	NC	30	106	70 - 130
A077338	Total Boron (B)	2020/11/04	101	75 - 125	106	75 - 125	<1.0	mg/kg	5.6	30		
A077338	Total Cadmium (Cd)	2020/11/04	100	75 - 125	107	75 - 125	<0.050	mg/kg	16	30	95	70 - 130
A077338	Total Chromium (Cr)	2020/11/04	105	75 - 125	110	75 - 125	<0.50	mg/kg	2.5	30	111	70 - 130
A077338	Total Cobalt (Co)	2020/11/04	99	75 - 125	102	75 - 125	<0.10	mg/kg	7.3	30	100	70 - 130
A077338	Total Copper (Cu)	2020/11/04	100	75 - 125	107	75 - 125	<0.50	mg/kg	3.2	30	106	70 - 130
A077338	Total Iron (Fe)	2020/11/04	NC	75 - 125	105	75 - 125	<100	mg/kg	4.7	30	104	70 - 130
A077338	Total Lead (Pb)	2020/11/04	100	75 - 125	105	75 - 125	<0.10	mg/kg	1.9	40	115	70 - 130
A077338	Total Lithium (Li)	2020/11/04	101	75 - 125	107	75 - 125	<0.50	mg/kg	7.9	30	104	70 - 130
A077338	Total Manganese (Mn)	2020/11/04	NC	75 - 125	103	75 - 125	<0.20	mg/kg	9.2	30	114	70 - 130
A077338	Total Mercury (Hg)	2020/11/04	99	75 - 125	105	75 - 125	<0.050	mg/kg	NC	40	92	70 - 130
A077338	Total Molybdenum (Mo)	2020/11/04	96	75 - 125	99	75 - 125	<0.10	mg/kg	17	40	103	70 - 130
A077338	Total Nickel (Ni)	2020/11/04	99	75 - 125	104	75 - 125	<0.50	mg/kg	5.7	30	108	70 - 130
A077338	Total Selenium (Se)	2020/11/04	102	75 - 125	108	75 - 125	<0.50	mg/kg	NC	30		
A077338	Total Silver (Ag)	2020/11/04	94	75 - 125	99	75 - 125	<0.050	mg/kg	NC	40	106	70 - 130
A077338	Total Strontium (Sr)	2020/11/04	108	75 - 125	104	75 - 125	<0.10	mg/kg	7.8	40	110	70 - 130
A077338	Total Thallium (Tl)	2020/11/04	96	75 - 125	101	75 - 125	<0.050	mg/kg	NC	30	94	70 - 130
A077338	Total Tin (Sn)	2020/11/04	99	75 - 125	105	75 - 125	<0.10	mg/kg	3.4	40	95	70 - 130
A077338	Total Titanium (Ti)	2020/11/04	NC	75 - 125	100	75 - 125	<1.0	mg/kg	7.7	40		
A077338	Total Tungsten (W)	2020/11/04	88	75 - 125	105	75 - 125	<0.50	mg/kg	NC	40		
A077338	Total Uranium (U)	2020/11/04	99	75 - 125	104	75 - 125	<0.050	mg/kg	2.9	30	109	70 - 130
A077338	Total Vanadium (V)	2020/11/04	103	75 - 125	107	75 - 125	<1.0	mg/kg	0.51	30	108	70 - 130
A077338	Total Zinc (Zn)	2020/11/04	98	75 - 125	105	75 - 125	<1.0	mg/kg	5.9	30	106	70 - 130
A077339	Soluble (2:1) pH	2020/11/04			100	97 - 103			0.62	20		
A077728	Total Aluminum (Al)	2020/11/05	NC	75 - 125	105	75 - 125	<100	mg/kg	2.9	40	107	70 - 130
A077728	Total Antimony (Sb)	2020/11/05	96	75 - 125	108	75 - 125	<0.10	mg/kg	1.1	30	127	70 - 130
A077728	Total Arsenic (As)	2020/11/05	94	75 - 125	100	75 - 125	<0.20	mg/kg	4.0	30	94	70 - 130



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BV Labs Job #: C078994

Report Date: 2020/11/10

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A077728	Total Barium (Ba)	2020/11/05	99	75 - 125	99	75 - 125	<0.10	mg/kg	2.7	40	107	70 - 130
A077728	Total Beryllium (Be)	2020/11/05	92	75 - 125	100	75 - 125	<0.20	mg/kg	NC	30	100	70 - 130
A077728	Total Boron (B)	2020/11/05	94	75 - 125	103	75 - 125	<1.0	mg/kg	3.4	30		
A077728	Total Cadmium (Cd)	2020/11/05	96	75 - 125	105	75 - 125	<0.050	mg/kg	8.2	30	107	70 - 130
A077728	Total Chromium (Cr)	2020/11/05	96	75 - 125	107	75 - 125	<0.50	mg/kg	2.7	30	110	70 - 130
A077728	Total Cobalt (Co)	2020/11/05	90	75 - 125	103	75 - 125	<0.10	mg/kg	3.0	30	106	70 - 130
A077728	Total Copper (Cu)	2020/11/05	93	75 - 125	103	75 - 125	<0.50	mg/kg	2.2	30	107	70 - 130
A077728	Total Iron (Fe)	2020/11/05	NC	75 - 125	108	75 - 125	<100	mg/kg	2.4	30	111	70 - 130
A077728	Total Lead (Pb)	2020/11/05	95	75 - 125	105	75 - 125	<0.10	mg/kg	0.79	40	121	70 - 130
A077728	Total Lithium (Li)	2020/11/05	94	75 - 125	103	75 - 125	<0.50	mg/kg	3.1	30	109	70 - 130
A077728	Total Manganese (Mn)	2020/11/05	NC	75 - 125	106	75 - 125	<0.20	mg/kg	2.1	30	115	70 - 130
A077728	Total Mercury (Hg)	2020/11/05	95	75 - 125	105	75 - 125	<0.050	mg/kg	NC	40	93	70 - 130
A077728	Total Molybdenum (Mo)	2020/11/05	95	75 - 125	102	75 - 125	<0.10	mg/kg	11	40	111	70 - 130
A077728	Total Nickel (Ni)	2020/11/05	91	75 - 125	100	75 - 125	<0.50	mg/kg	2.5	30	114	70 - 130
A077728	Total Selenium (Se)	2020/11/05	95	75 - 125	104	75 - 125	<0.50	mg/kg	NC	30		
A077728	Total Silver (Ag)	2020/11/05	95	75 - 125	104	75 - 125	<0.050	mg/kg	18	40	109	70 - 130
A077728	Total Strontium (Sr)	2020/11/05	110	75 - 125	106	75 - 125	<0.10	mg/kg	3.0	40	116	70 - 130
A077728	Total Thallium (Tl)	2020/11/05	94	75 - 125	104	75 - 125	<0.050	mg/kg	4.8	30	103	70 - 130
A077728	Total Tin (Sn)	2020/11/05	99	75 - 125	104	75 - 125	<0.10	mg/kg	2.4	40	107	70 - 130
A077728	Total Titanium (Ti)	2020/11/05	NC	75 - 125	102	75 - 125	<1.0	mg/kg	2.7	40		
A077728	Total Tungsten (W)	2020/11/05	86	75 - 125	105	75 - 125	<0.50	mg/kg	NC	40		
A077728	Total Uranium (U)	2020/11/05	93	75 - 125	104	75 - 125	<0.050	mg/kg	3.8	30	113	70 - 130
A077728	Total Vanadium (V)	2020/11/05	94	75 - 125	102	75 - 125	<1.0	mg/kg	2.4	30	111	70 - 130
A077728	Total Zinc (Zn)	2020/11/05	95	75 - 125	104	75 - 125	<1.0	mg/kg	2.2	30	113	70 - 130
A077733	Soluble (2:1) pH	2020/11/05			100	97 - 103			0.23	20		
A082839	SG BC-CSR EPH (C10-C19)	2020/11/10			85	70 - 130	<100	mg/kg				



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BV Labs Job #: C078994

Report Date: 2020/11/10

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RFM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A082839	SG BC-CSR EPH (C19-C32)	2020/11/10			98	50 - 130	<100	mg/kg				
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration) NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).												



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BV Labs Job #: C078994
Report Date: 2020/11/10

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RFM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Gita Pokhrel, Laboratory Supervisor

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



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INVOICE TO:		Report Information		Project Information		Chain Of Custody Record	
Company Name #3763 KEYSTONE ENVIRONMENTAL LTD		Company Name _____		Quotation # B91097		Bottle Order #: _____	
Contact Name Ross McCarter		Contact Name _____		P.O. # _____		623318 	
Address SUITE 320 4400 DOMINION STREET		Address _____		Project # 15934		Project Manager _____	
Phone (604) 430-0671 Fax: (604) 430-0672		Phone _____ Fax: _____		Project Name _____		Gail Pedersen	
Email rmccarter@keystoneenvironmental.ca		Email _____		Site # _____		C078994_COC	
Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required:	
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other _____				Metals Field Filtered ? (Y/N)		Please provide advance notice for rush projects	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS.						Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
						Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required _____ Rush Confirmation Number: _____ (call lab for #)	
#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	# of Bottles	Comments
1	BH20-1	(0.5)	20/10/23	1200	SOL	3	Hold
2		(1.0)				3	
3		(1.5)				3	
4		(2.0)				2	
5	BH20-2	(0.5)				3	
6		(1.0)				3	
7		(1.5)				2	
8	BH20-3	(0.5)				3	
9		(1.5)				3	
10		(2.5)				2	
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time
<i>[Signature]</i>		23/10/26	1910	<i>[Signature]</i> ALFRED NGAI		2024/10/27	08:00
						# Jars used and not submitted	Lab Use Only
						Time Sensitive	Cutkedy Seal Intact on Cooler?
						Temperature (°C) on Receipt	White: BV Labs Yellow: Client
						17.15, 15/13.4/15	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.



Bureau Veritas Laboratories
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel: (604) 734 7276 Toll-free: 800-563-6266 Fax: (604) 731 2386 www.bvlabs.com

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INVOICE TO:		Report Information		Project Information	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097
Contact Name	Ross McCarter	Contact Name		P.O. #	
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	15934
Phone	(604) 430-0671	Phone		Project Name	
Fax	(604) 430-0672	Fax		Site #	
Email	rmccarter@keystoneenvironmental.ca	Email		Sampled By	RFM

Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	
☒ CSR					
☒ CCME					
☐ BC Water Quality					
☐ Other					

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)
1	BH20-4 (0.5)	20/10/23	1000	Soil	
2	↓ (1.5)	↓	↓	↓	
3	↓ (2.5)	↓	↓	↓	
4	↓ (3.5)	↓	↓	↓	
5	MW20-5 (0.5)	20/10/22	0800		
6	↓ (1.5)	↓	↓	↓	
7	↓ (2.5)	↓	↓	↓	
8	↓ (3.5)	↓	↓	↓	
9	↓ (4.5)	↓	↓	↓	
10	↓ (6.0)	↓	↓	↓	

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		# Jars used and not submitted		Lab Use Only	
RM RFM		20/10/23		1910		ALCEREN NGAI		20/10/23		08:00				Temperature (°C) at Receipt: 17.15/15/13/14/15 Custody Seal Intact on Cooler? ☒ Yes ☐ No	

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

INVOICE TO:		Report Information		Project Information		Chain Of Custody Record		
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097	Only		
Contact Name	Ross McCarter	Contact Name		P.O. #		Bottle Order #:		
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	15934	623318		
Phone	(604) 430-0671	Phone		Project Name		Project Manager		
Email	rmccarter@keystoneenvironmental.ca	Email		Site #		Gail Pedersen		
Fax: (604) 430-0672		Fax:		Sampled By	Rm	C#623318-03-01		
Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required:		
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other _____						Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (call lab for #)		
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS								
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	# of Bottles			Comments
1	BH20-8 (1.5)	20/10/26	1500	Sx	3			
2	↓ (2.5)				2			
3	BH20-1 (0.5)				3			
4	MW20-9 (1.5)				3			
5	↓ (2.5)				3			
6	↓ (3.5)				3			
7	↓ (5.0)				2			
8	↓ (6.0)				2			
9	MW20-10 (0.5)				3			
10	MW20-10 (1.5)				3			
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted
Rm		20/10/26	1910	A. FERED IV 6A1		20/10/27	08:00	
Time Sensitive		Temperature (°C) on Receipt		Custody Seal Intact on Cooler?		Lab Use Only		
☐		17.15, 15/3.14, 15		☒ Yes ☐ No				
						White: BV Labs Yellow: Client		



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[illegible]

INVOICE TO:		Report Information		Project Information		Barcode		Page 6 of 8	
Company Name: #3763 KEYSTONE ENVIRONMENTAL LTD Contact Name: Ross McCarter Address: SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3 Phone: (604) 430-0671 Fax: (604) 430-0672 Email: rmccarter@keystoneenvironmental.ca		Company Name: _____ Contact Name: _____ Address: _____ Phone: _____ Fax: _____ Email: _____		Quotation #: 891097 P.O. #: _____ Project #: 22070 15434 Project Name: _____ Site #: _____ Sampled By: RFM		C078994_COC Bottle Order #: _____ Chain Of Custody Record: _____ Project Manager: Gail Pedersen		Barcode: 617674	
Regulatory Criteria: ☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other: _____		Special Instructions: _____		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required: Please provide advance notice for rush projects			
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS		Metals Field Filtered? (Y/N)		Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (call lab for #)			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	# of Bottles	Comments			
1	MW20-13(1.5)	20/10/26	1600	Soil	2				
2	BH20-14(0.5)				3				
3	(1.5)				3				
4	(2.5)				2	Hold			
5	(4.0)				3				
6	(5.3)				2				
7	(6.5)				2				
8	MW20-15(0.5)				3				
9	(1.5)				3				
10	(2.5)				3				
* RELINQUISHED BY: (Signature/Print) RFM		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print) ALFRED NGAH		Date: (YY/MM/DD)	Time	# Jars used and not submitted: _____	
		20/10/26	1800			20/10/26	08:00	Lab Use Only Temperature (°C) on Receipt: 17.15/15/13.14.15 Custody Seal Intact on Cooler? ☒ Yes ☐ No	
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.									
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.									



Bureau Veritas Laboratories
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INVOICE TO:		Report Information		Project Information	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097
Contact Name	Ross McCarter	Contact Name		P.O. #	
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	12670 15434
Phone	(604) 430-0671 Fax: (604) 430-0672	Phone		Project Name	
Email	rmccarter@keystoneenvironmental.ca	Email		Site #	
				Sampled By	Rm

Regulatory Criteria:	Special Instructions	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	Turnaround Time (TAT) Required:
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other _____			Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (call lab for #)

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Filtered? (Y/N)
1	MW20-15(35)	20/10/26	1300	sn'	
2	(4.5)				
3	(5.5)				
4	(6.5)				
5	(7.5)				
6	(8.5)				
7	BH20-16(05)				
8	(1.5)				
9	(2.5)				
10	(3.5)				

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only
<i>[Signature]</i>	20/10/26	1400	<i>[Signature]</i>	20/10/27	1050		Time Sensitive ☐ Temperature (°C) on Receipt: 17.15, 15/13/14/15 Custody Seal Intact on Cooler? ☒ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.



Bureau Veritas Laboratories
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel: (604) 734 7276 Toll-free 800-563-6266 Fax: (604) 731 2386 www.bvlabs.com

Page 8 of 9

INVOICE TO:		Report Information		Project Information	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097
Contact Name	Ross McCarter	Contact Name		P.O. #	
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	32670 15434
Phone	(604) 430-0671 Fax: (604) 430-0672	Phone		Project Name	
Email	rmccarter@keystoneenvironmental.ca	Email		Site #	
Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other _____					
Turnaround Time (TAT) Required: Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (call lab for #)					
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	
1	BH20-16 (4.5)	26/10/26	1700	Soil	
2	BH20-A	26/10/26	0800		
3	BH20-B	↓	↓	↓	
4	BH20-C	26/10/26	↓	↓	
5	BH20-D	26/10/26	↓	↓	
6	MW20-E	26/10/26	↓	↓	
7	MW20-F	↓	↓	↓	
8					
9					
10					
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	
RM		26/10/26	1910	A. L. K. ALFREDO NGA	
		Date: (YY/MM/DD)	Time	# Jars used and not submitted	
		26/10/27	08:00		
		Lab Use Only			
		Time Sensitive		Temperature (°C) of Receipt	
		☐		17.5/15/13.14/15	
		Custody Seal Intact on Cooler?		No	
		White: BV Labs		Yellow: Client	



C078994_COC

Page 1 of 0

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INVOICE TO: #3763 KEYSTONE ENVIRONMENTAL LTD
Company Name: Ross McCarter
Contact Name: SUITE 320 4400 DOMINION STREET
Address: BURNABY BC V5G 4G3
Phone: (604) 430 0671 Fax: (604) 430-0672
Email: rmcarter@keystoneenvironmental.ca

Report Information
Company Name: _____
Contact Name: _____
Address: _____
Phone: _____ Fax: _____
Email: _____

Project Information
Duration #: B91097
P.O. #: _____
Project #: 15934
Project Name: _____
Site #: _____
Sampled By: *RM*

Laboratory Use Only
BV Lab Job #: _____
Bottle Order #:
Chain Of Custody Record:
Project Manager: _____
Call Refers: _____

Regulatory Criteria
☒ CSR
☒ CCME
☐ BC Water Quality
☐ Other: _____

Special Instructions: _____

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)
Metals Field Filtered (Y/N):
KeyStone Metals
LEAD (HEP)/PATT.
VOC/NPH.
Glycols.
PHC E-1-EH.
Silica Gel
clean up
chlorinated phenols
non-chlorinated phenols

Turnaround Time (TAT) Required
Please provide service notice for rush projects
Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Deviation are > 7 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____
Rush Confirmation Number: _____ (not lab for R)

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

Sample Barcode Label	Sample Location/Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered (Y/N)	KeyStone Metals	LEAD (HEP)/PATT.	VOC/NPH.	Glycols.	PHC E-1-EH.	Silica Gel clean up	chlorinated phenols	non-chlorinated phenols	# of Bottles	Comments
1	BH20-1 (0.5)	20/10/23	1200	5m										3	
2	(1.0)					X	X				X	X	X	3	
3	(1.5)					X	X			X	X	X	X	3	
4	(2.0)									X				3	
5	BH20-2 (0.5)					X	X			X				2	
6	(1.0)													3	
7	(1.5)													3	
8	BH20-3 (0.5)					X	X			X				2	
9	(1.0)													3	
10	(1.5)													3	

RECEIVED BY: (Signature/Print) *ALFRED NGAI* Date: (YY/MM/DD) *2024/10/27* Time: *08:00*

Lab Use Only
Temperature (°C) on Receipt: *17.15, 15.13, 14.15* Cont'dy: *OK* on Receipt: *OK*
Time Received: _____
Time Delivered: _____
White BV Lab Yellow Glass

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TEST DELAYS.

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Chain Of Custody Record

Page 2 of 8

INVOICE TO:		Report Information		Project Information		Laboratory Use Only																																																																			
Company Name: #3763 KEYSTONE ENVIRONMENTAL LTD Contact Name: Ross McCarter Address: SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3 Phone: (604) 430-0571 Fax: (604) 430-0572 Email: rmccarter@keystoneenvironmental.ca		Company Name: _____ Contact Name: _____ Address: _____ Phone: _____ Fax: _____ Email: _____		Question #: B91097 P.O. #: _____ Project #: 15934 Project Name: _____ Site #: _____ Sampler By: RM		SV Lab Job #: _____ Bottle Order #: 623519 Chain Of Custody Record: _____ Project Manager: _____ CR23318-02-01 Gail Pedersen																																																																			
Regulatory Criteria ☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other: _____		Special Instructions 		ANALYSIS REQUESTED (PLEASE BE SPECIFIC) Metals Found (Filtered) (Y/N) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Keystone Metals</td> <td style="width: 15%;">LEAD-HSPH/PAH</td> <td style="width: 15%;">VOC/VPH</td> <td style="width: 15%;">GLYCOLS</td> <td style="width: 15%;">PHC FI-FY</td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> </tr> </table>				Keystone Metals	LEAD-HSPH/PAH	VOC/VPH	GLYCOLS	PHC FI-FY				X	X	X	X	X																																																					
Keystone Metals	LEAD-HSPH/PAH	VOC/VPH	GLYCOLS	PHC FI-FY																																																																					
X	X	X	X	X																																																																					
TURNAROUND TIME (TAT) REQUIRED Please provide advance notice for rush requests				Turnaround Time (TAT) Required Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and DO/DO ₂ starts at > 5 days - contact your Project Manager for details.																																																																					
Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (Call us for #)				Comments Hold																																																																					
SAMPLES MUST BE KEPT COOL (+/- 15°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS				<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Barcode Label</th> <th>Sample Location Identification</th> <th>Date Sampled</th> <th>Time Sampled</th> <th>Matrix</th> <th># of Bottles</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BH20-4 (0.5)</td> <td>20/10/23</td> <td>1000</td> <td>Soil</td> <td>3</td> </tr> <tr> <td>2</td> <td>↓ (1.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>3</td> <td>↓ (2.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>4</td> <td>↓ (3.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>5</td> <td>MW20-5 (0.5)</td> <td>20/10/23</td> <td>0800</td> <td></td> <td>2</td> </tr> <tr> <td>6</td> <td>↓ (1.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>7</td> <td>↓ (2.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>8</td> <td>↓ (3.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>3</td> </tr> <tr> <td>9</td> <td>↓ (4.5)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>2</td> </tr> <tr> <td>10</td> <td>↓ (6.0)</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>2</td> </tr> </tbody> </table>				Sample Barcode Label	Sample Location Identification	Date Sampled	Time Sampled	Matrix	# of Bottles	1	BH20-4 (0.5)	20/10/23	1000	Soil	3	2	↓ (1.5)	↓	↓	↓	3	3	↓ (2.5)	↓	↓	↓	3	4	↓ (3.5)	↓	↓	↓	3	5	MW20-5 (0.5)	20/10/23	0800		2	6	↓ (1.5)	↓	↓	↓	3	7	↓ (2.5)	↓	↓	↓	3	8	↓ (3.5)	↓	↓	↓	3	9	↓ (4.5)	↓	↓	↓	2	10	↓ (6.0)	↓	↓	↓	2
Sample Barcode Label	Sample Location Identification	Date Sampled	Time Sampled	Matrix	# of Bottles																																																																				
1	BH20-4 (0.5)	20/10/23	1000	Soil	3																																																																				
2	↓ (1.5)	↓	↓	↓	3																																																																				
3	↓ (2.5)	↓	↓	↓	3																																																																				
4	↓ (3.5)	↓	↓	↓	3																																																																				
5	MW20-5 (0.5)	20/10/23	0800		2																																																																				
6	↓ (1.5)	↓	↓	↓	3																																																																				
7	↓ (2.5)	↓	↓	↓	3																																																																				
8	↓ (3.5)	↓	↓	↓	3																																																																				
9	↓ (4.5)	↓	↓	↓	2																																																																				
10	↓ (6.0)	↓	↓	↓	2																																																																				
* RELINQUISHED BY (Signature/Print) <i>RM</i>		Date (YYMMDD) 20/10/23		Time 1910		RECEIVED BY (Signature/Print) ALBERT NGAI																																																																			
Date (YYMMDD) 20/10/23		Time 0800		Date (YYMMDD) 20/10/23		Time 0800																																																																			
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHOEVER IS AVAILABLE.		* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.		Lab Use Only Test Results: ☐ Temperature (°C) of Sample: 17.5/15/13/14		Custody Seal Intact on Contact: ☒ No																																																																			

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4600 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel: (604) 734-7276 Toll-Free: 800-563-6265 Fax: (604) 731-2386 www.bvlabs.com

Page 3 of 8

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only										
Company Name: #3763 KEYSTONE ENVIRONMENTAL LTD Contact Name: Ross McCarfer Address: SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3 Phone: (604) 430-0671 Fax: (604) 430-0672 Email: rmccarfer@keystoneenvironmental.ca		Company Name: _____ Contact Name: _____ Address: _____ Phone: _____ Fax: _____ Email: _____		Location #: B91097 F.O. #: _____ Project #: 15934 Project Name: _____ Site #: _____ Sampled By: <i>REM</i>		BY Labs Job #: _____ Batch Order #:  423316 Chain Of Custody Record: _____ Project Manager: _____ Lab Pedersen: _____										
Regulatory Criteria: ☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other: _____		Special Instructions: _____		ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Metals Field Filtered (F/F/M) Keystone Metals LEAD/HEAVY METALS VOC/UPH Glycols PHC F(-F)		Turnaround Time (TAT) Required: Please provide advance notice for rush projects. Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. ☐ Please note: Standard TAT for certain tests such as ROD and Diatoms/Fungi are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission): 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (call lab for #)										
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	1	2	3	4	5	6	7	8	9	10	# of Bottles	Comments
1	BH20-6 (0.5)	20/10/23	0700	Soil											3	
2	↓ (1.5)				X	X	X	X	X						3	
3	↓ (2.5)														3	
4	↓ (3.1)														3	
5	MW20-7 (0.5)	20/10/23	1300												2	Hold
6	↓ (1.5)														3	
7	↓ (2.5)														3	
8	↓ (3.5)														3	
9	↓ (4.5)				X	X			X						3	
10	BH20-8 (0.5)														2	
															3	

* REQUESTED BY: (Signature/Print) <i>REM</i>		Date: (YY/MM/DD) 20/10/23	Time 0810	RECEIVED BY: (Signature/Print) <i>ALFRED IVGAI</i>		Date: (YY/MM/DD) 20/10/27	Time 08:00	# Jars used and not submitted _____	Lab Use Only Time Sampled: _____ Temperature (°C) on Receipt: 17.15/15/13.14/15 Custody Seal intact on Container? ☒ Yes ☐ No
--	--	-------------------------------------	---------------------	--	--	-------------------------------------	----------------------	---	--

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
 * IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Bureau Veritas Canada (2019) Inc.



Chain Of Custody Record

8/1/2004

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097	RV Lab Job #	Bottle Order #
Contact Name	Ross McCarter	Contact Name		P.O. #			
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	15934	Chain of Custody Receipt	Project Manager
Phone	(604) 430-0671 Fax (604) 430-0672	Phone		Project Name			
Email	mccarter@keystoneenvironmental.ca	Email		Site #			
				Sampled by	Am		
Regulatory Criteria		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)			
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other:				Keystone Metals Lead (Pb) / PAH VOC (VPH) Alcohols PCB FL-FLY			
Turnaround Time (TAT) Required Please provide advance notice for rush projects							
Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Fluoride are > 5 days - contact your Project Manager for details.							
Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Rush Required ☐							
Rush Confirmation Number: _____ (Call lab for #)							
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix			
1	BH20-B (1.5)	20/10/26	1500	Soil	X	X	X
2	(2.5)				X	X	X
3	BH20-1 (0.5)						
4	MW20-9 (1.5)						
5	(2.5)						
6	(3.5)						
7	(5.0)						
8	(1.0)				X	X	X
9	MW20-10 (0.5)				X	X	X
10	MW20-10 (1.5)				X	X	X
RELINQUISHED BY: (Signature/Print) <i>Am</i>				DATE: (YY/MM/DD) 20/10/26		TIME: 1400	
RECEIVED BY: (Signature/Print) <i>Am</i>				DATE: (YY/MM/DD) 20/10/26		TIME: 1400	
Lab Use Only				Temperature (°C) on Receipt 17.5, 15.3, 14.15		Chain of Custody Initials on Receipt <i>Am</i>	



Chain Of Custody Record

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INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name #3763 KEYSTONE ENVIRONMENTAL LTD		Company Name _____		Duration # B91097		BV Labs Job # _____	
Contact Name Ross McCarter		Contact Name _____		P.O. # _____		Bottle Order # _____	
Address SUITE 320 4400 DOMINION STREET		Address _____		Project # 15934		Chain Of Custody Record _____	
Address BURNABY BC V5G 4G3		Phone _____		Project Name _____		Project Manager _____	
Phone (604) 430-0671 Fax (604) 430-0672		Fax _____		Site # _____		CM023318-04 G3	
Email rmccarter@keystoneenvironmental.ca		Email _____		Sampled By RHM		Call Pedersen _____	
Regulatory Criteria:		Special Instructions _____		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)			
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other _____				X Keystone Metals X LEAD / HEM / PAH VOC / TPH Gases X PHC FI-FU			
Turnaround Time (TAT) Required: Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Oxygen are > 5 days - contact your Project Manager for details.							
Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ Rush Confirmation Number: _____ (Call lab for #)							
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS # of Bottles Comments							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix			
1	MW20-10 (2.5)	20/10/26	1200	Soil	X	X	X
2	(3.5)						
3	MW20-11 (0.5)				X	X	X
4	(1.5)				X	X	X
5	MW20-12 (0.3)				X	X	X
6	(0.2)						
7	(1.5)						
8	(2.5)						
9	(3.5)						
10	MW20-13 (0.5)				X	X	X
RELINQUISHED BY: (Signature/Print) RHM Date (YY/MM/DD) 20/10/26 Time 1900 RECEIVED BY: (Signature/Print) ALBERT MASH Date (YY/MM/DD) 20/10/27 Time 08:00 # jars used and not submitted Lab Use Only Temperature (°C) at Receipt 11.5/15/13/14/15 Custody Seal intact on Receipt ☒							
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT www.bv-labs.com/terms-and-conditions . IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.							

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Chain of Custody Record

Bureau Veritas Laboratories
4606 Canada Way Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free 800-563-6266 Fax:(604) 731 2366 www.bvlabs.com

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097	SV Labs Job #	Bottle Order #
Contact Name	Ross McCarter	Contact Name		P.O.#			
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	22890 / 15434		
Phone	(604) 430-0671	Phone		Project Name		Chain Of Custody Record	Project Manager
Email	mccarter@keystoneenvironmental.ca	Email		Site #			
		Fax		Sampled By	RAM		
Regulatory Criteria		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required	
☒ CSR						Please provide without notice for rush projects	
☒ CCME						Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Oxygen are > 5 days - contact your Project Manager for details.	
☐ BC Water Quality						Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____	
☐ Other _____						Rush Confirmation Number: _____ (Call lab for #)	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS							
Sample Barcode Label	Sample Location Identification	Date Sampled	Time Sampled	Matrix	Metallic Field Filtered (V.F.N.)	# of Bottles	Comments
1	MW20-12(1.5)	20/10/26	1600	Soil	KEYSTONE METALS	2	
2	BH20-11(0.5)				LEAD/HKPH/CATH	3	
3	(1.5)				NOC/VPH	3	
4	(2.5)				PHC FI-EU	2	
5	(4.0)				Glycols	3	
6	(5.3)					2	
7	(6.5)					3	
8	MW20-15(0.5)					2	
9	(1.5)					3	
10	(2.5)					3	
RELINQUISHED BY: (Signature/Print)		Date: (YYMMDD)	Time	RECEIVED BY: (Signature/Print)		Date: (YYMMDD)	Time
RM RAM		20/10/26	LMD	MARTIN NGAI		2020/10/26	08:00
# Jars used and not submitted				# Jars used and not submitted			
Temperature (°C) or Reagent				Temperature (°C) or Reagent			
17.5/15.5/13.1/4.1/5				17.5/15.5/13.1/4.1/5			
Custody Seal Intact on Content?				Custody Seal Intact on Content?			
Yes No				Yes No			
WHN: BV LABS				Yellow: Client			

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Chain Of Custody Record

Page 7 of 8

INVOICE TO:			Report Information			Project Information			Laboratory Use Only							
Company Name #3763 KEYSTONE ENVIRONMENTAL LTD			Company Name _____			Outstation # B91097			BV Labs Job # _____							
Contact Name Ross McCarter			Contact Name _____			P.O. # _____			Bottle Order # 							
Address SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3			Address _____			Project # 12670 15434			Chain Of Custody Record 							
Phone (604) 430-0671 Fax (604) 430-0672			Phone _____ Fax _____			Project Name _____			Project Manager _____							
Email rmccarter@keystoneenvironmental.ca			Email _____			Site # _____			Call Protocol 							
Completed By Rm			Special Instructions _____			Analysis Requested (Please Be Specific) _____			Turnaround Time (TAT) Required _____							
Regulatory Criteria: ☒ GSR ☒ CCME ☐ BC Water Quality ☐ Other _____			Metals Field Filtered = (Y/N) Y Keystone Metals LEAD/BIOPH/PAH VOI/UPH PHC E-ELU Glycols			Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Oxygen are > 5 days - contact your Project Manager for details.			Job Specific Rush TAT (if applies to entire submission) 1 Day ☐ 2 Day ☐ 3 Day ☐ Date Required _____ Rush Confirmation Number: _____ (call toll free #)							
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals	Leads	Bioph	PAHs	VOI	UPH	PHC	E-ELU	Glycols	# of Bottles	Comments	
1	MW 20-15 (3.5)	20/10/26	1300	5m										2		
2	(4.5)													2		
3	(5.5)													2		
4	(6.5)				X	X					X			2	HOLD	
5	(7.5)													3		
6	(8.5)													2		
7	BH 20-16 (0.5)				X	X	X	X	X					3		
8	(1.5)				X	X				X				3		
9	(2.5)				X	X				X				3		
10	(3.5)													3		
RELINQUISHED BY: (Signature/Print) Mr RM		Date: (YY/MM/DD) 20/10/26	Time 1300	RECEIVED BY: (Signature/Print) ALCERD MSH		Date: (YY/MM/DD) 20/10/27	Time 08:00	# Jars used and submitted	Lab User Only		Custody Seal Intact on Container? ☒		Temp (°C) on Receipt 12.5, 15.5, 17.5		Initials: RM	

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Bureau Veritas Laboratories
4005 Canada Way, Burnaby, British Columbia Canada V5G 1Y3 Tel (604) 734 7276 Toll free 800 553 6265 Fax (604) 731 2306 www.bvlabs.com

Page 8 of 9

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Question #	B91097	BY Lab Job #	Batch Order #
Contact Name	Ross McCarter	Contact Name		P.O. #			
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	33820 15131		
Phone	(604) 430-0671 Fax (604) 430-0672	Phone		Project Name		Chain Of Custody Record	Project Manager
Email	rmccarter@keystoneenvironmental.ca	Email		Site #			
Regulatory Crisis		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required	
☒ CSR ☒ CCME ☐ BC Water Quality ☐ Other				Keystone Metals Lead/Heavy Metals VOC/VPH PCB FI-FL Glycols		Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT - 5-7 working days for most tests. Please note: Standard TAT for certain tests such as BOD and Gassing/Furnace are + 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐ Rush Confirmation Number: _____ (print lab for #)	
SAMPLES MUST BE KEPT COOL (+ 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BY LABS							
Sample Barcode Label	Sample Location Identification	Date Sampled	Time Sampled	Media	Matrix	# of Bottles	Comments
1	BH20-16(45)	20/10/26	1700	Soil		2	
2	BH20-A	20/10/26	1200			3	
3	BH20-B	↓	↓			3	
4	BH20-C	20/10/26	↓			3	
5	BH20-D	20/10/26	↓			3	
6	MW20-E	20/10/26	↓			3	
7	MW20-F	↓	↓			3	
8						3	
9						3	
10						3	
11						3	
12						3	
13						3	

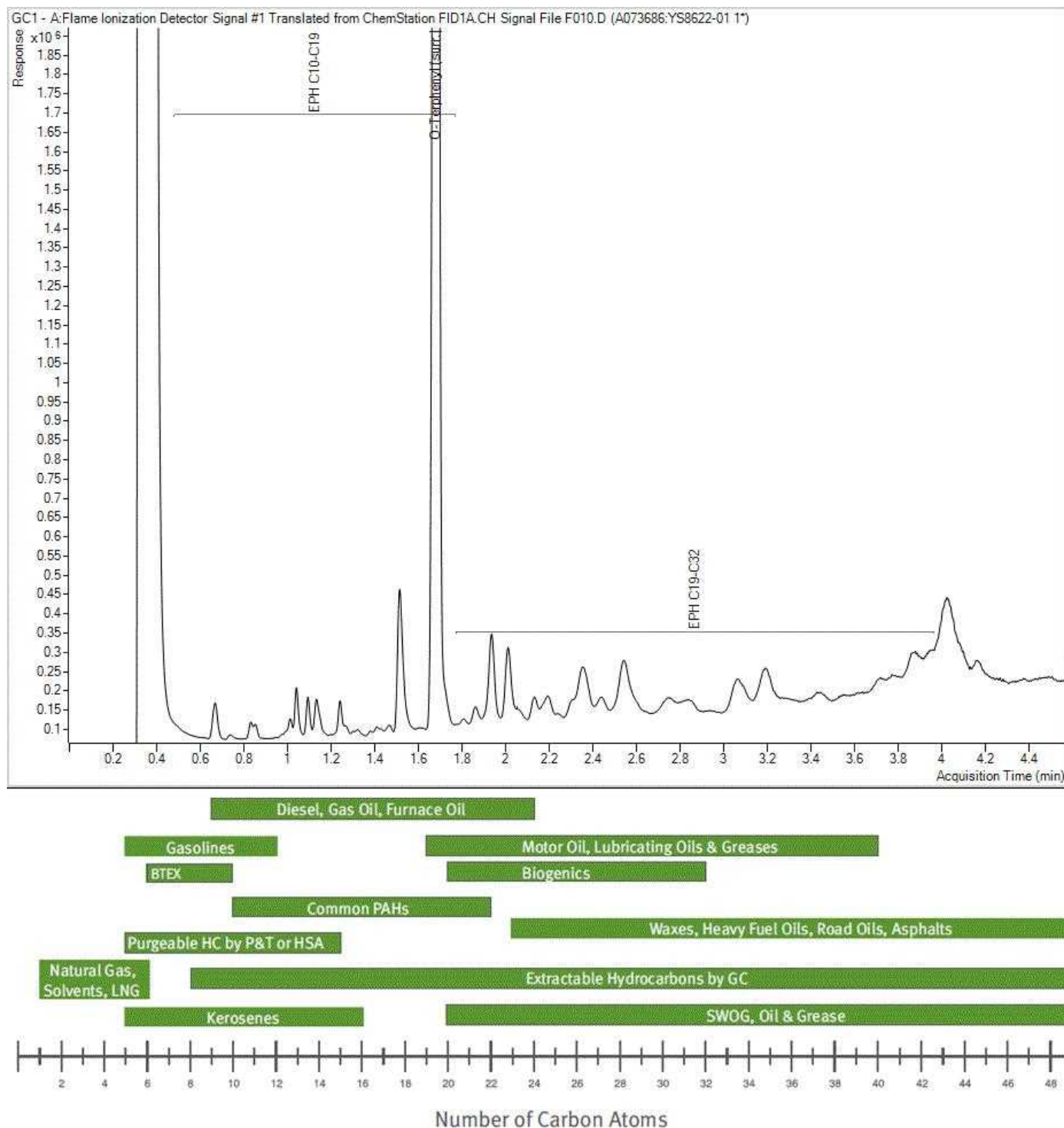
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Lab Use Only	
RM RM		20/10/26	1810	[Signature] ALFRED NGAI		20/10/27	18:00		Temp/Time: ☐ 17/15/18/14/15 Temp/Time: ☐ 17/15/18/14/15 Custody Seal Intact or Compromised? ☒ Yes ☐ No	

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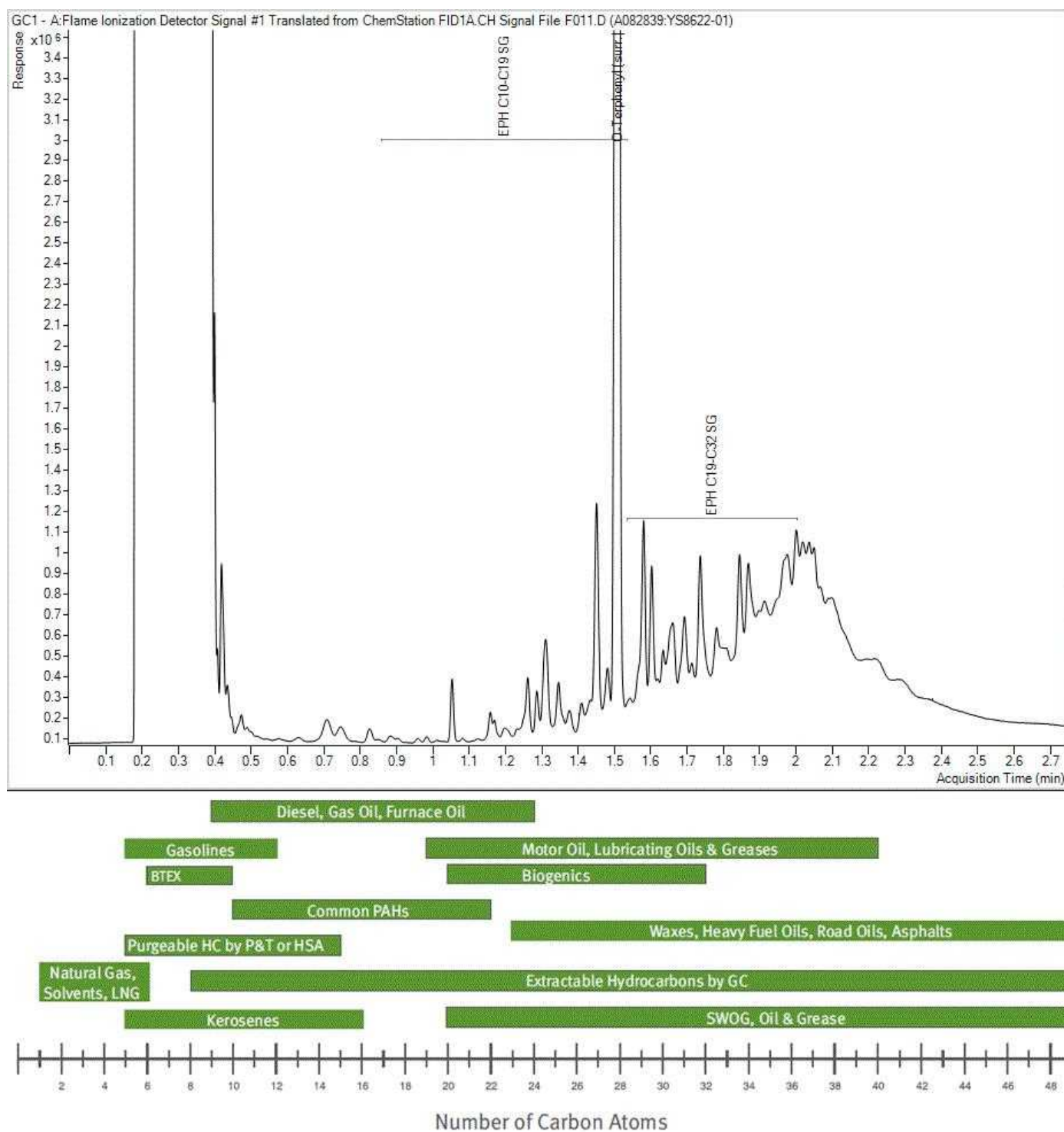
Bureau Veritas Canada (2018) Inc.

EPH in Soil by GC/FID Chromatogram



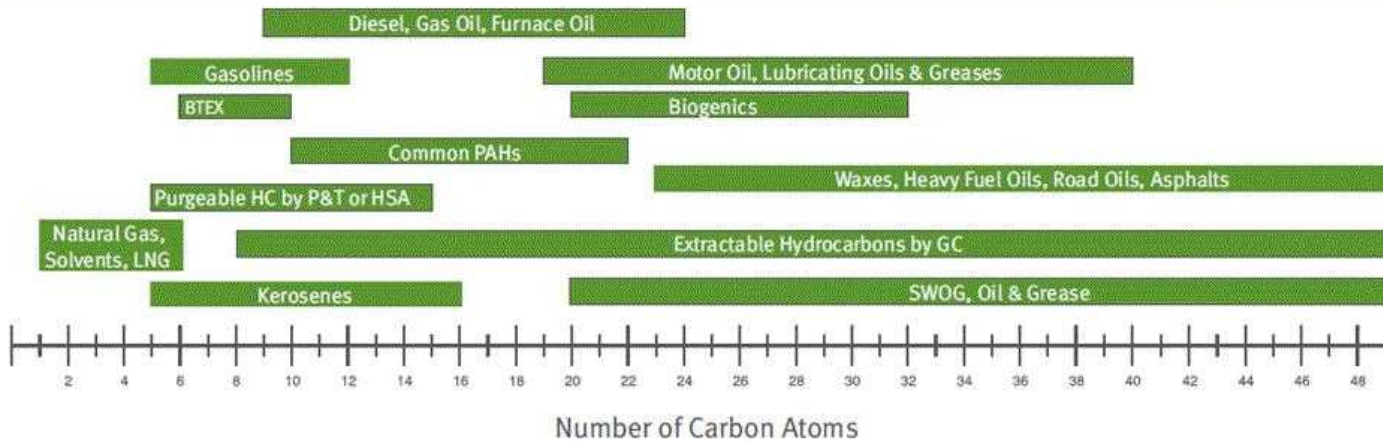
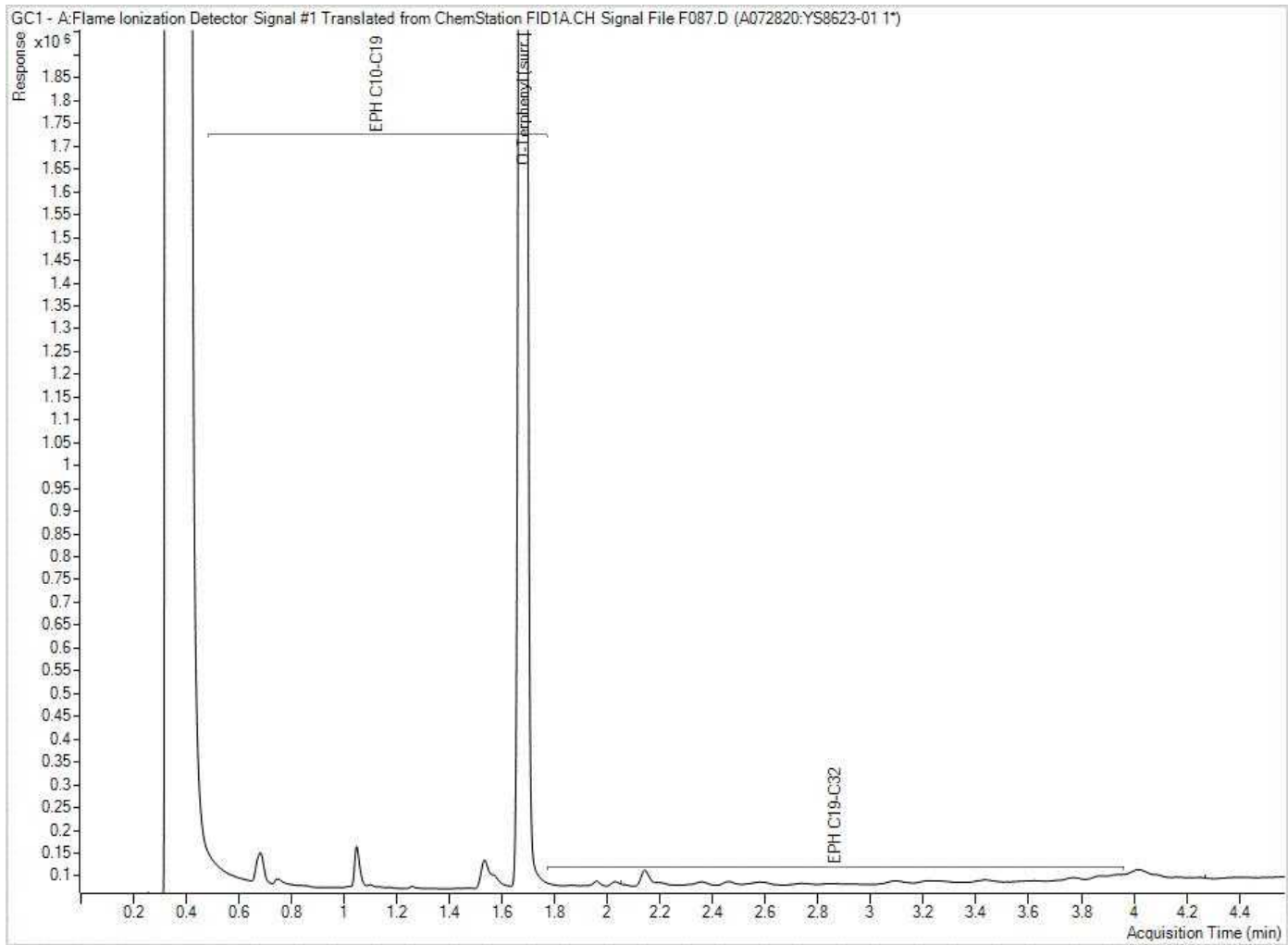
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by SG GC/FID Chromatogram



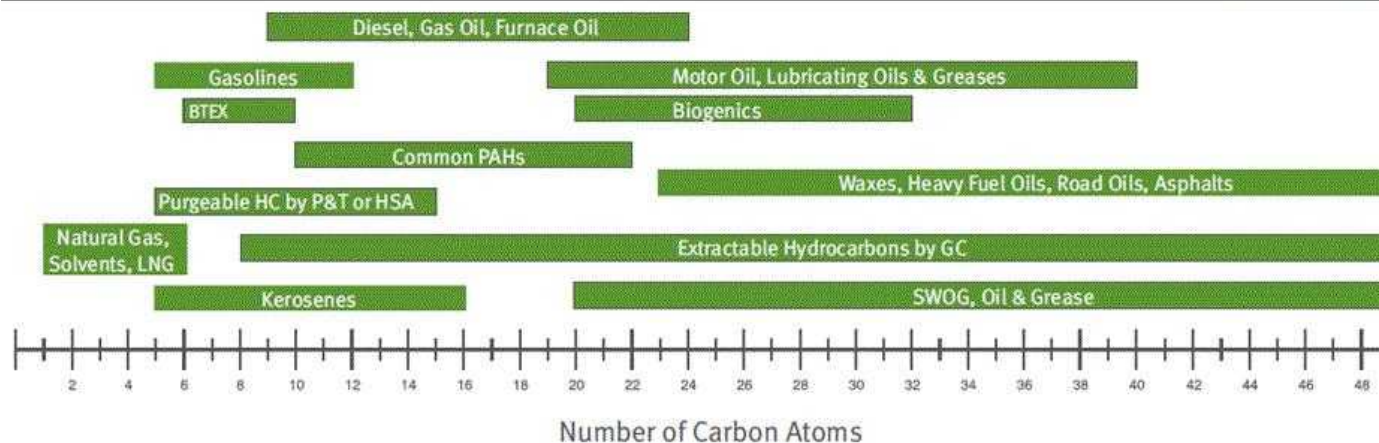
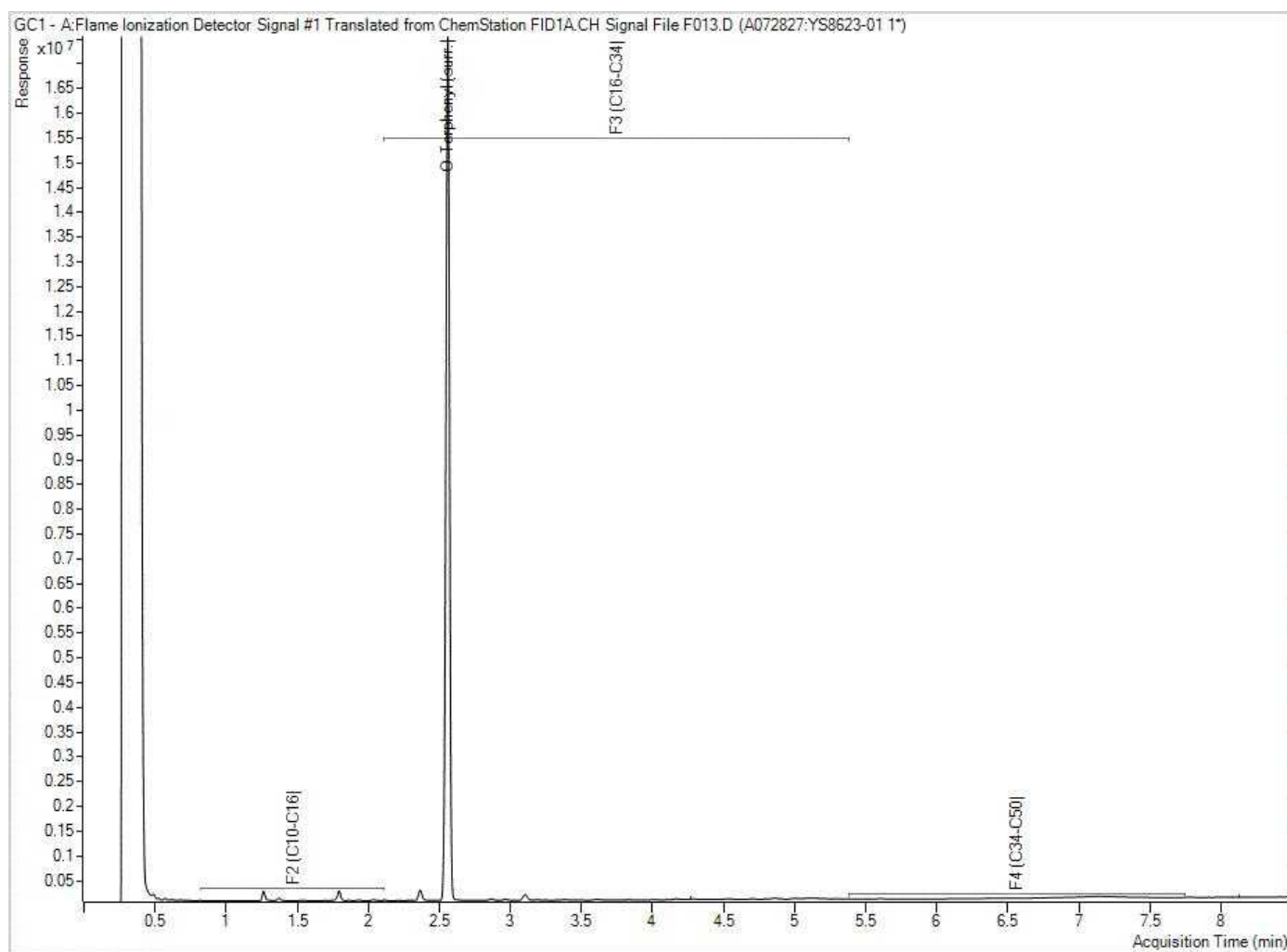
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EPH in Soil by GC/FID Chromatogram



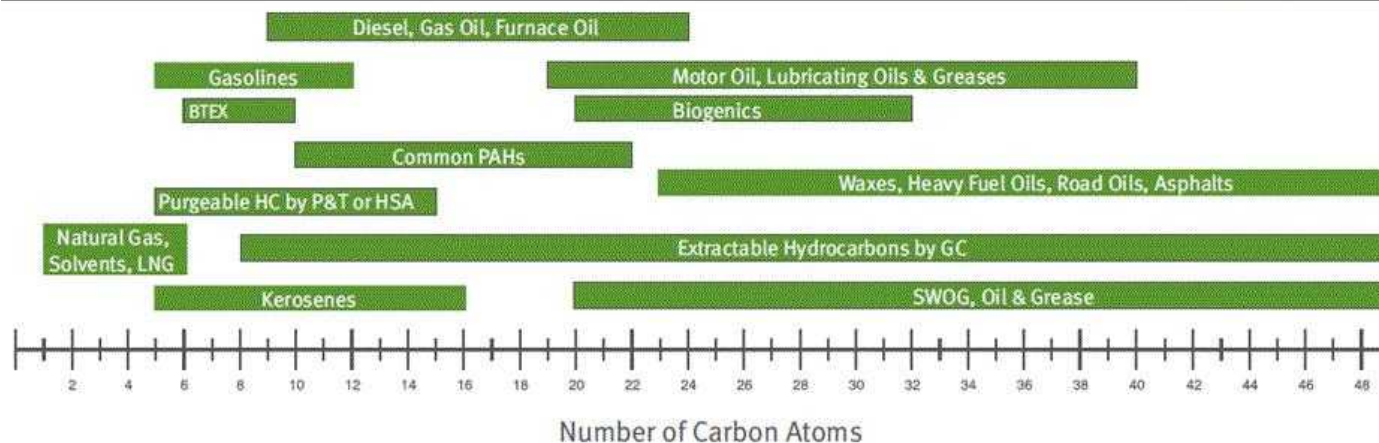
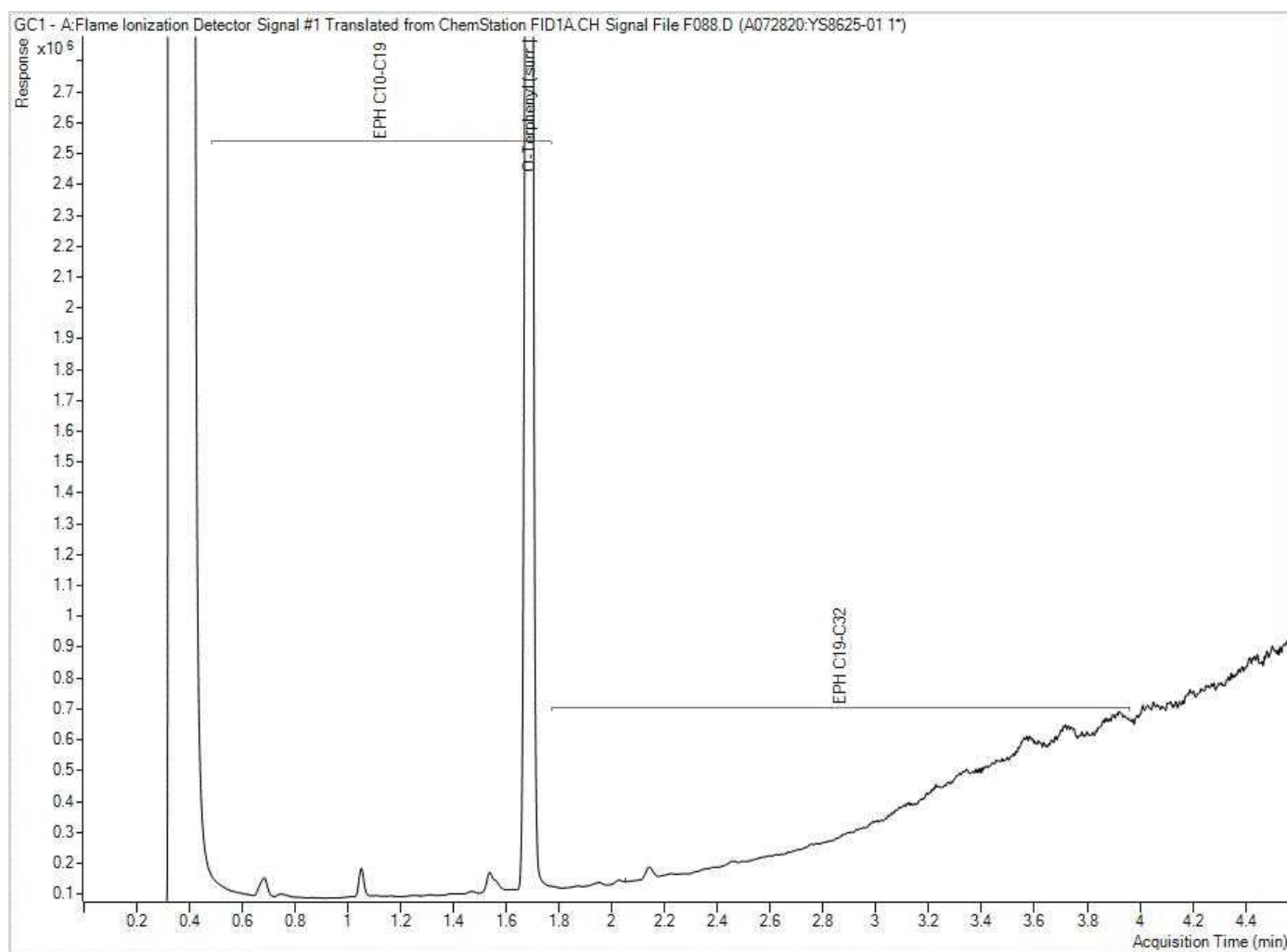
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



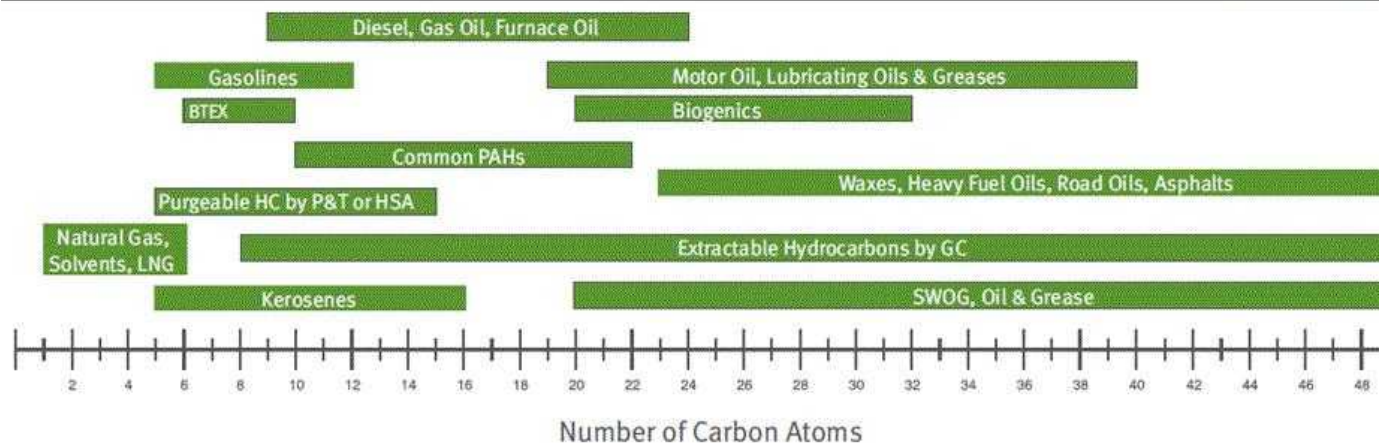
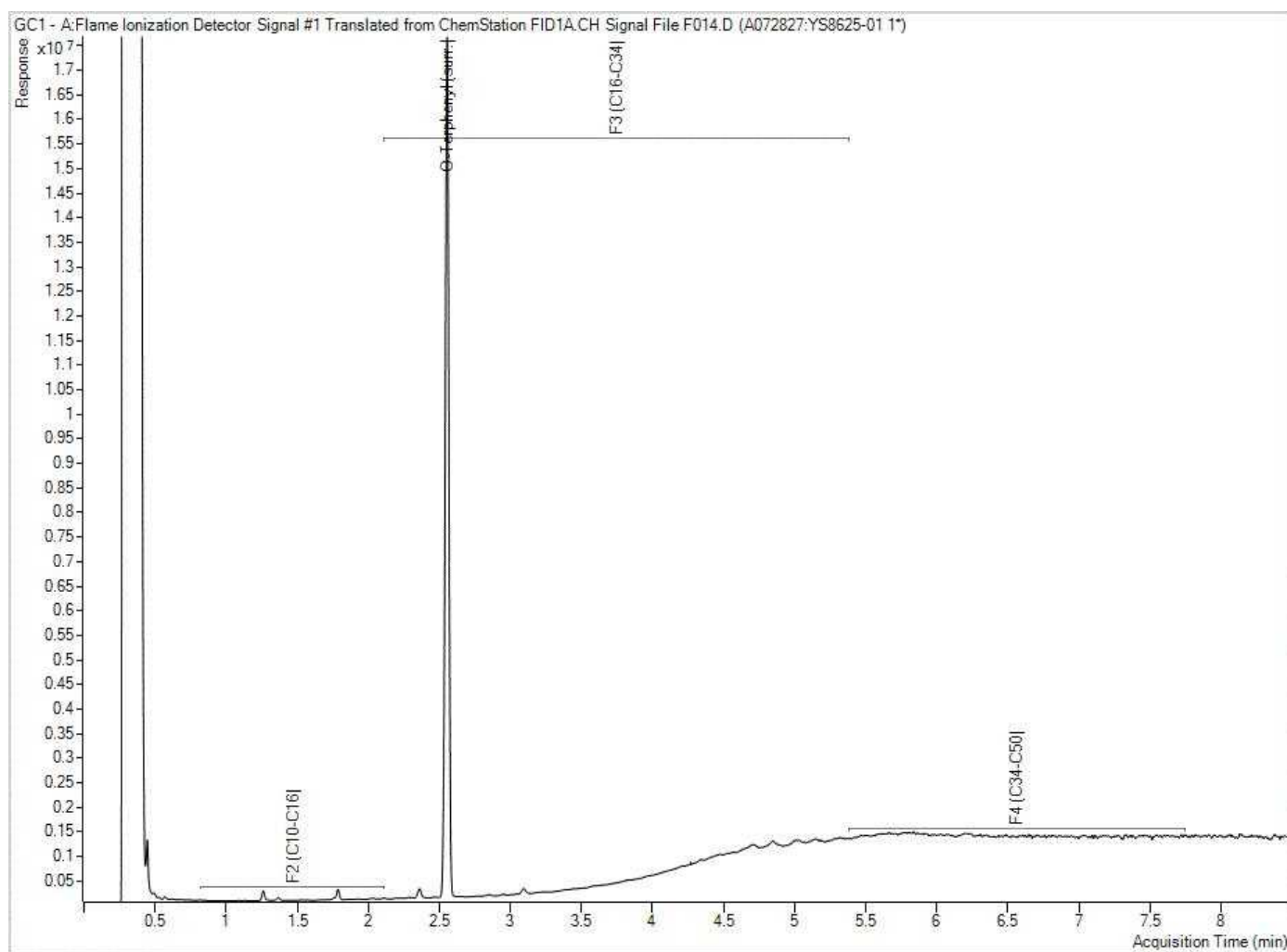
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EPH in Soil by GC/FID Chromatogram



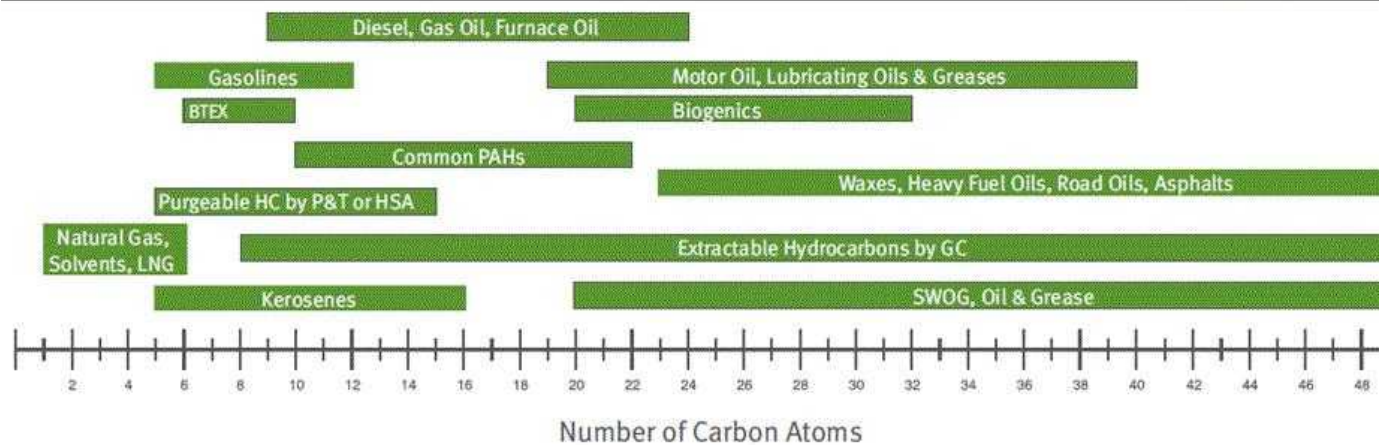
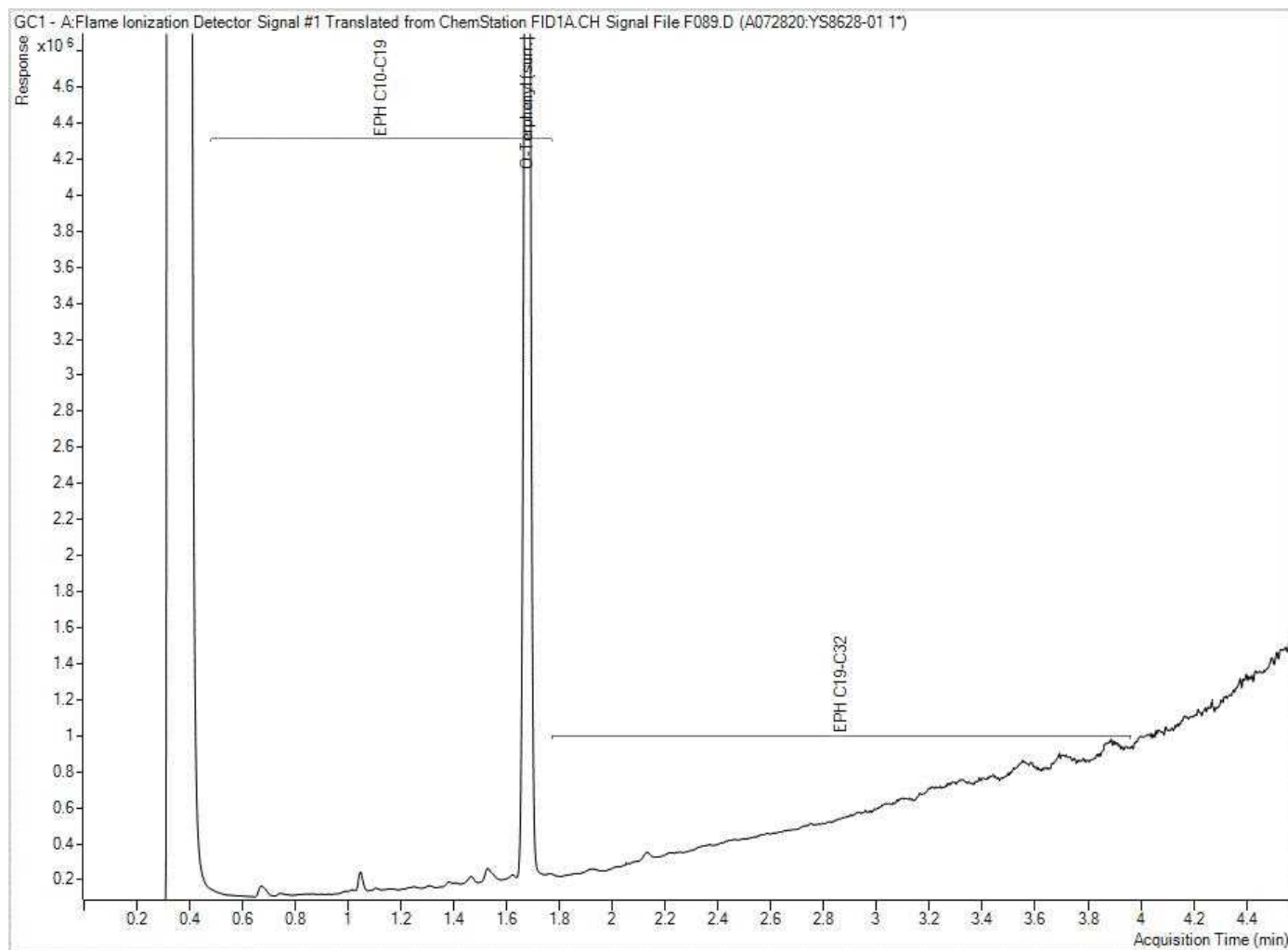
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



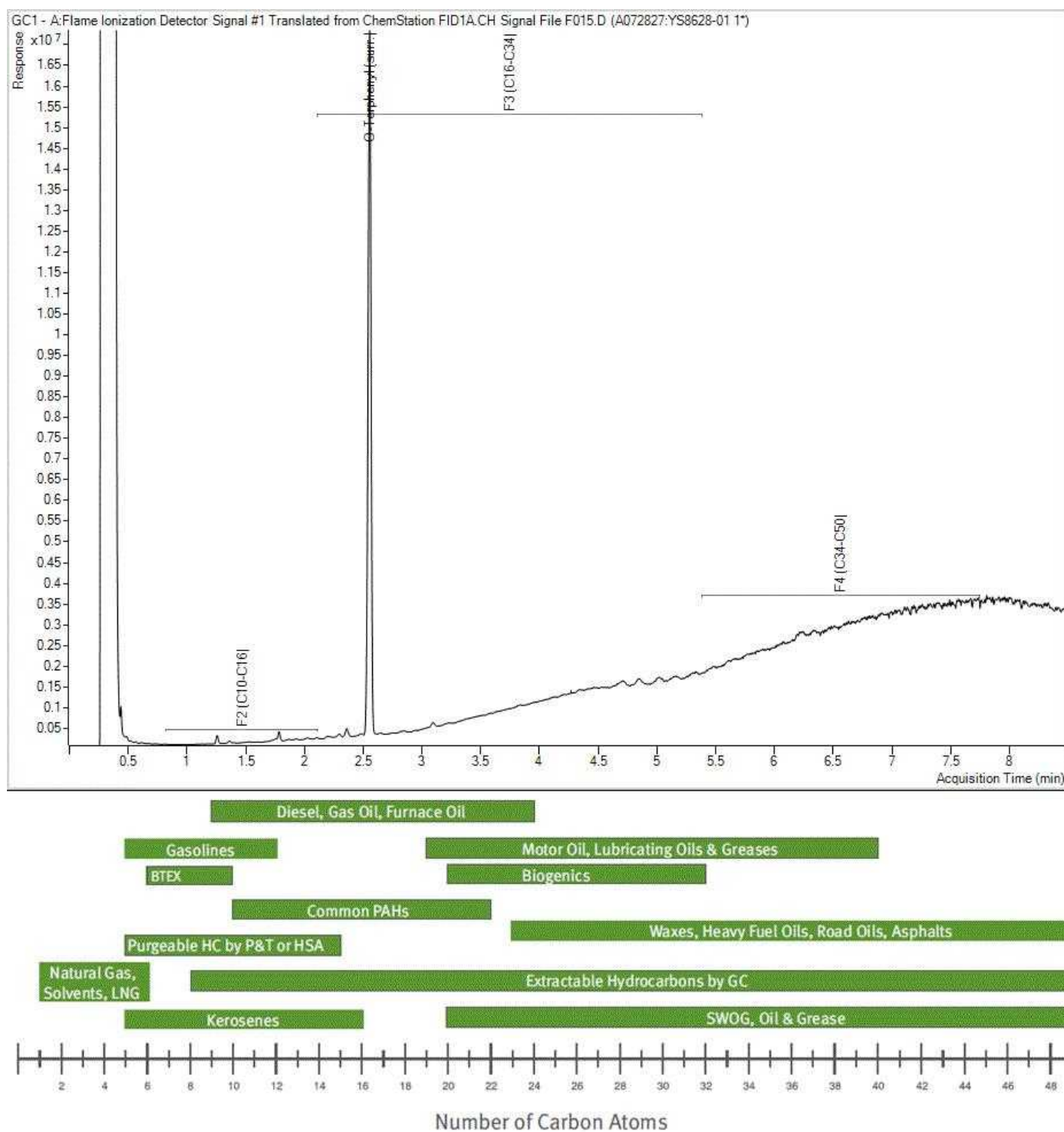
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EPH in Soil by GC/FID Chromatogram



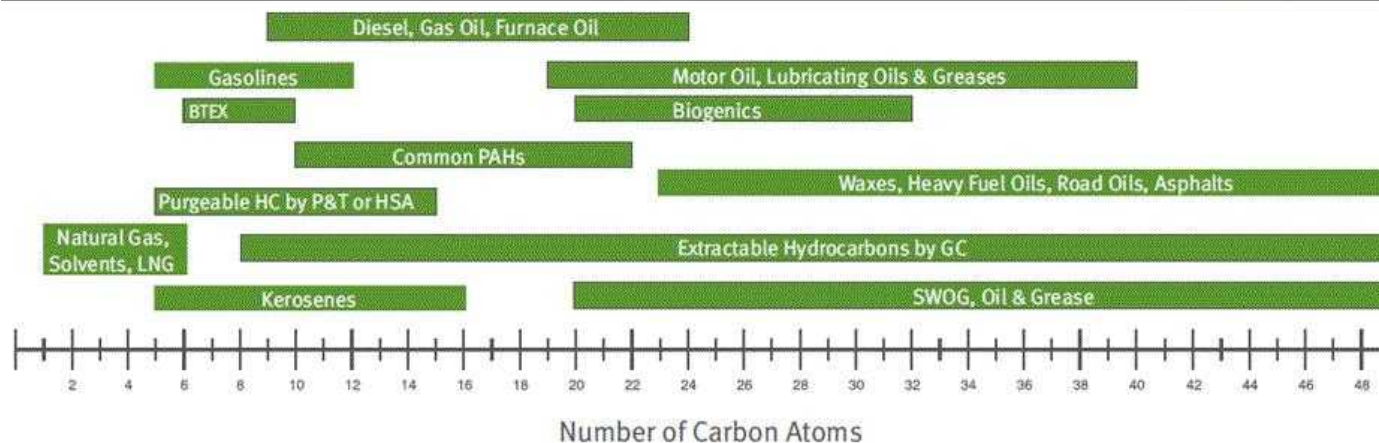
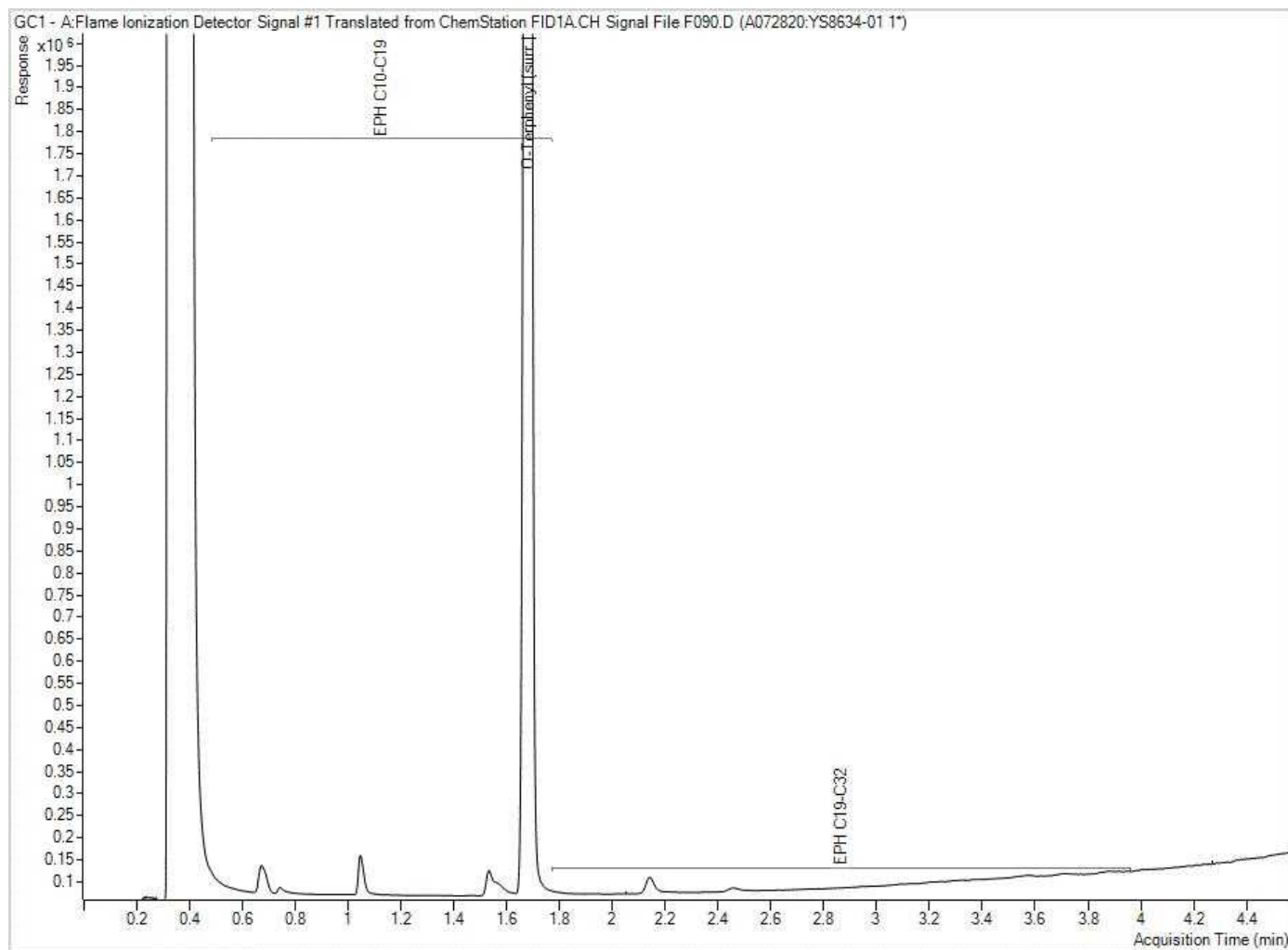
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



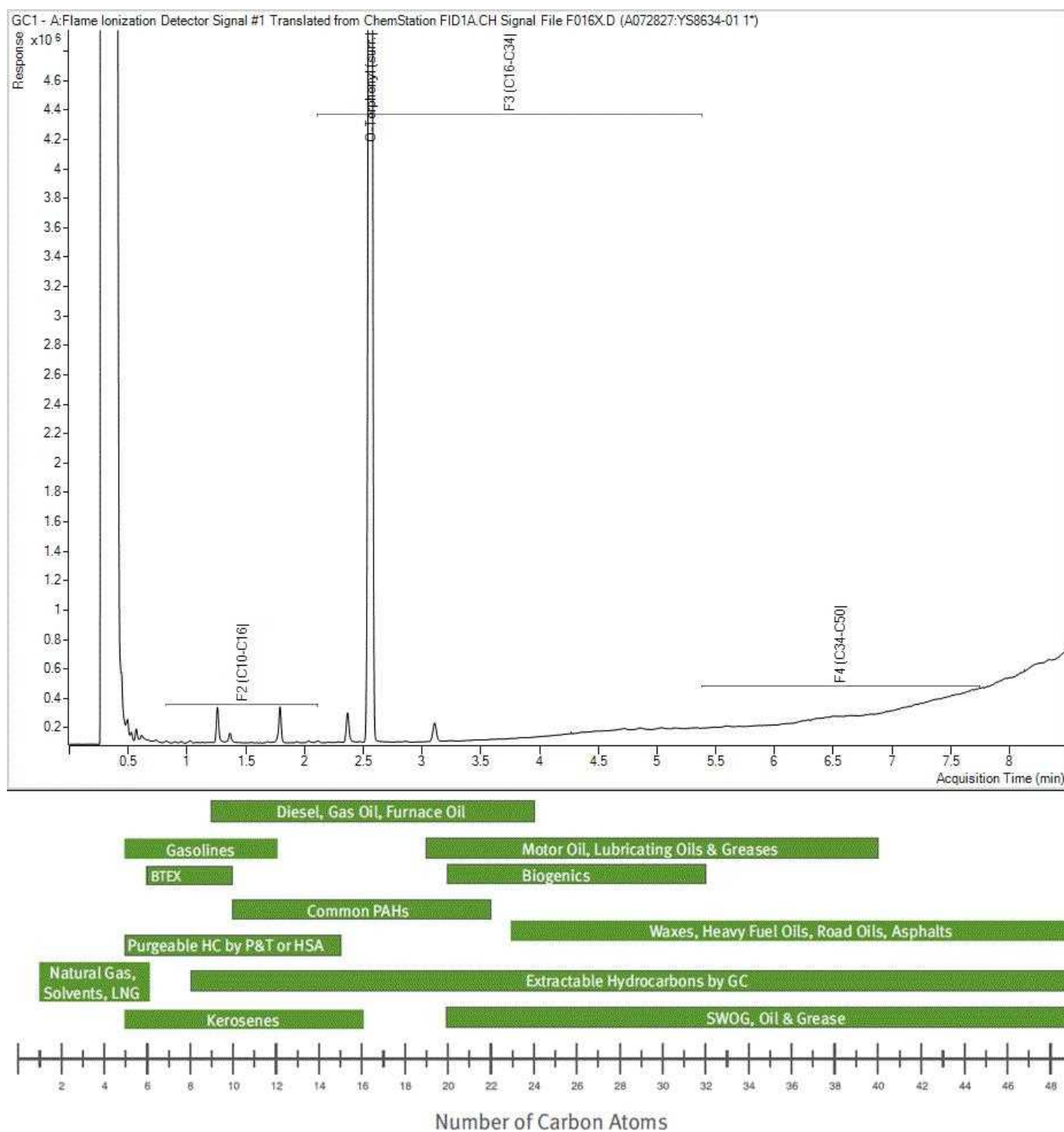
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EPH in Soil by GC/FID Chromatogram



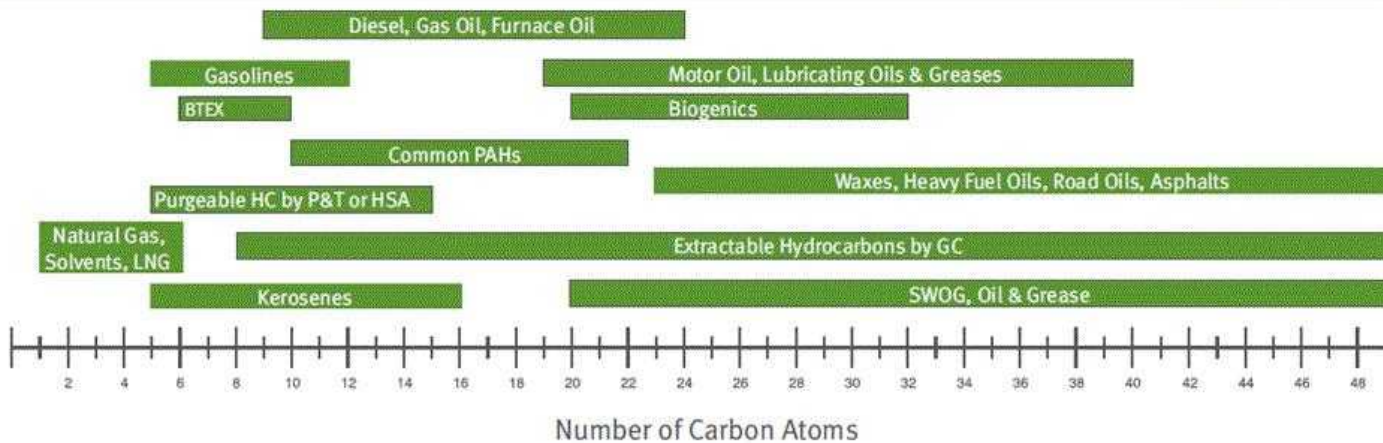
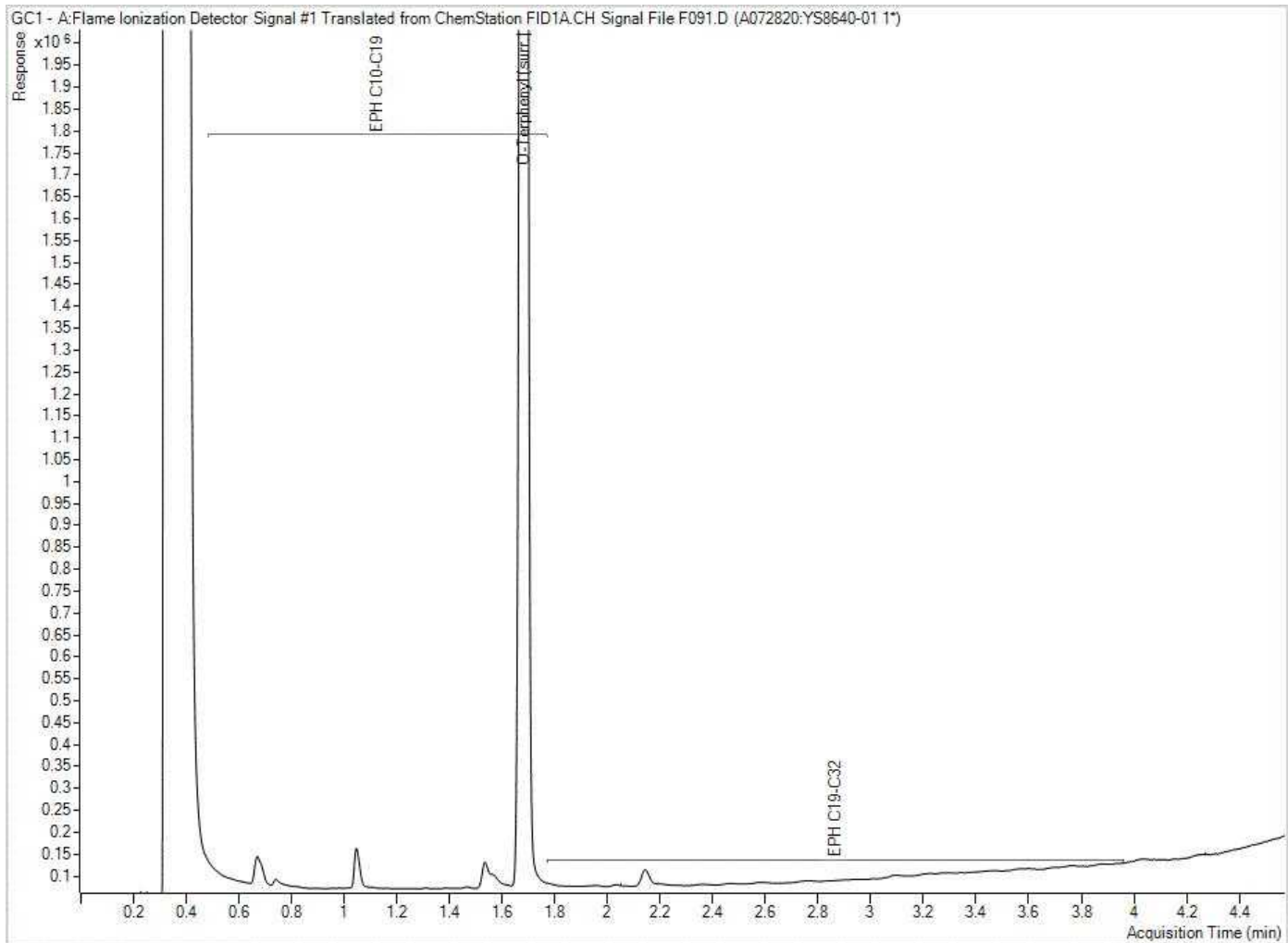
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



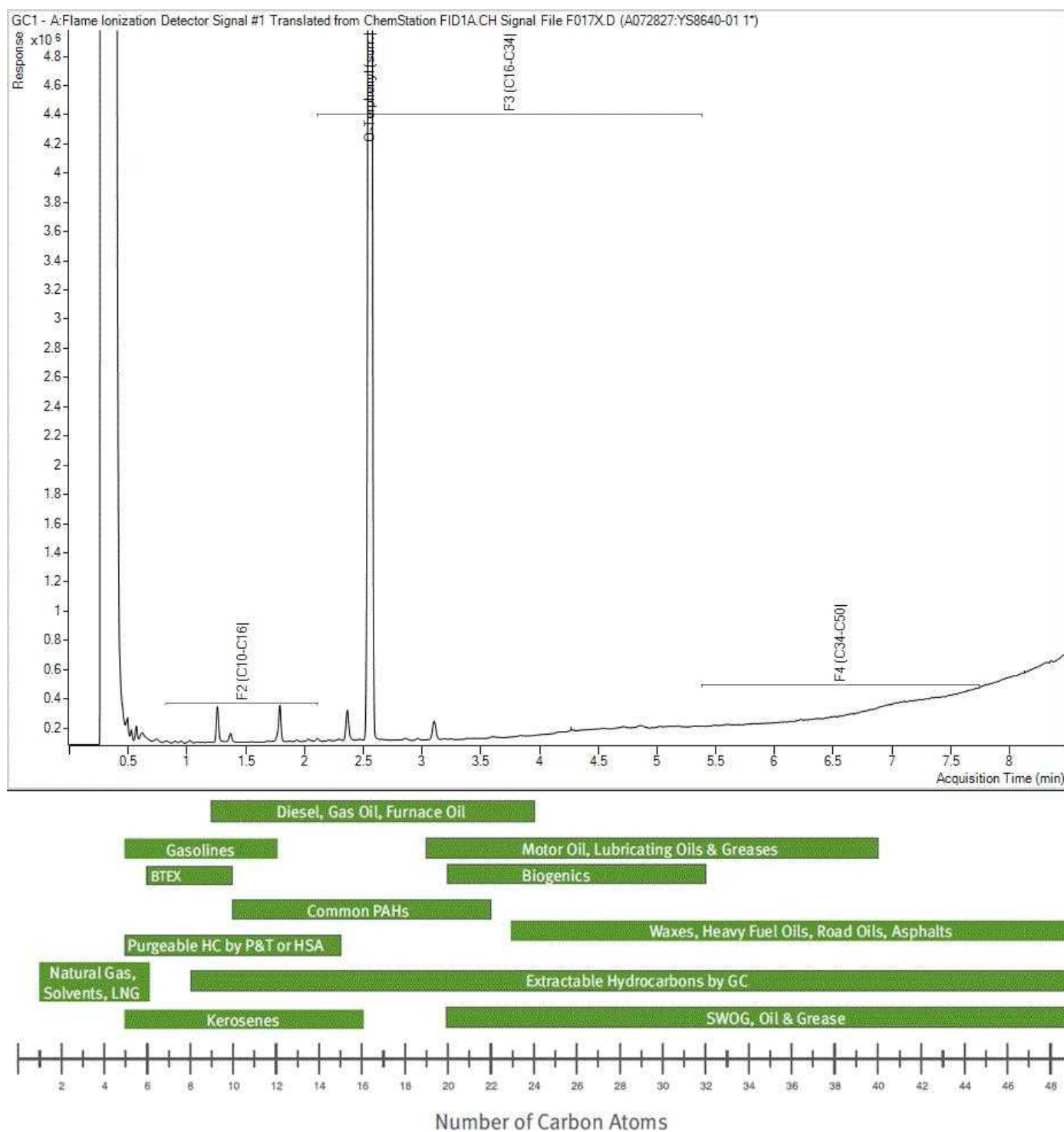
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EPH in Soil by GC/FID Chromatogram



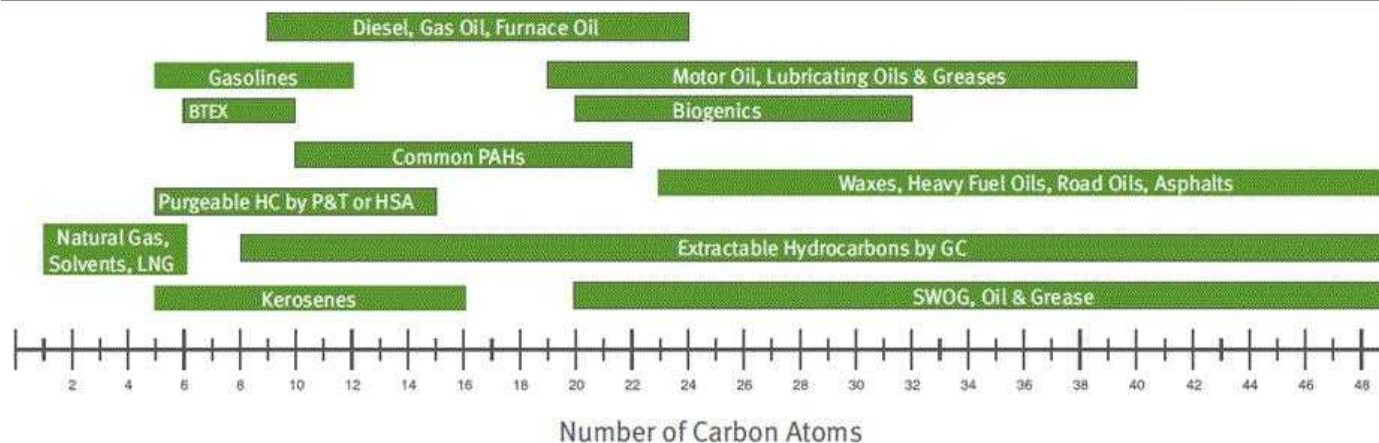
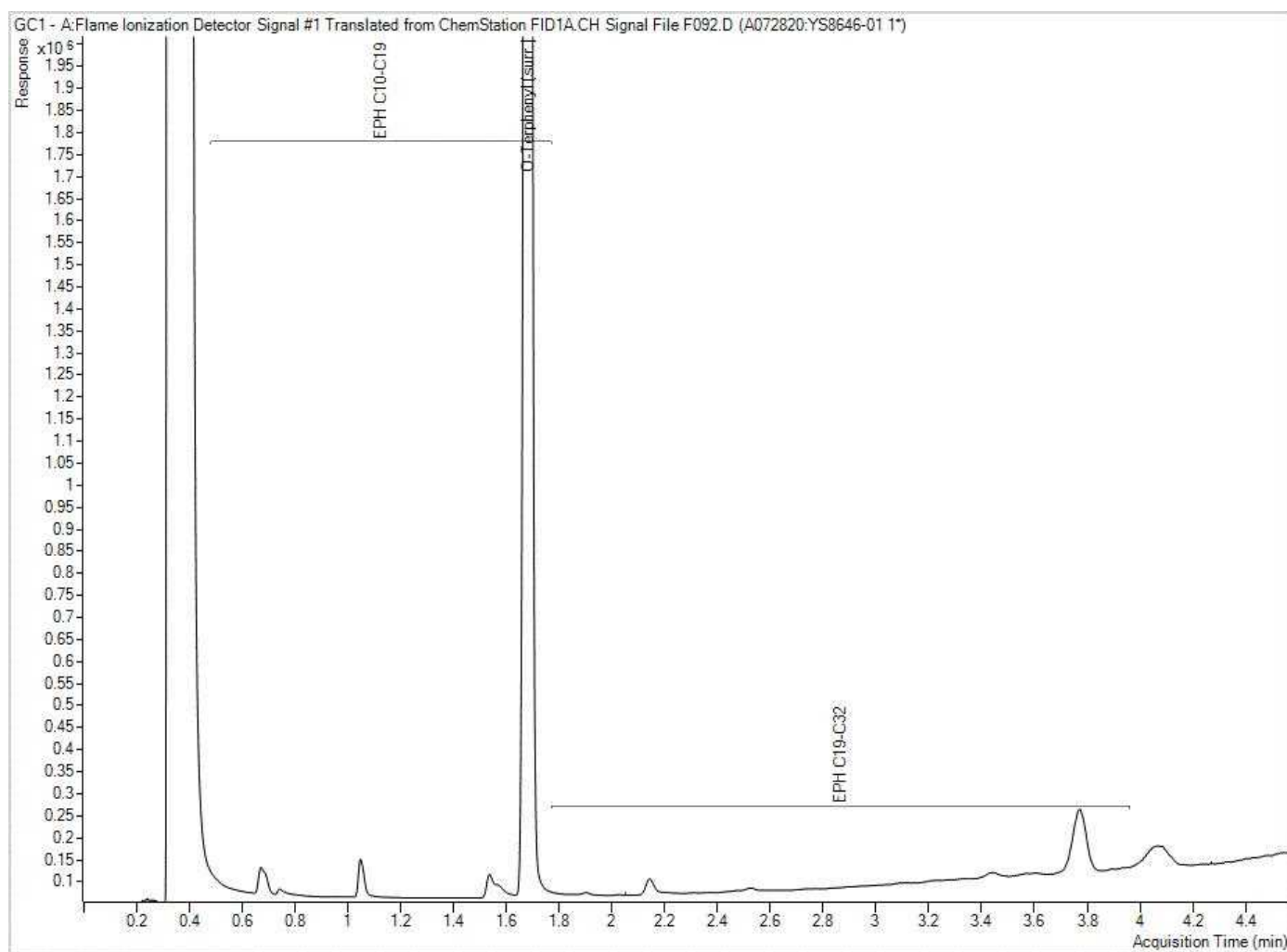
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



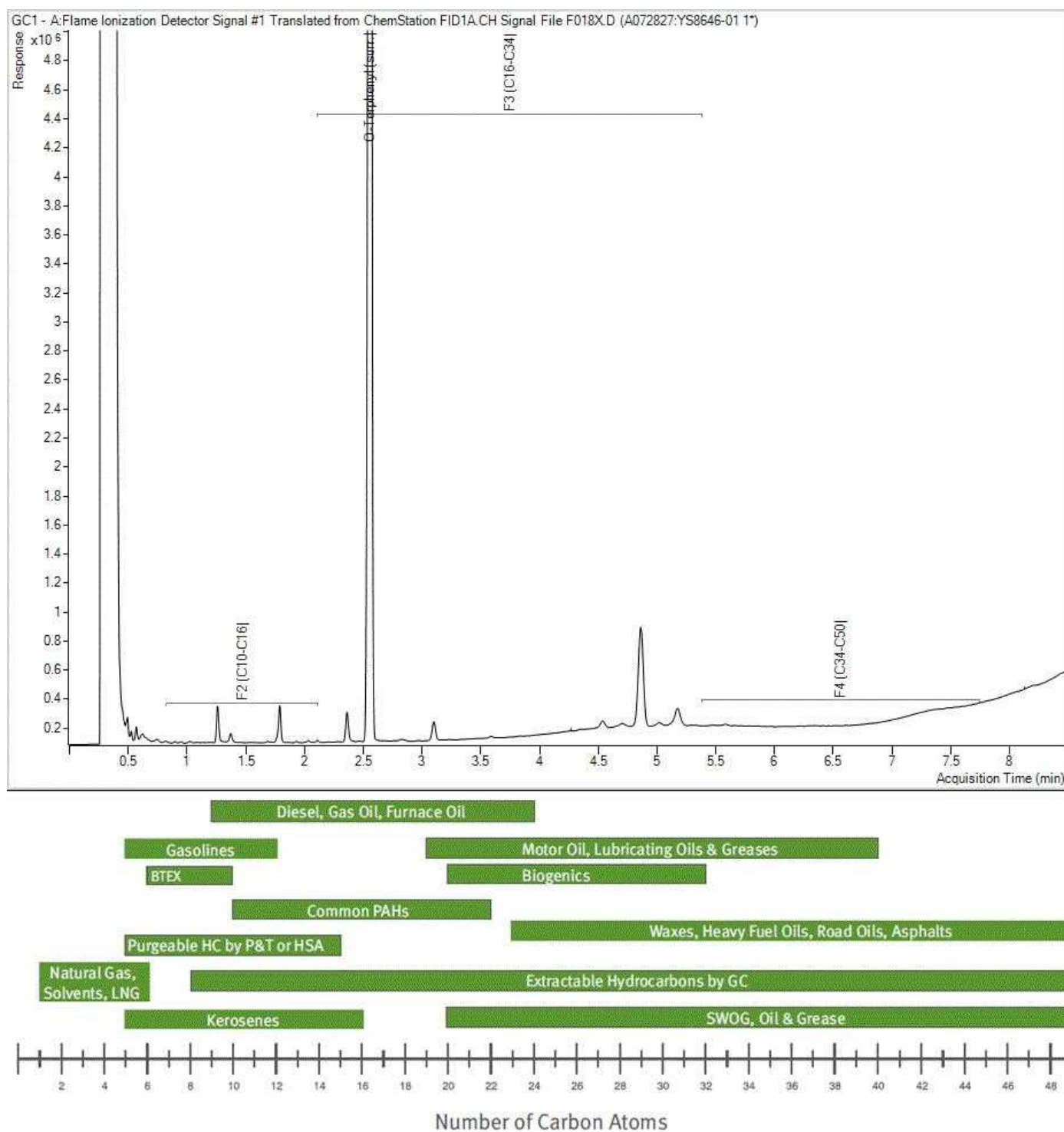
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EPH in Soil by GC/FID Chromatogram



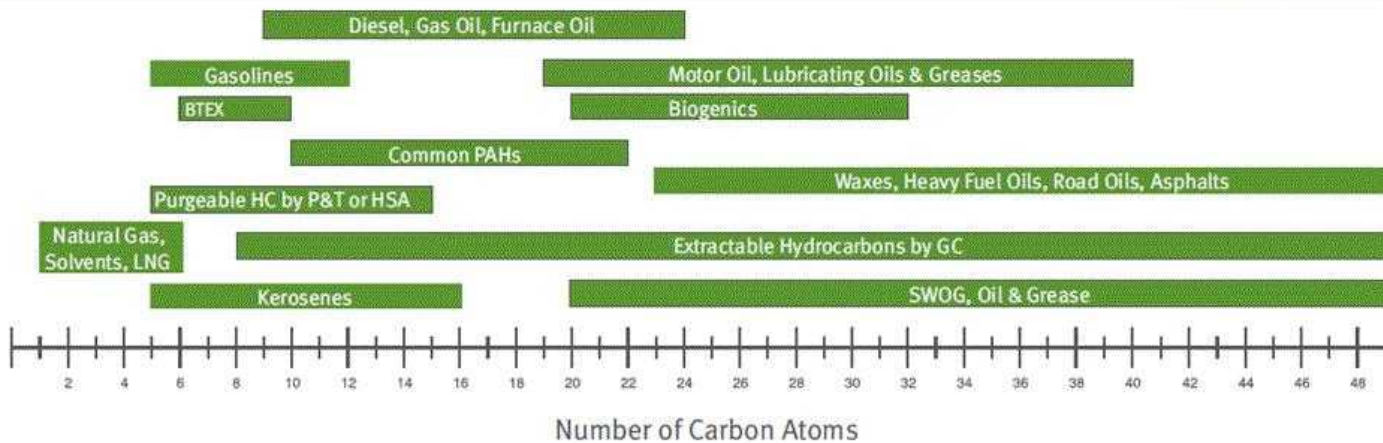
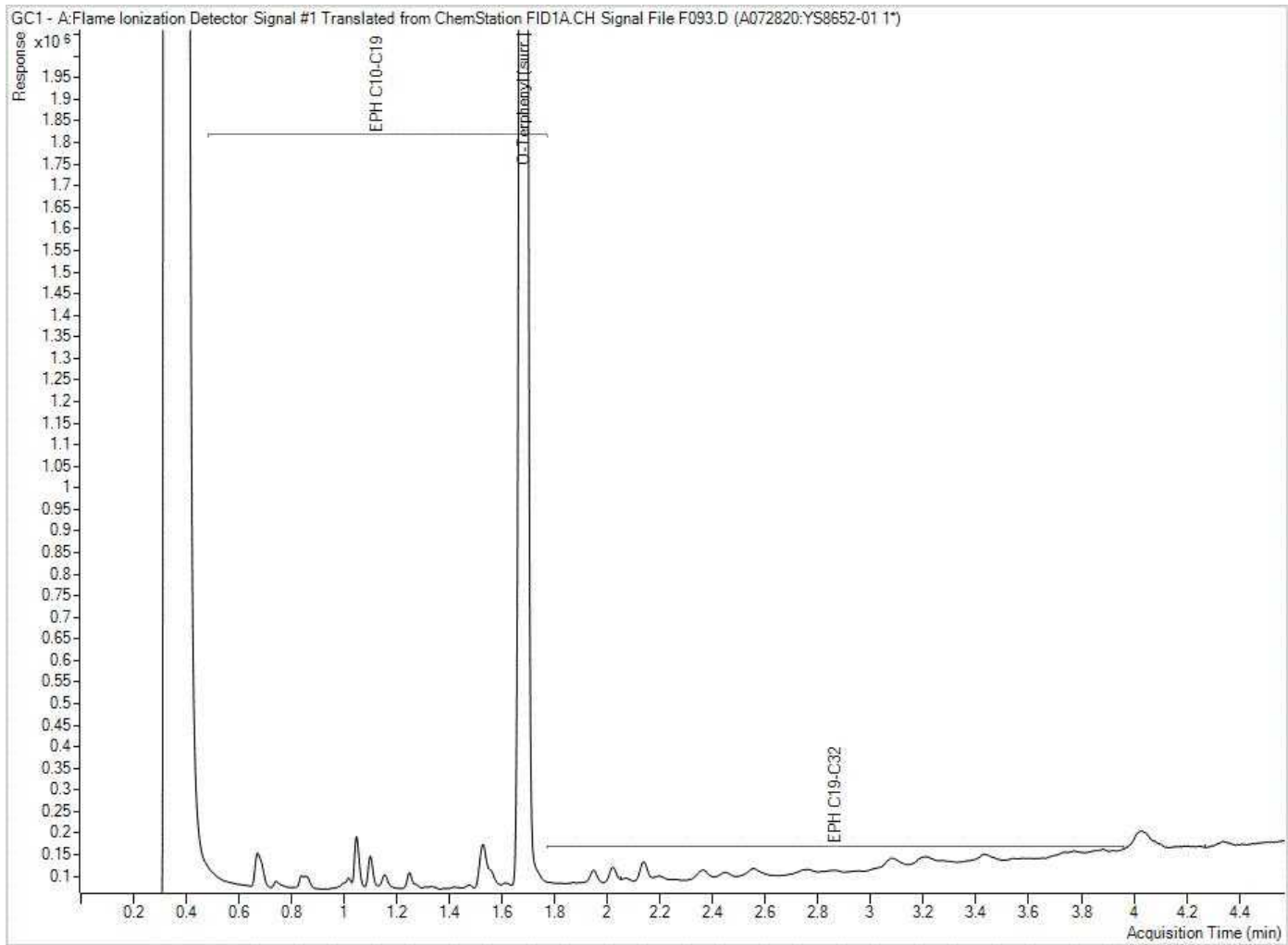
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



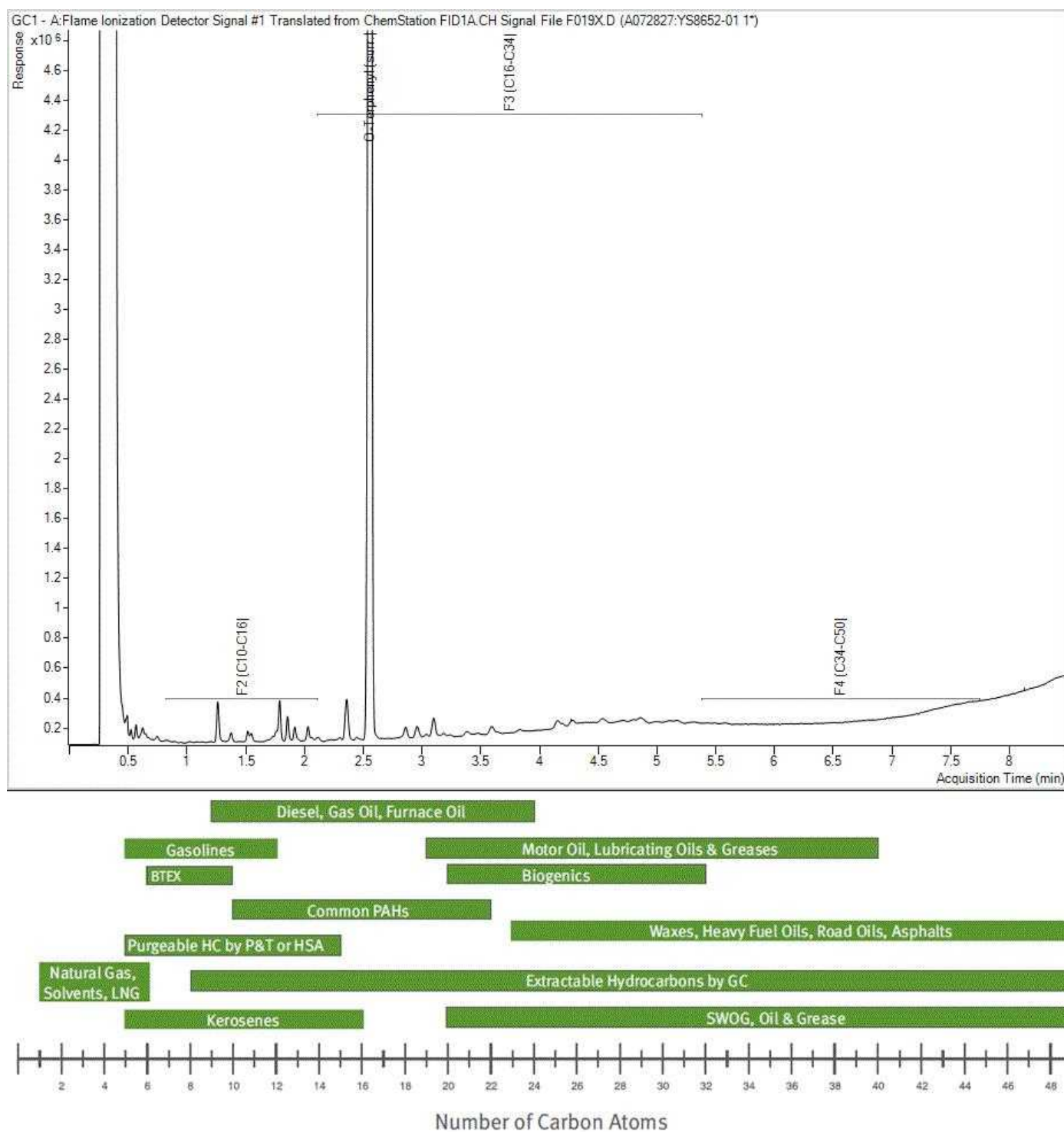
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EPH in Soil by GC/FID Chromatogram



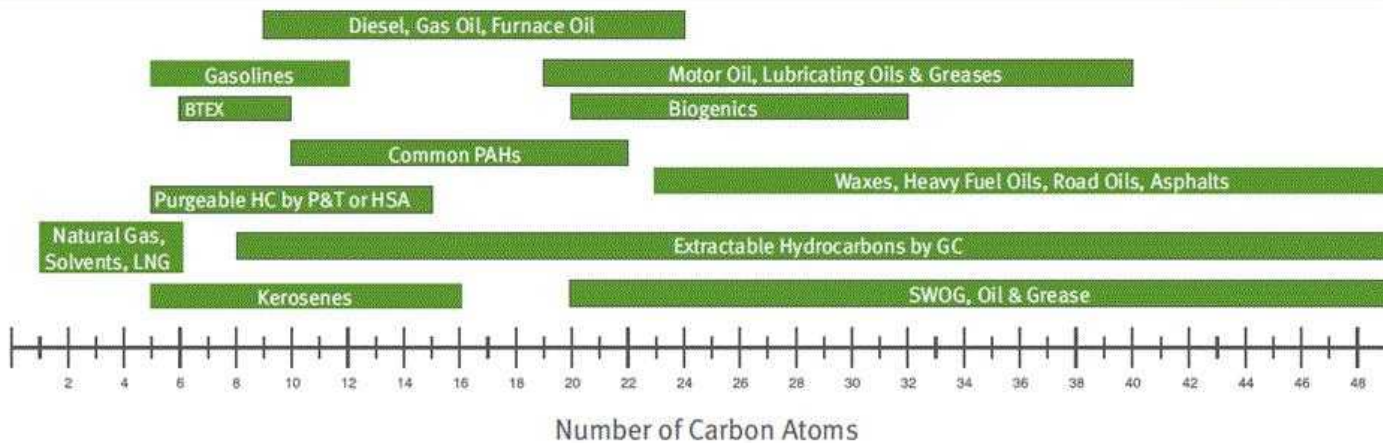
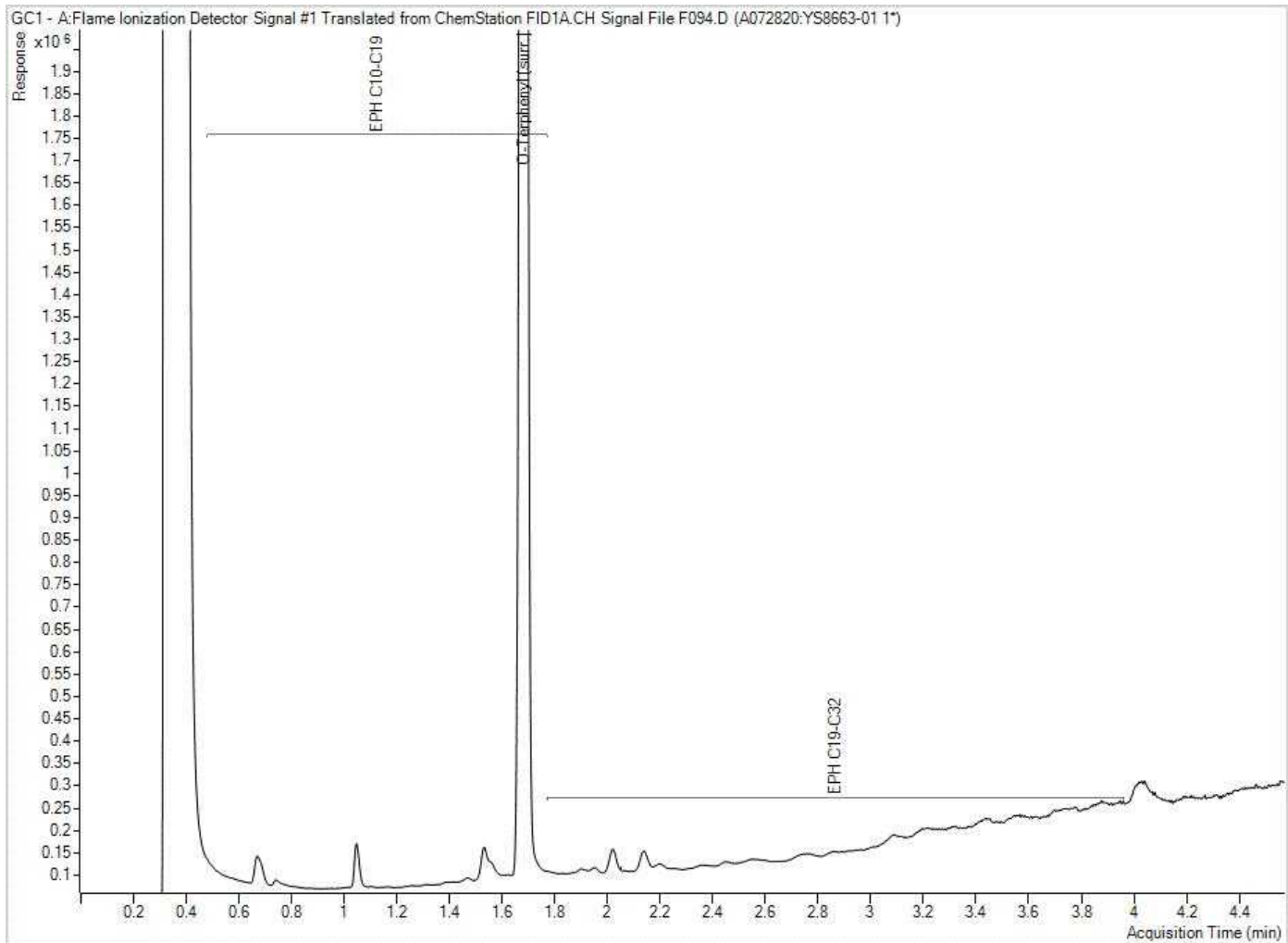
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



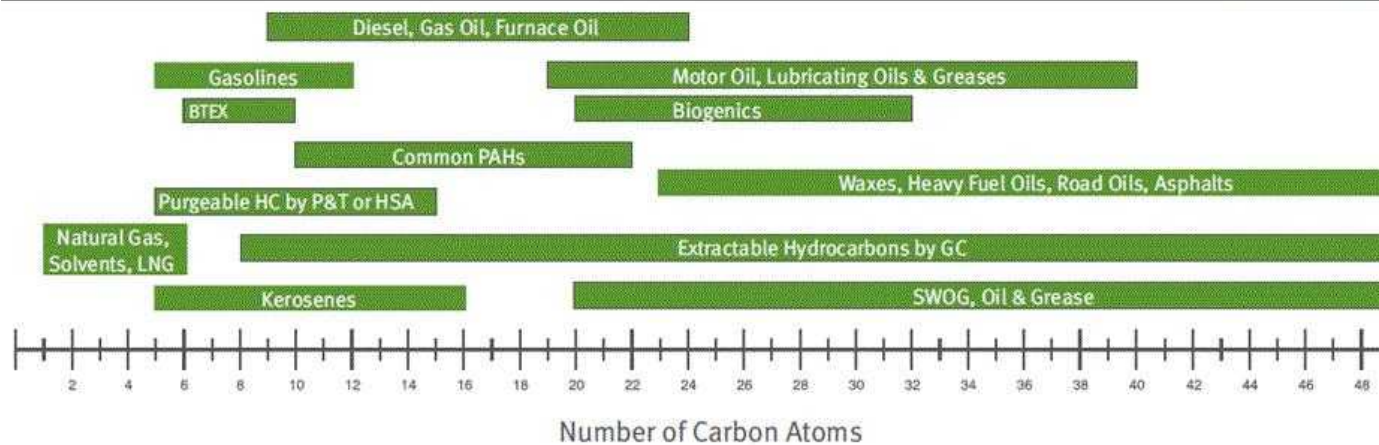
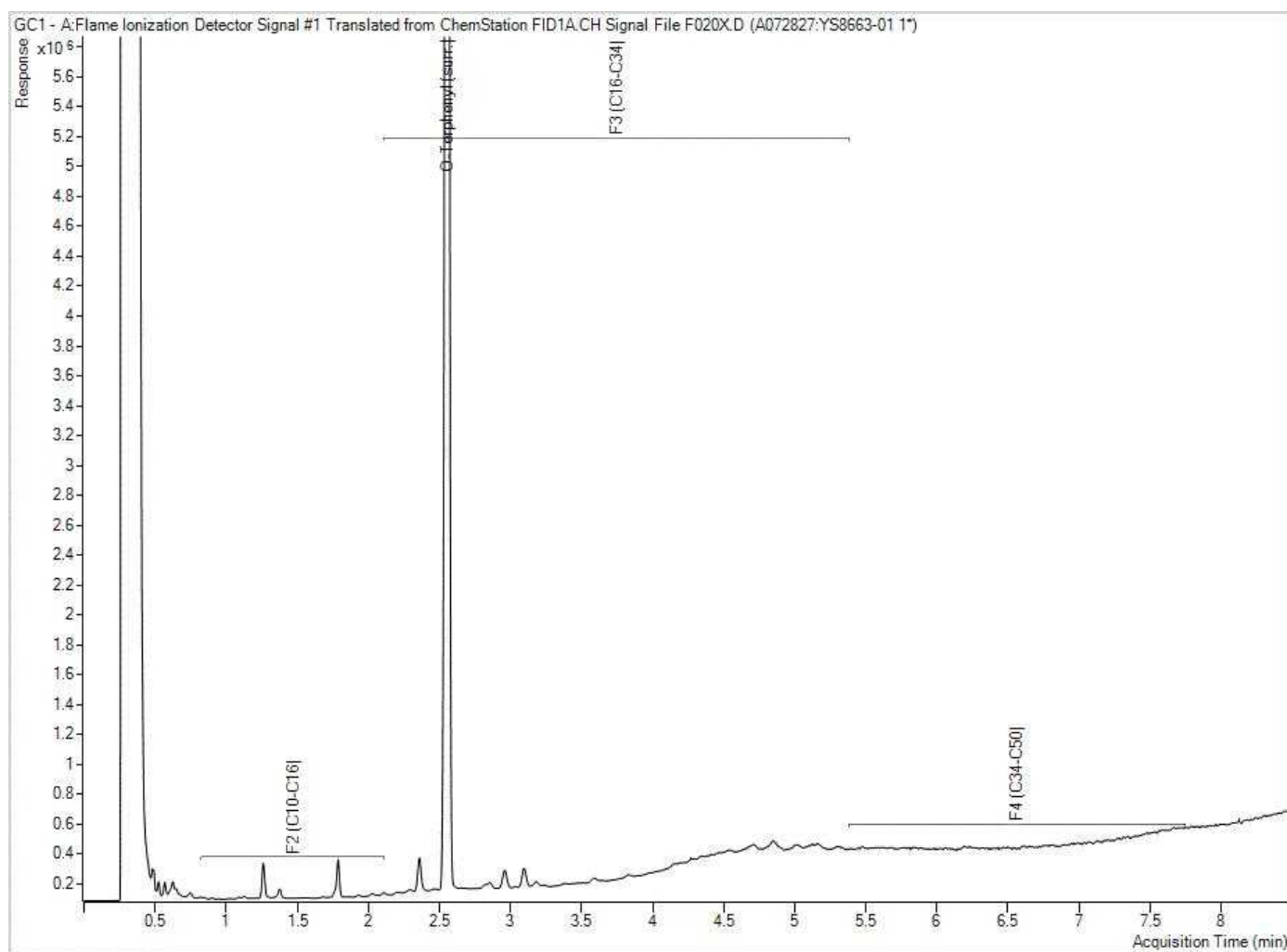
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EPH in Soil by GC/FID Chromatogram



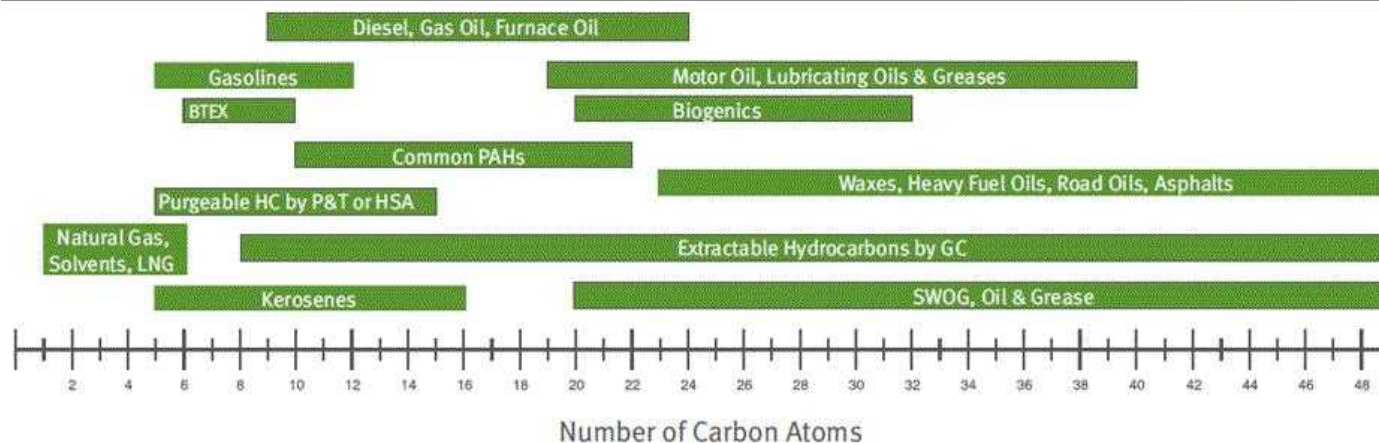
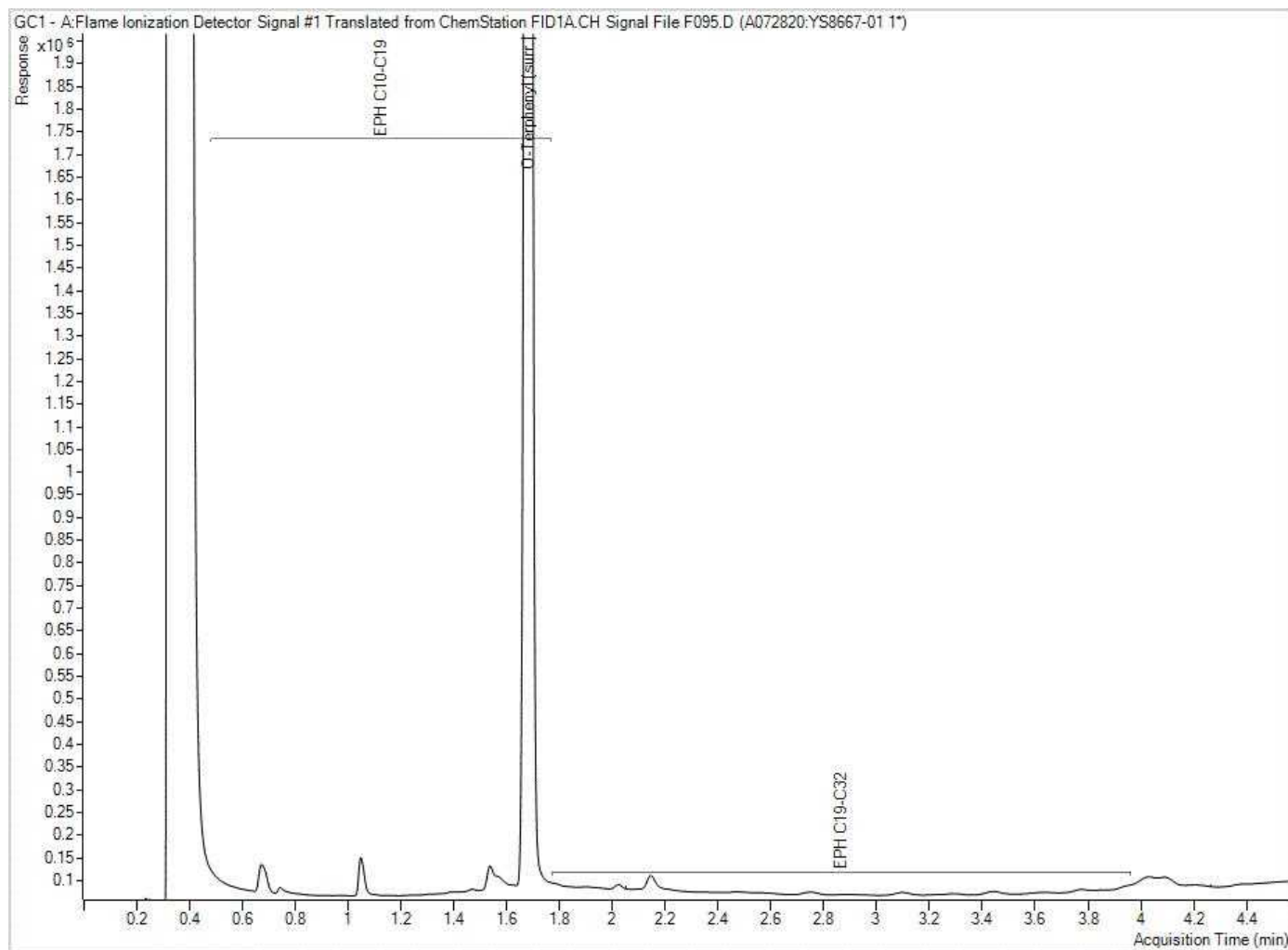
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



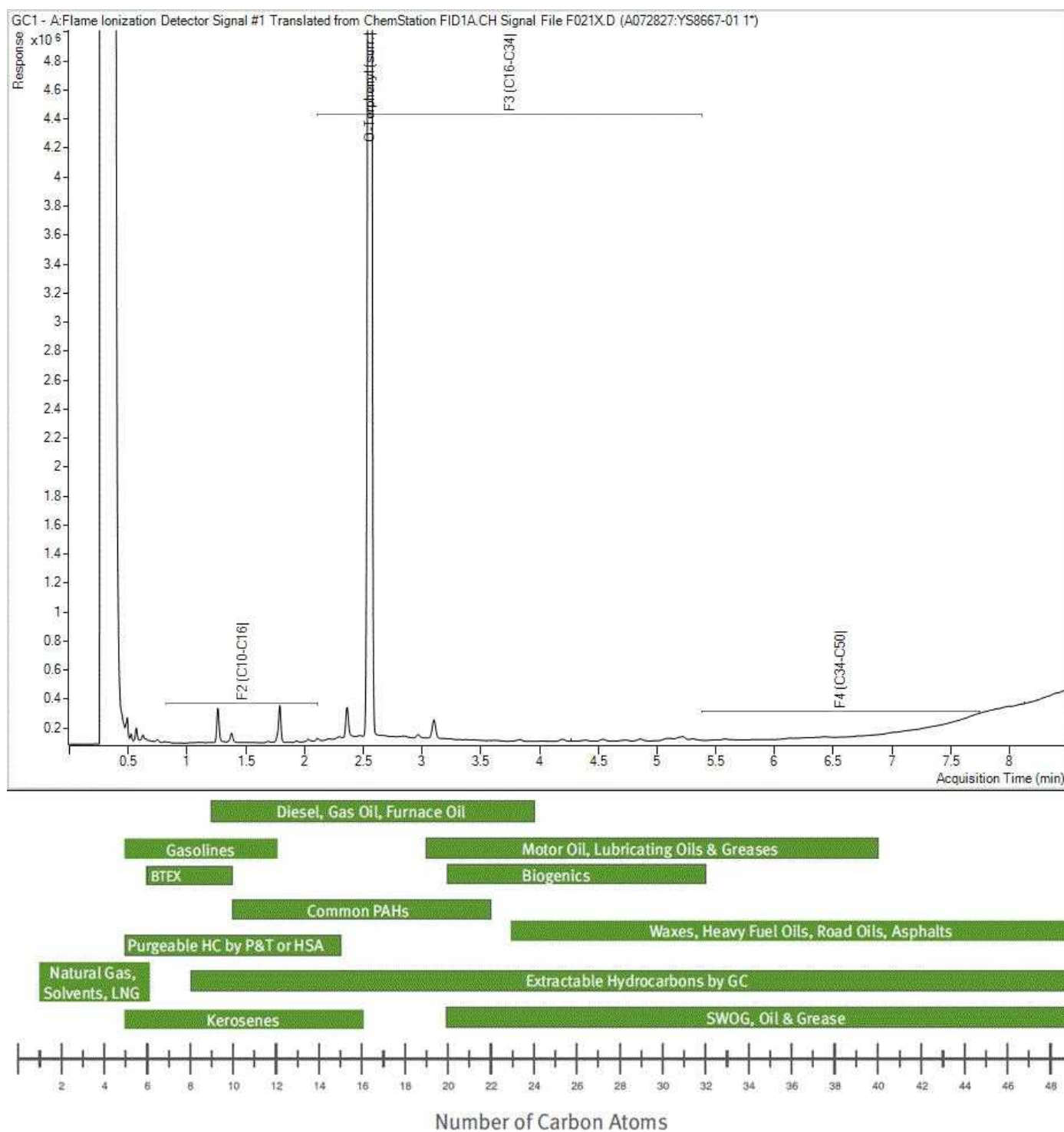
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EPH in Soil by GC/FID Chromatogram



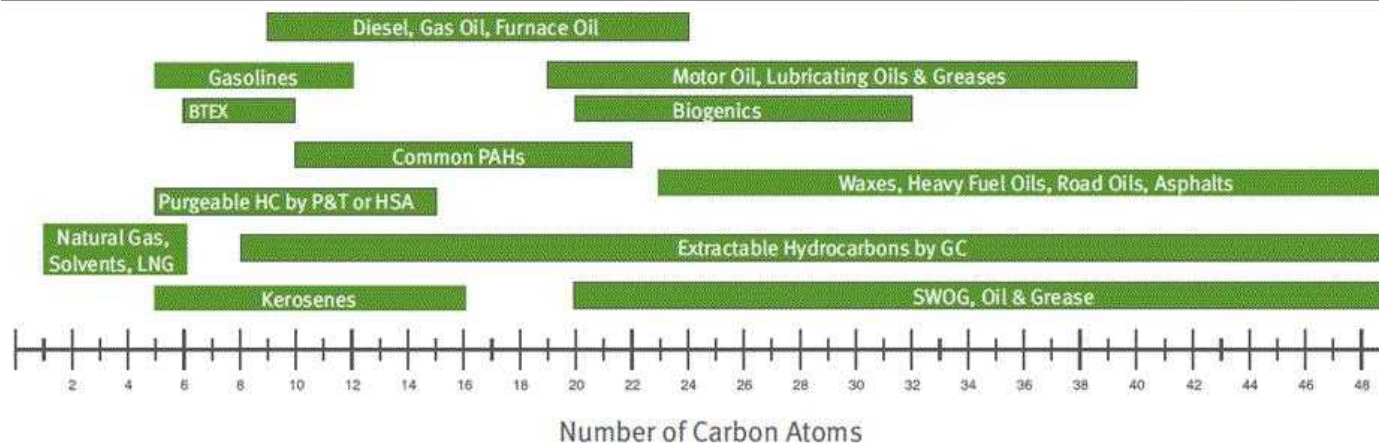
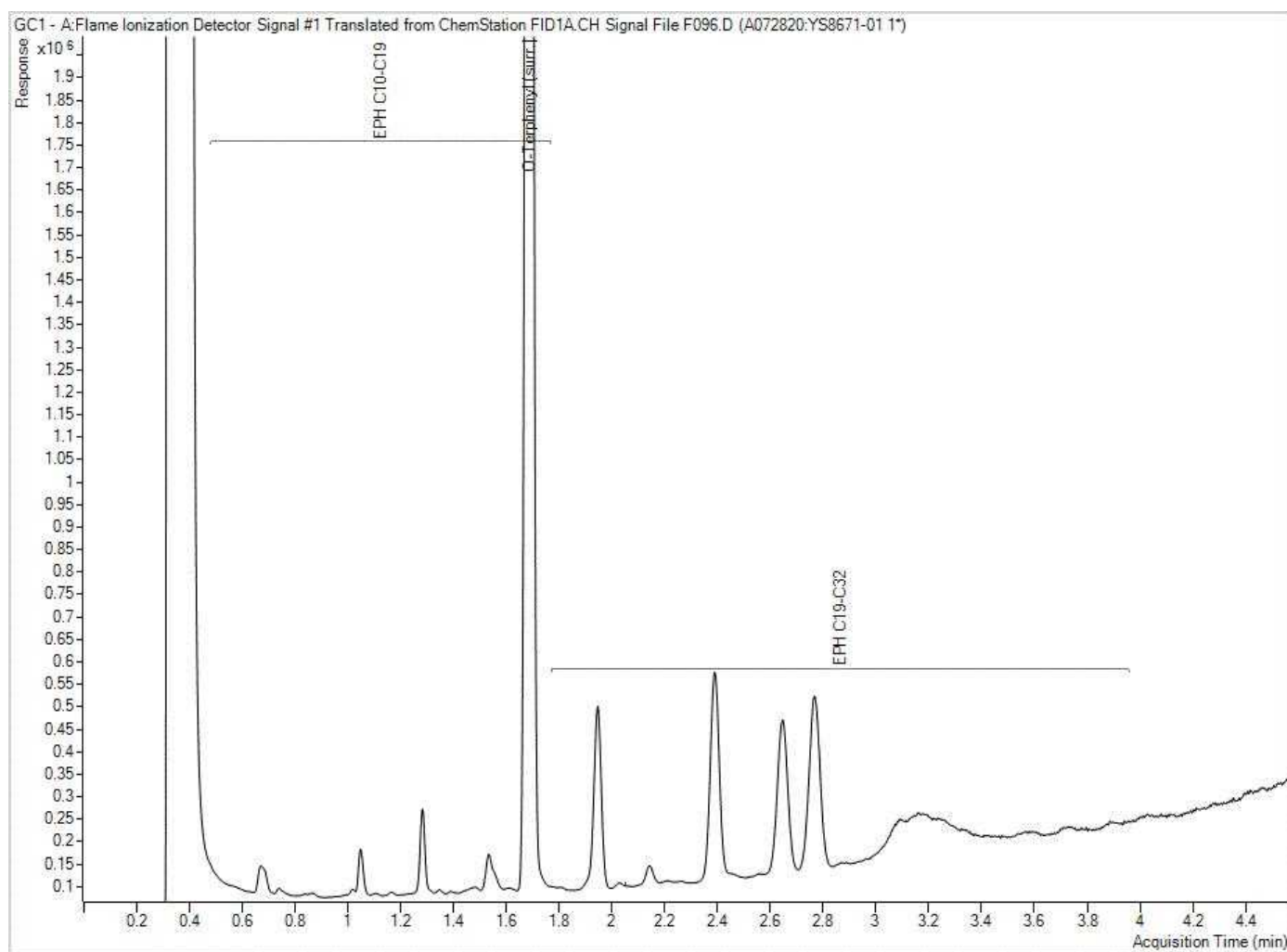
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



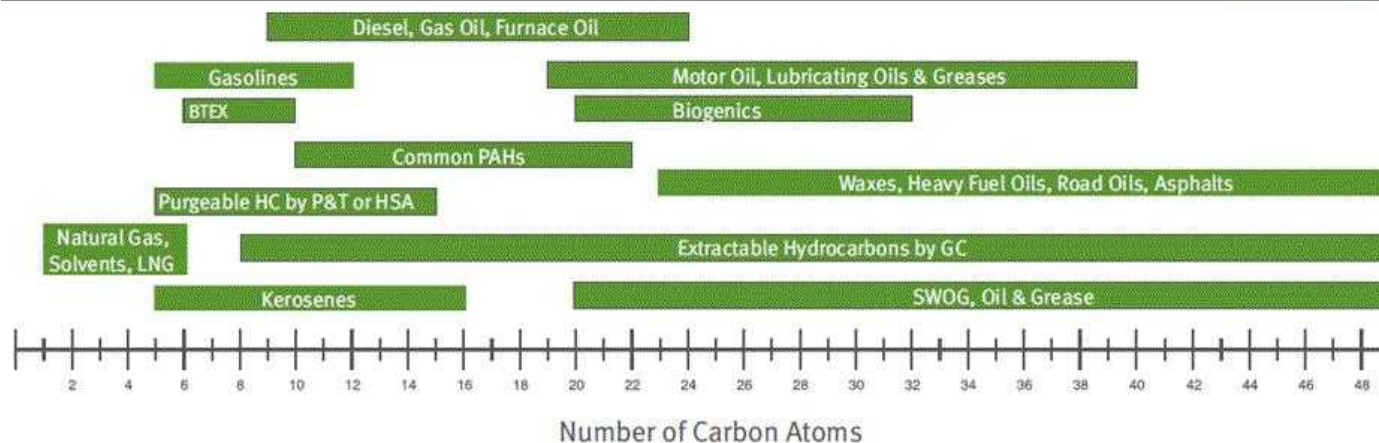
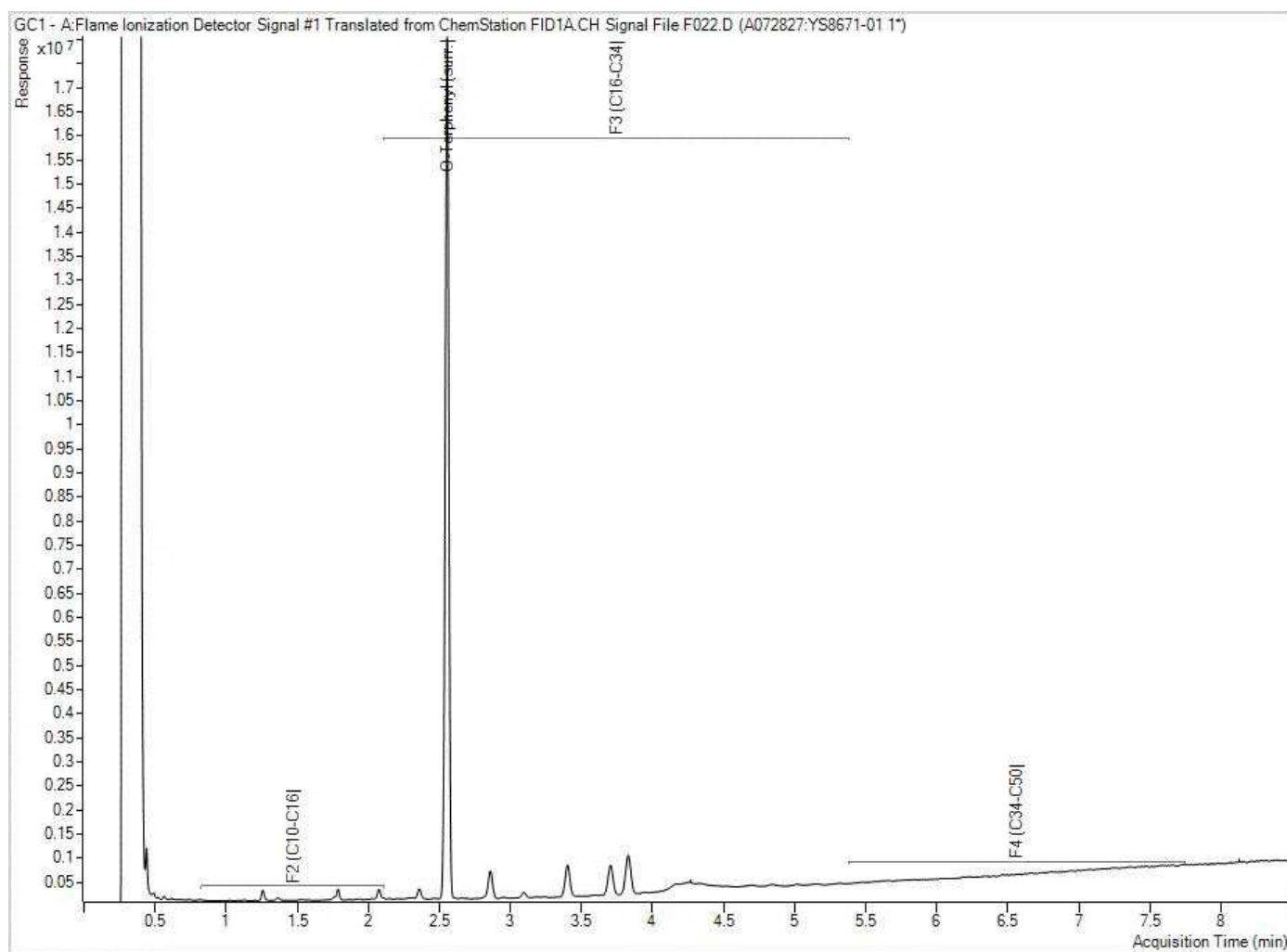
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EPH in Soil by GC/FID Chromatogram



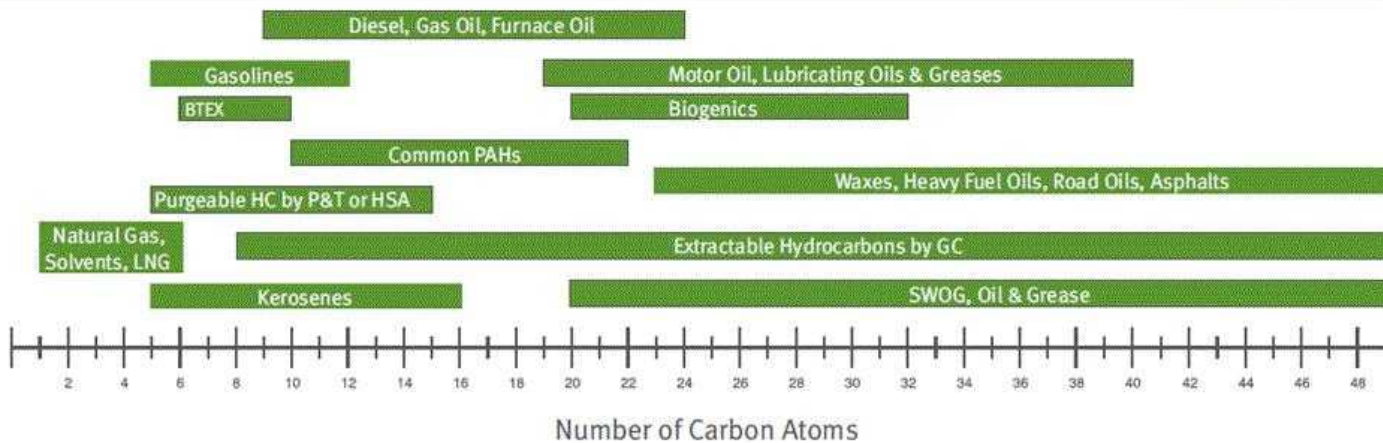
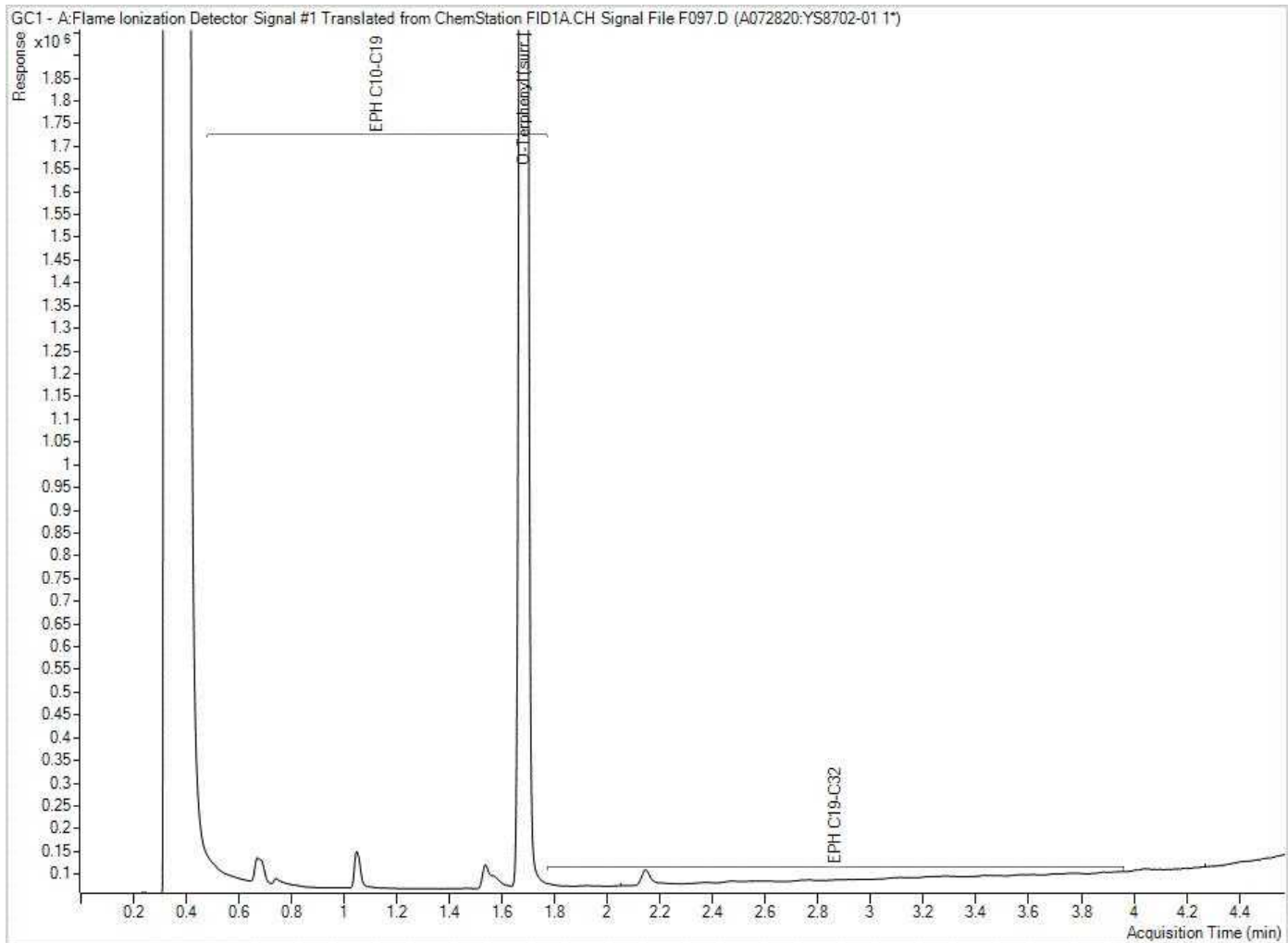
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



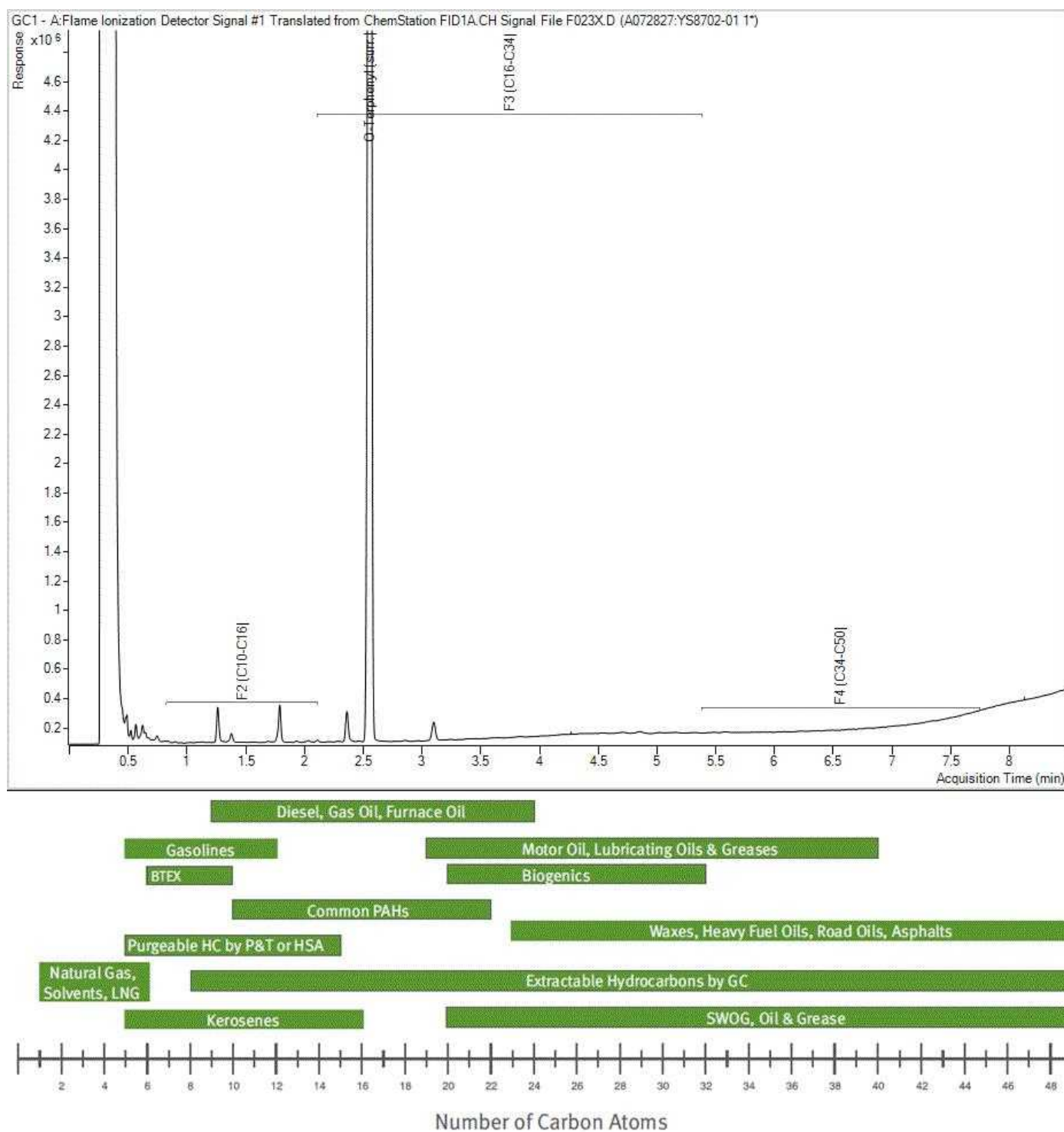
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EPH in Soil by GC/FID Chromatogram



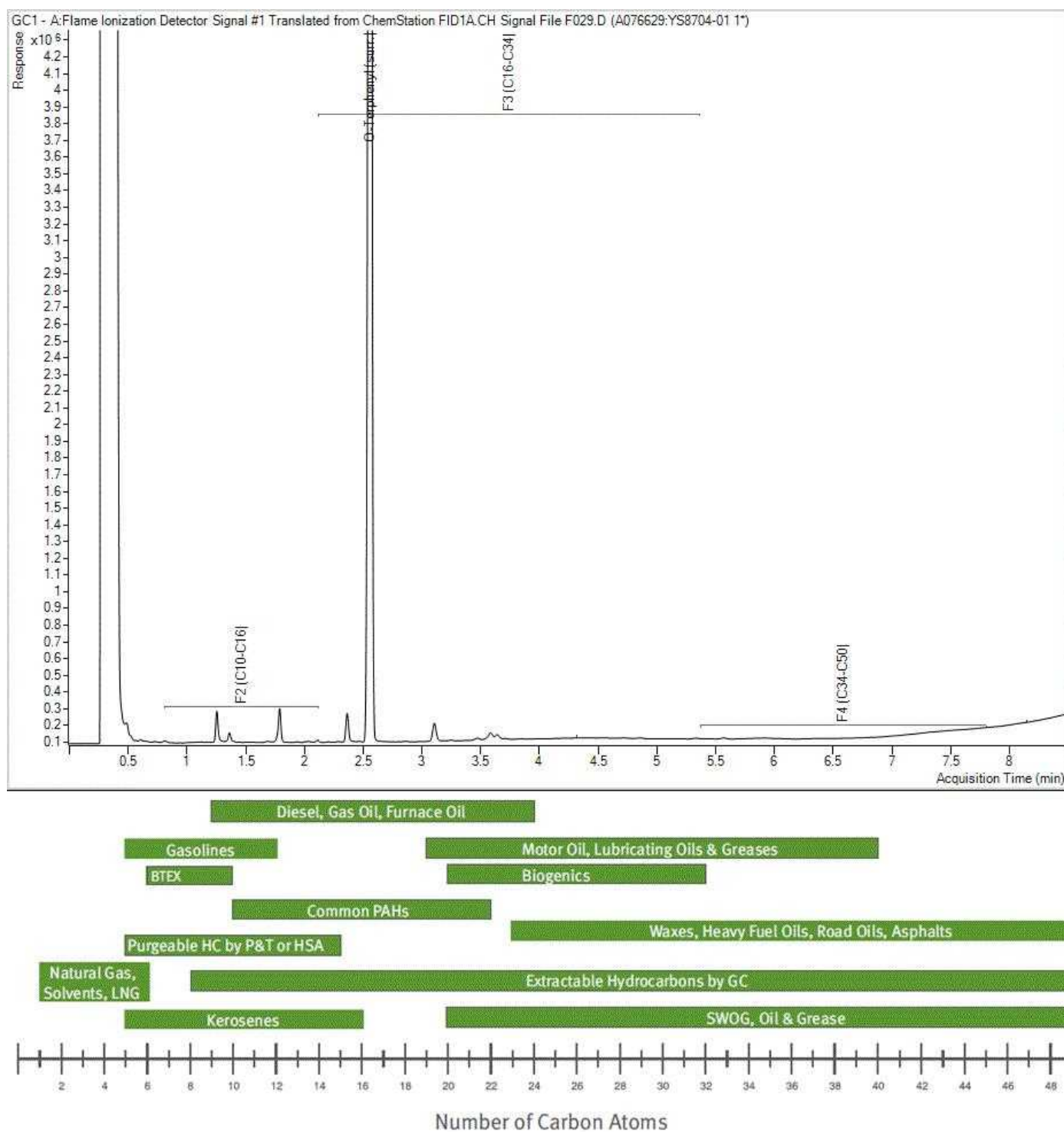
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



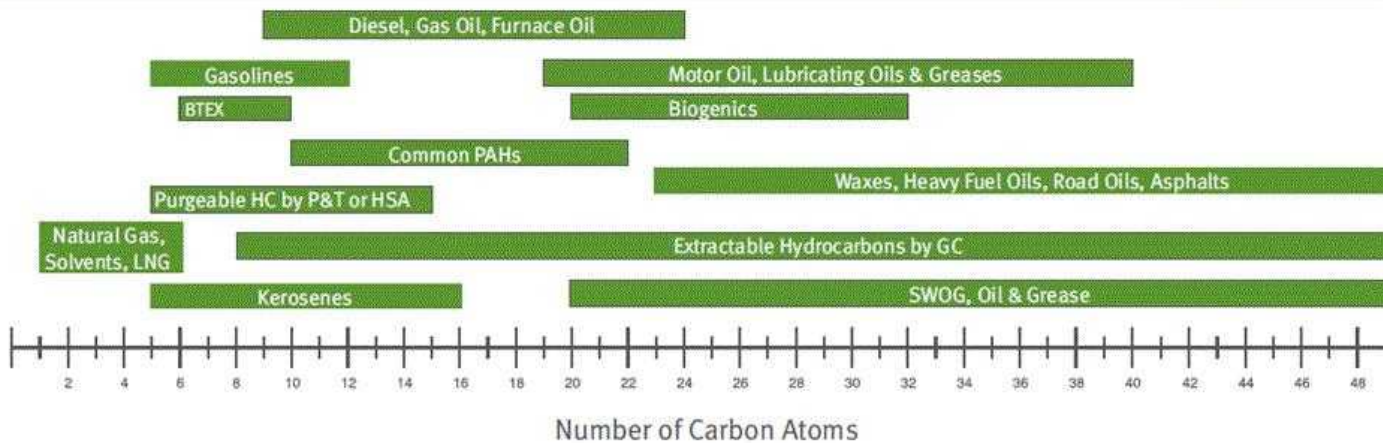
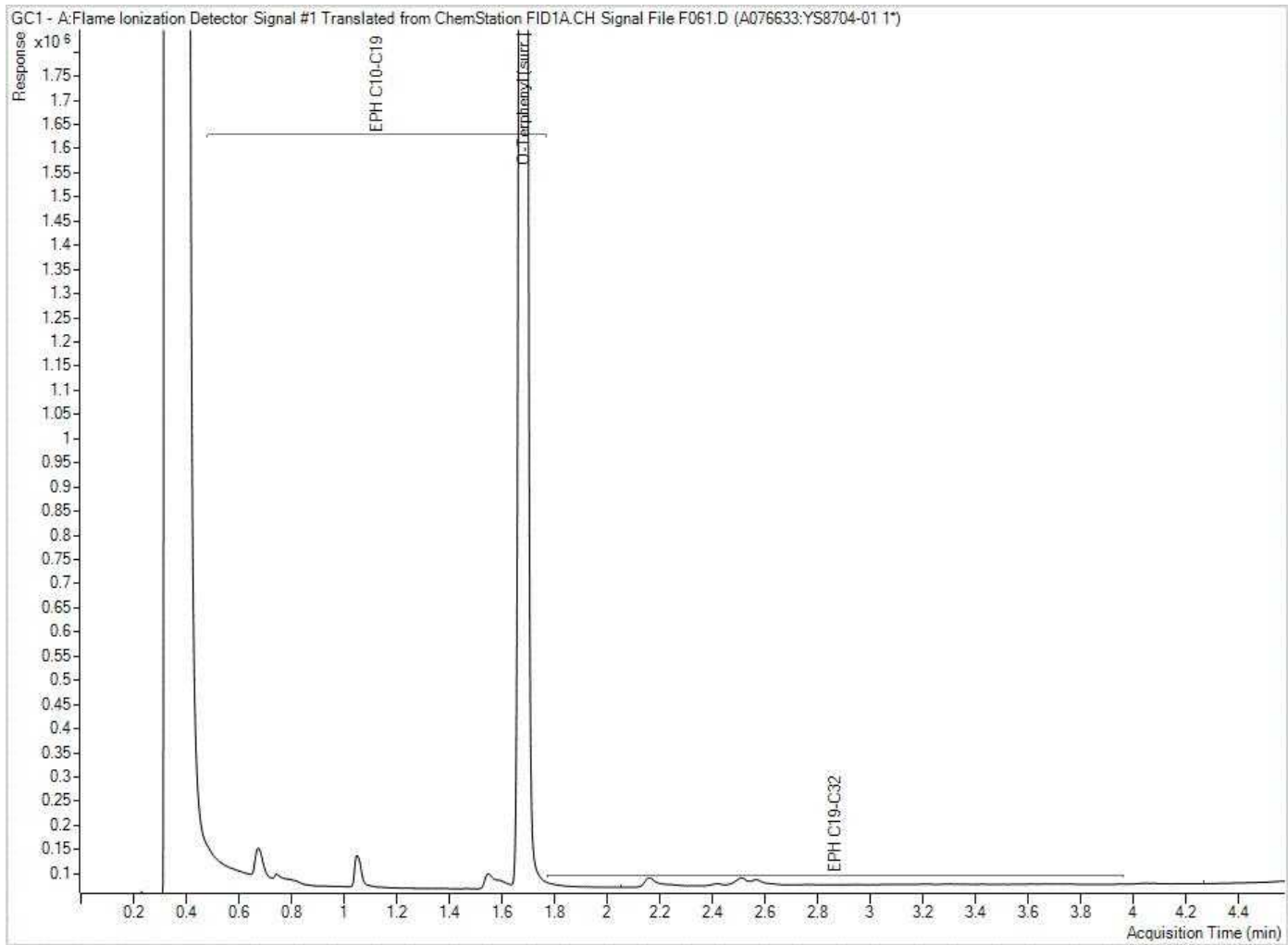
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



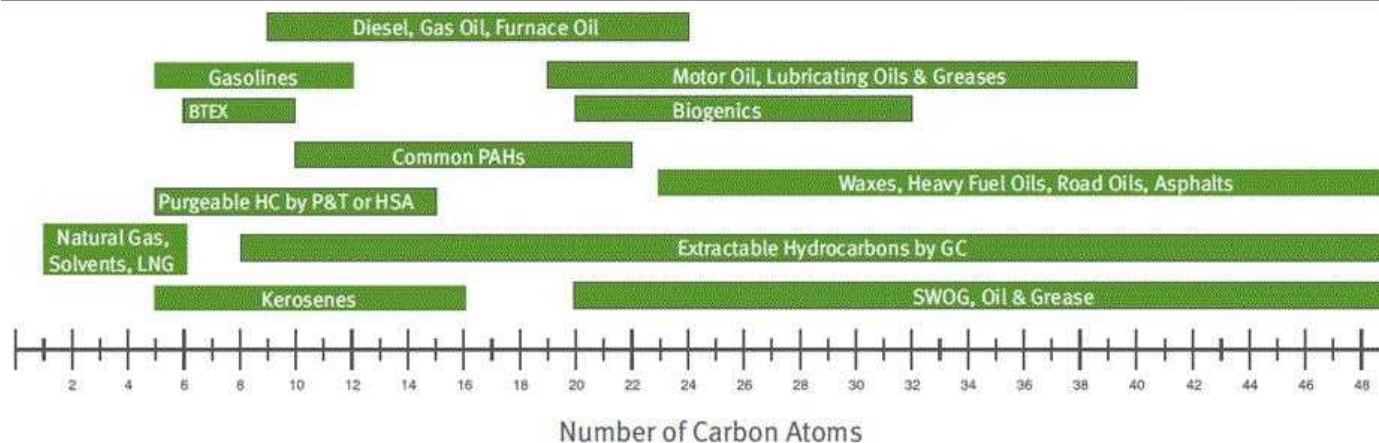
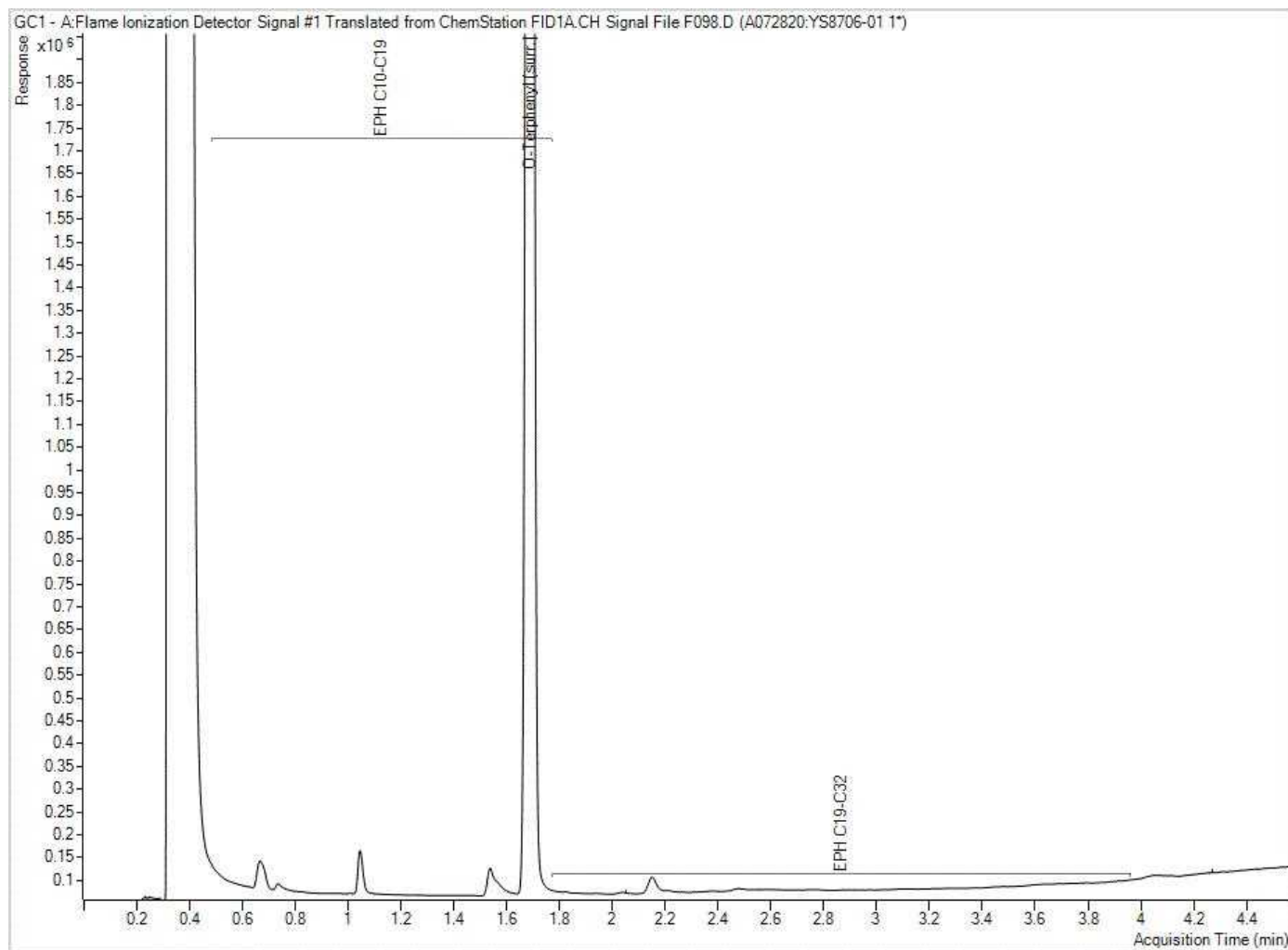
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



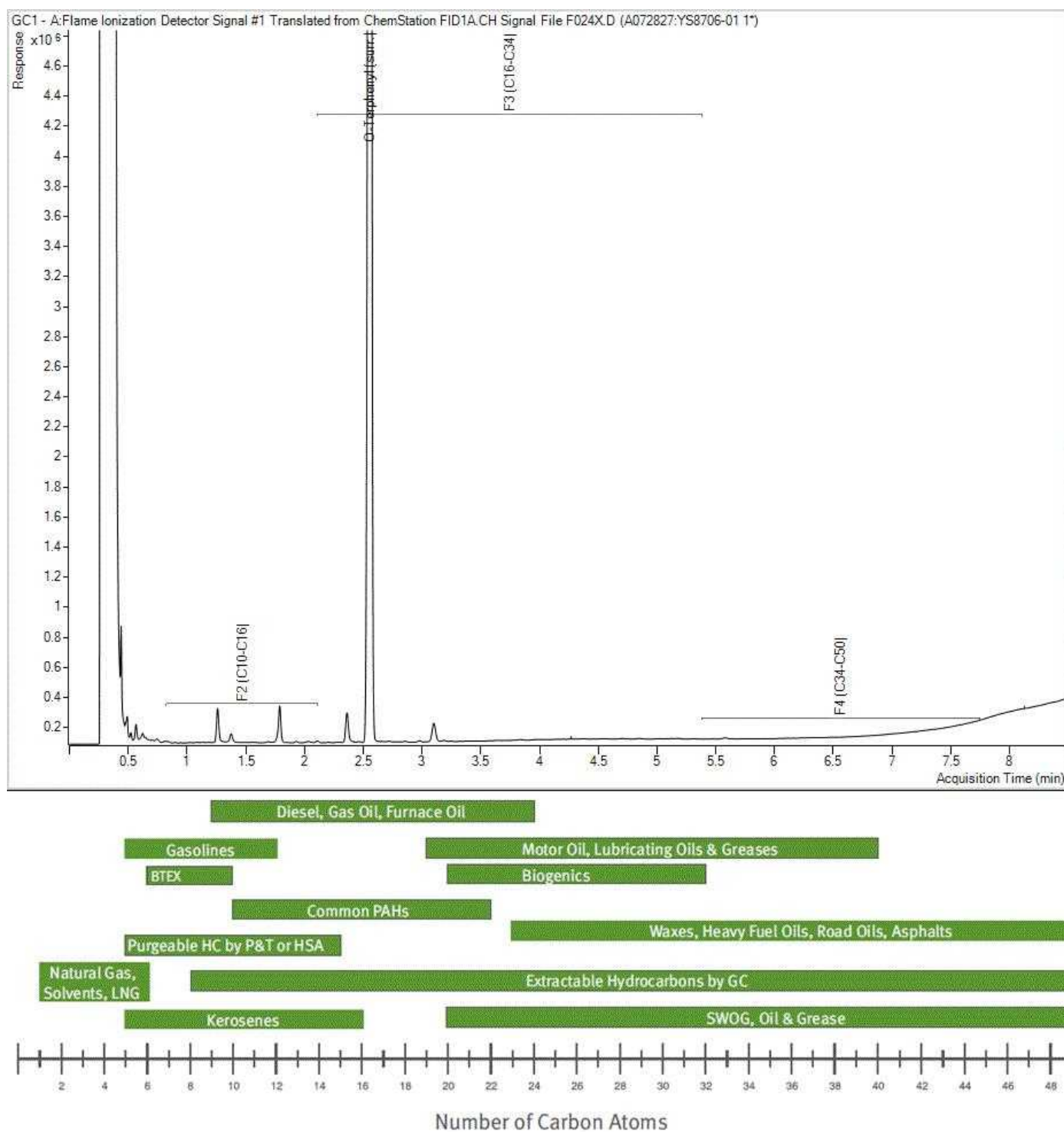
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EPH in Soil by GC/FID Chromatogram



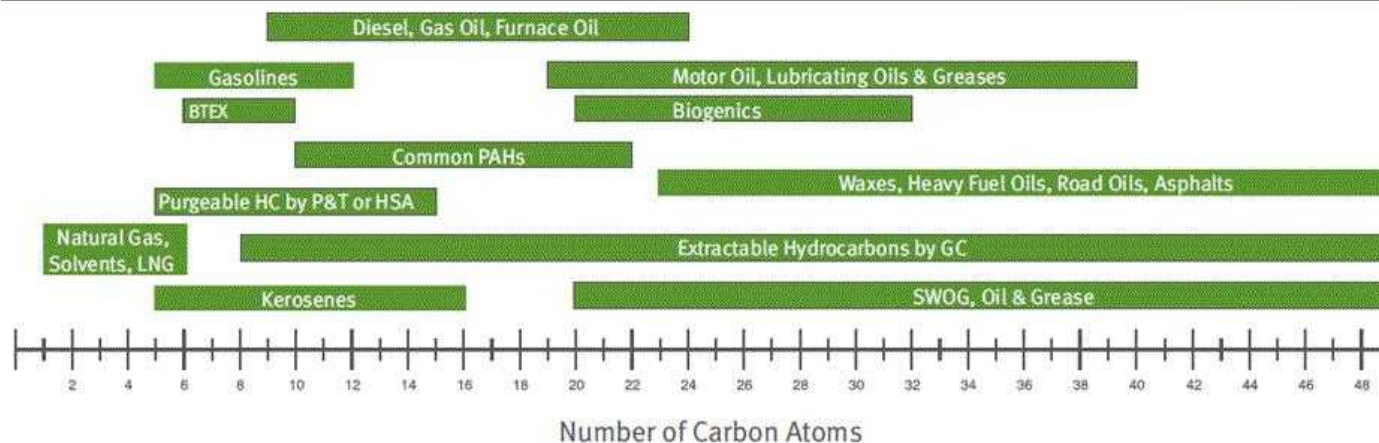
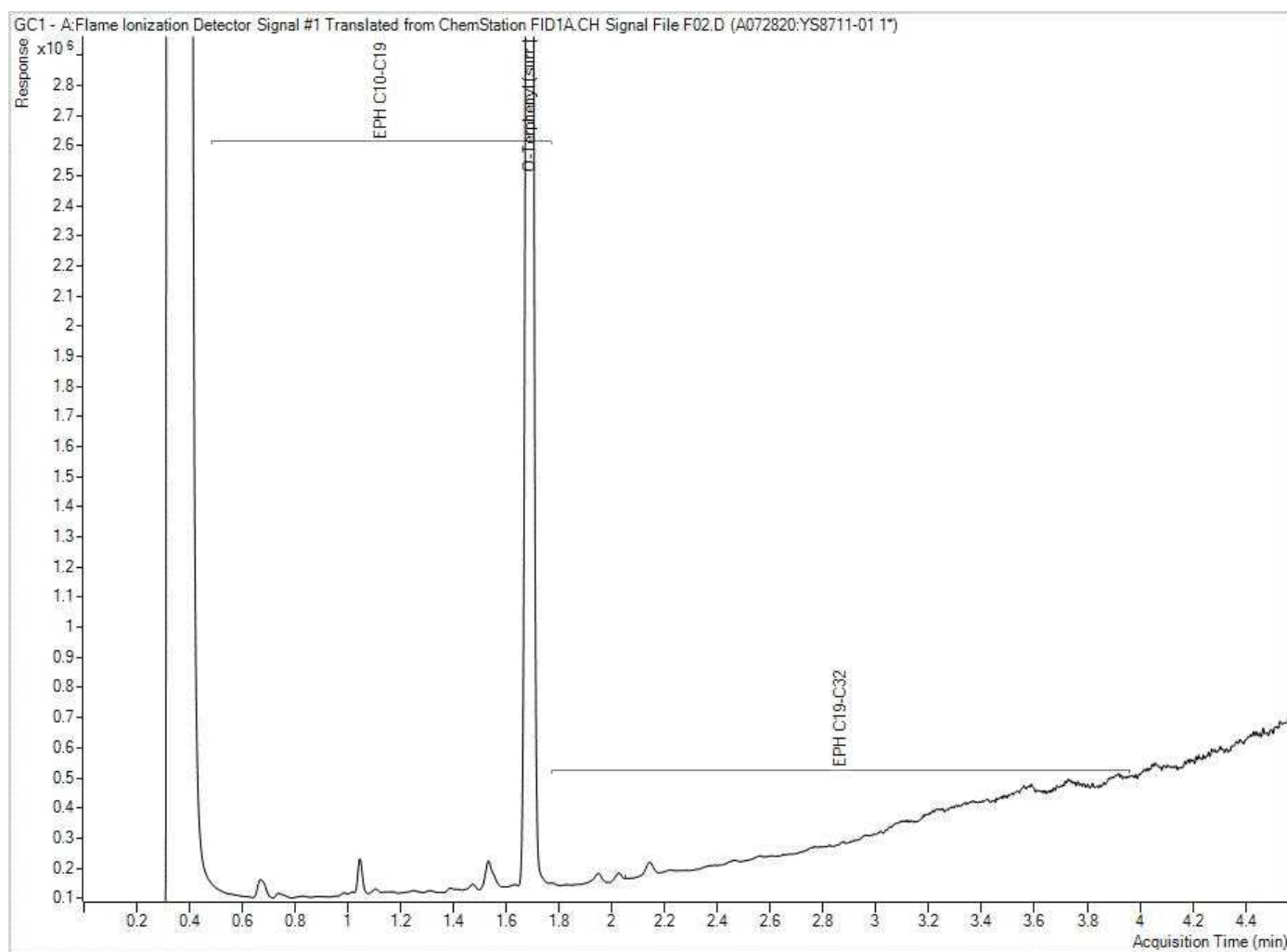
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



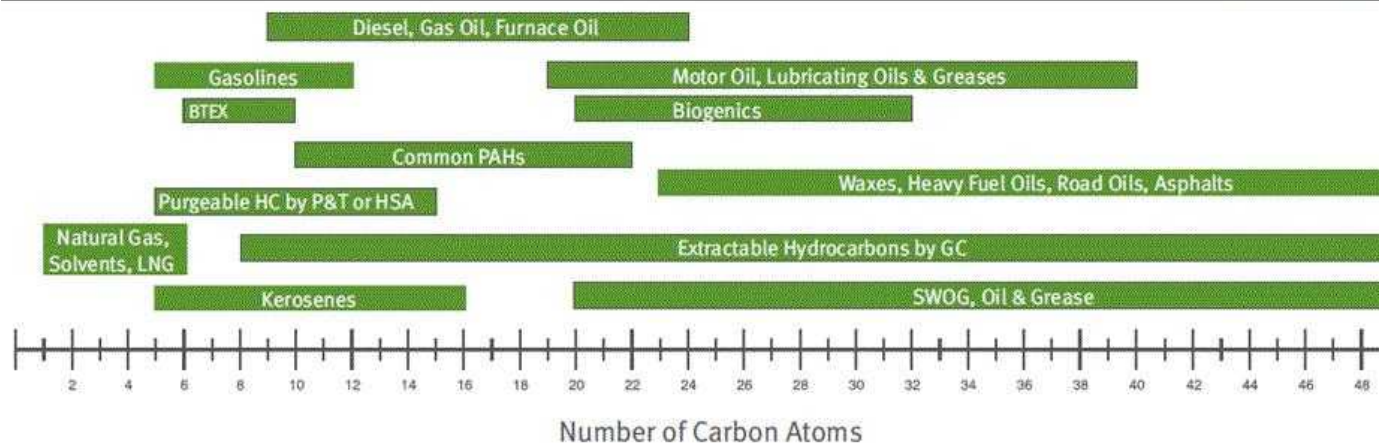
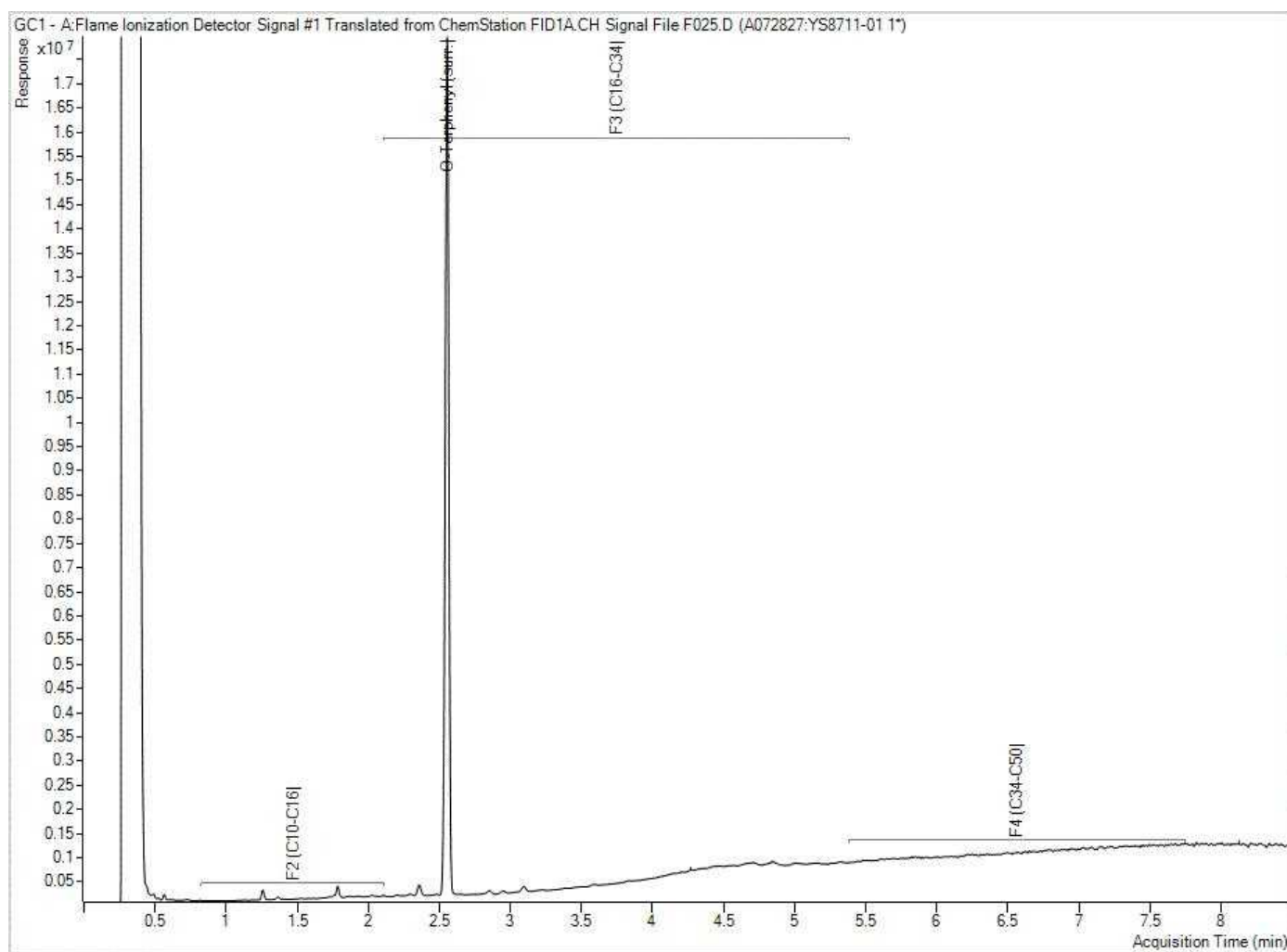
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



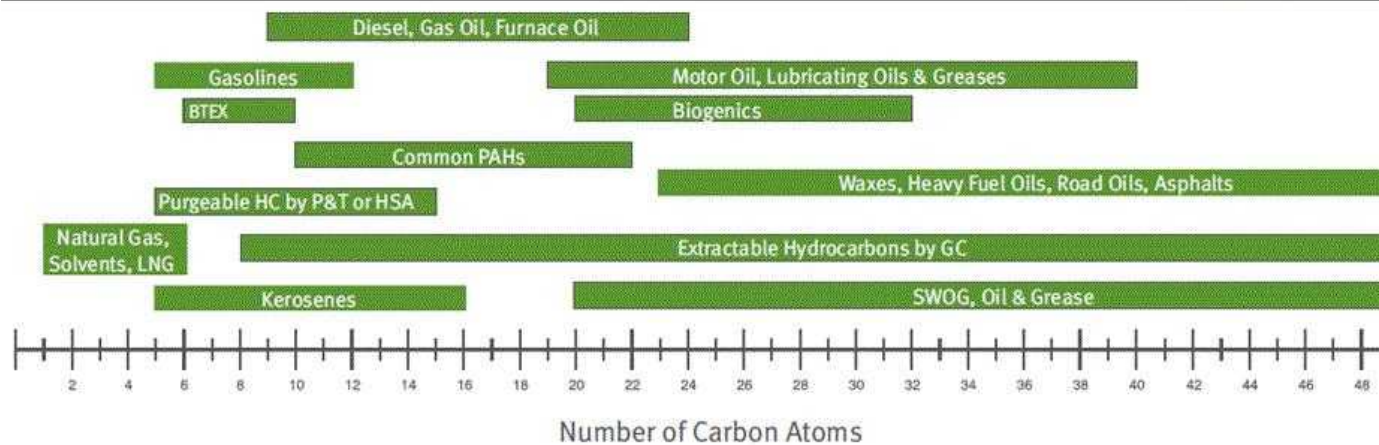
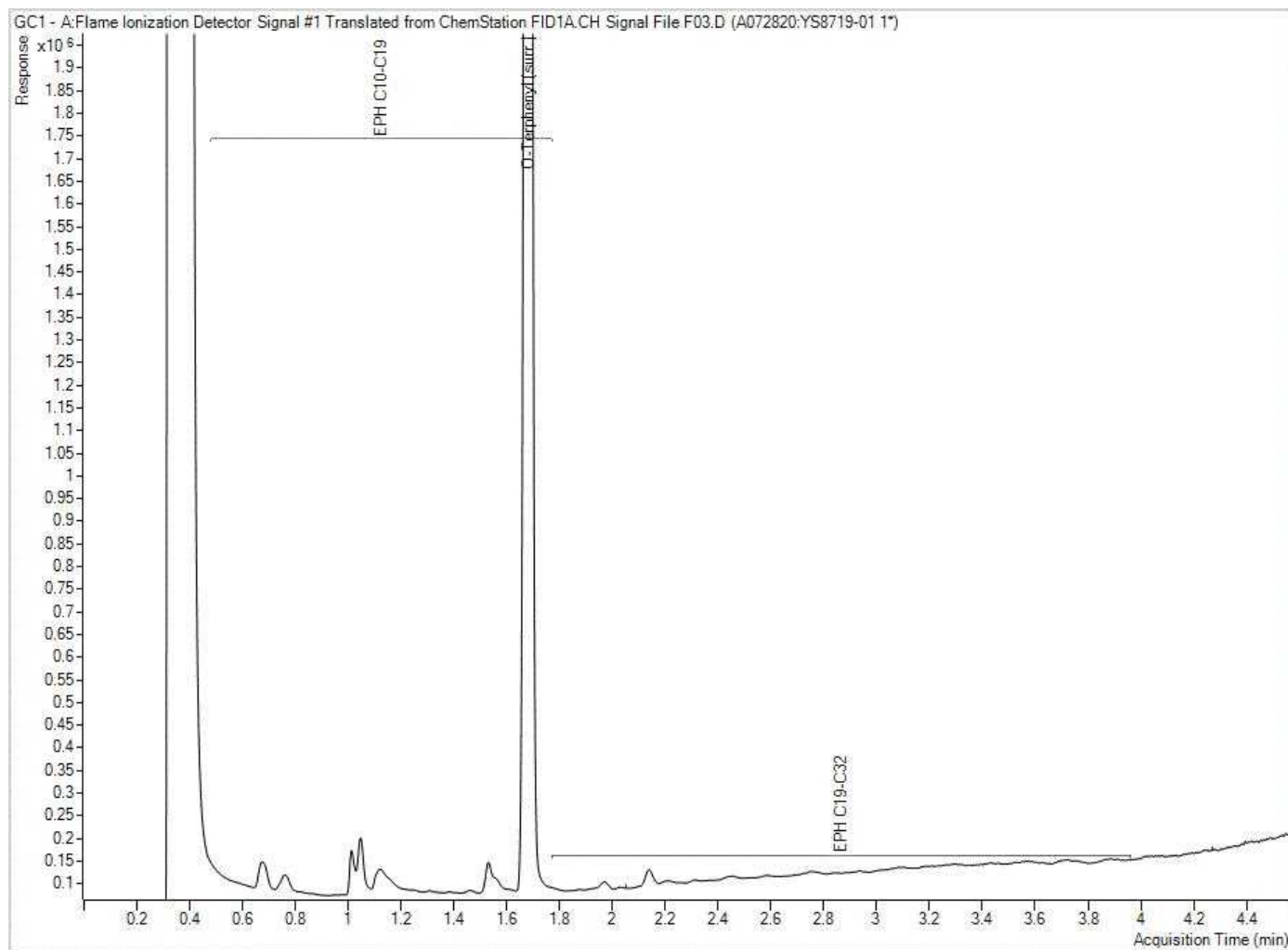
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



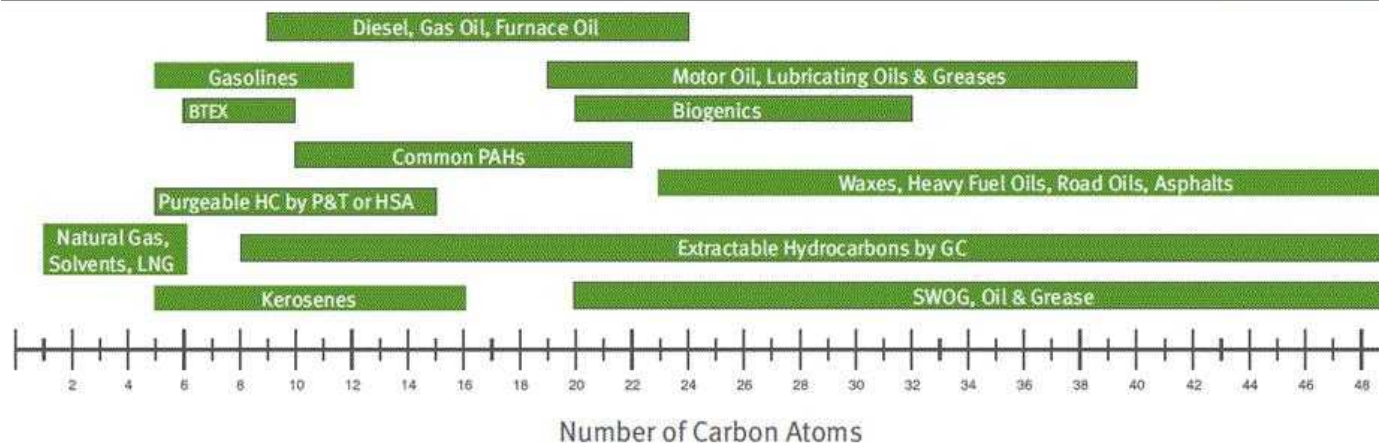
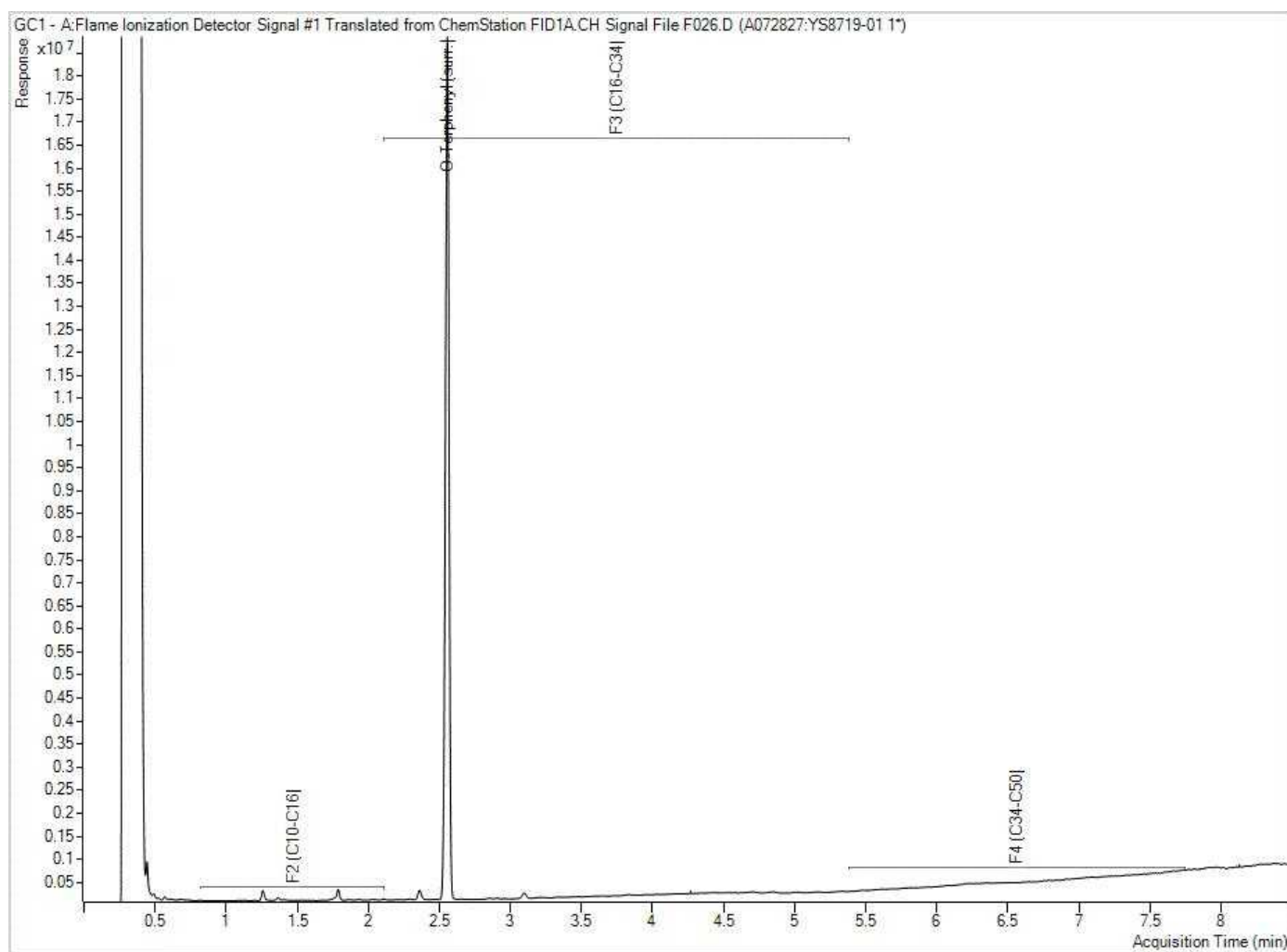
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EPH in Soil by GC/FID Chromatogram



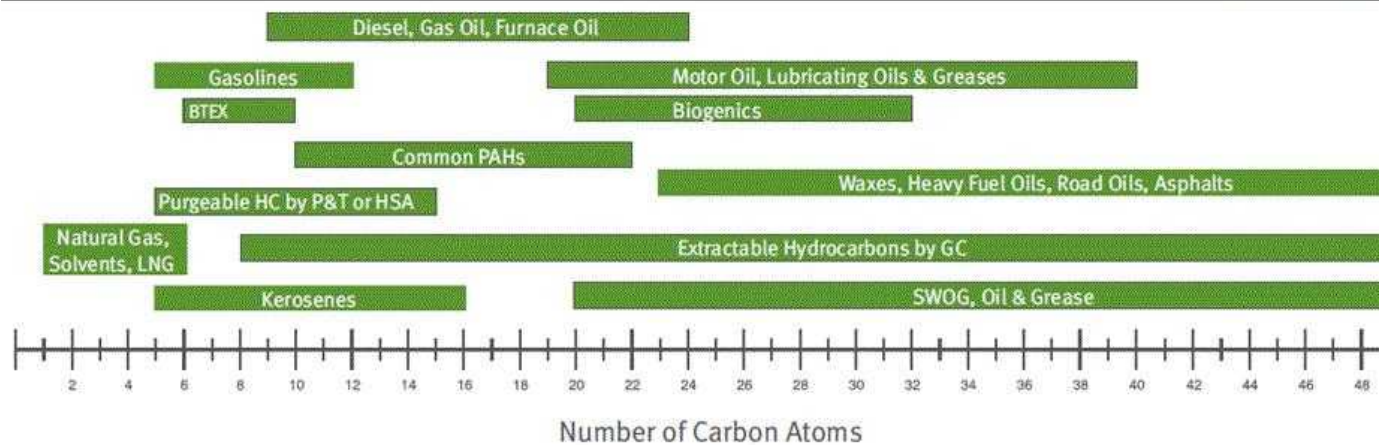
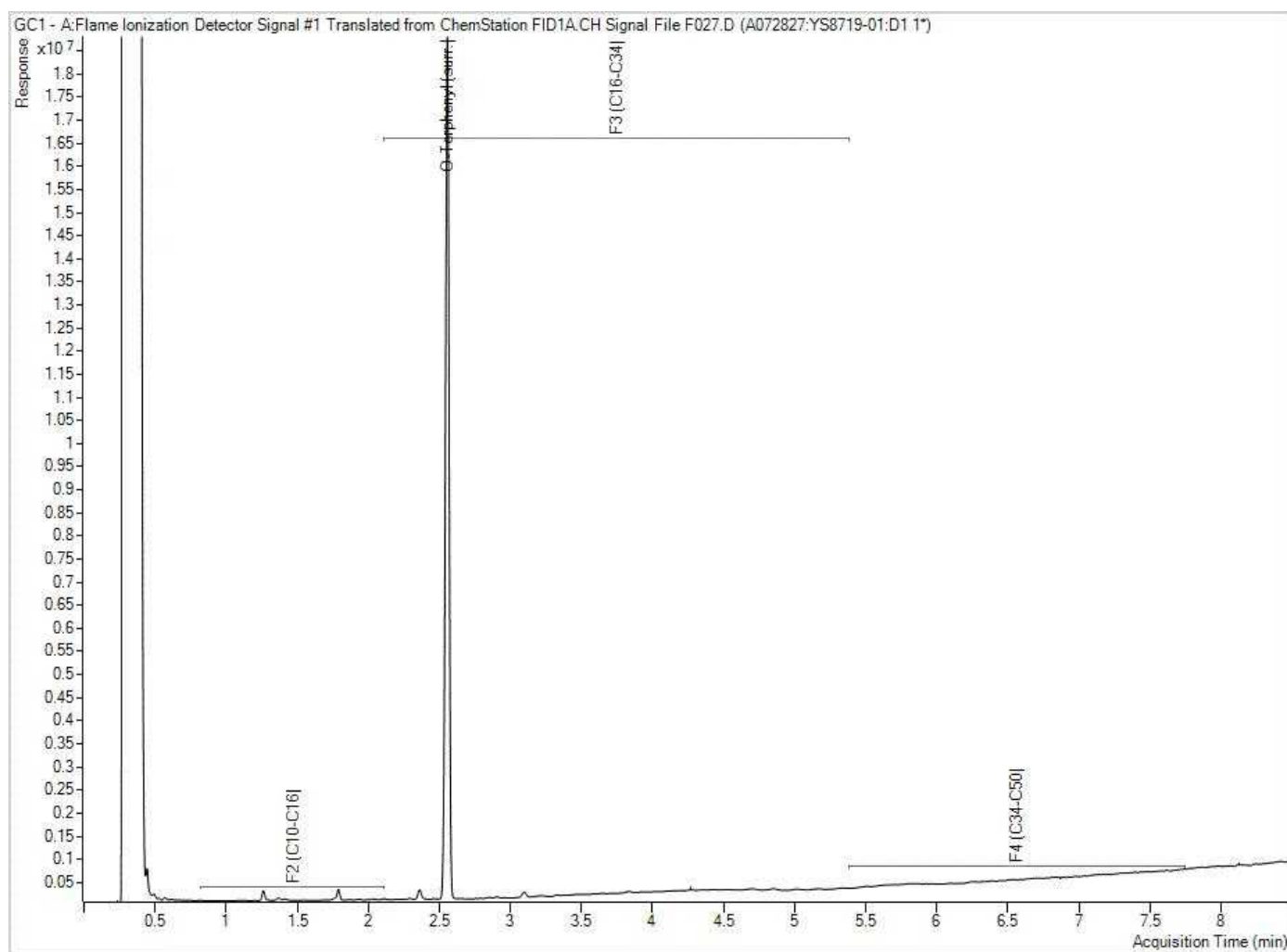
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



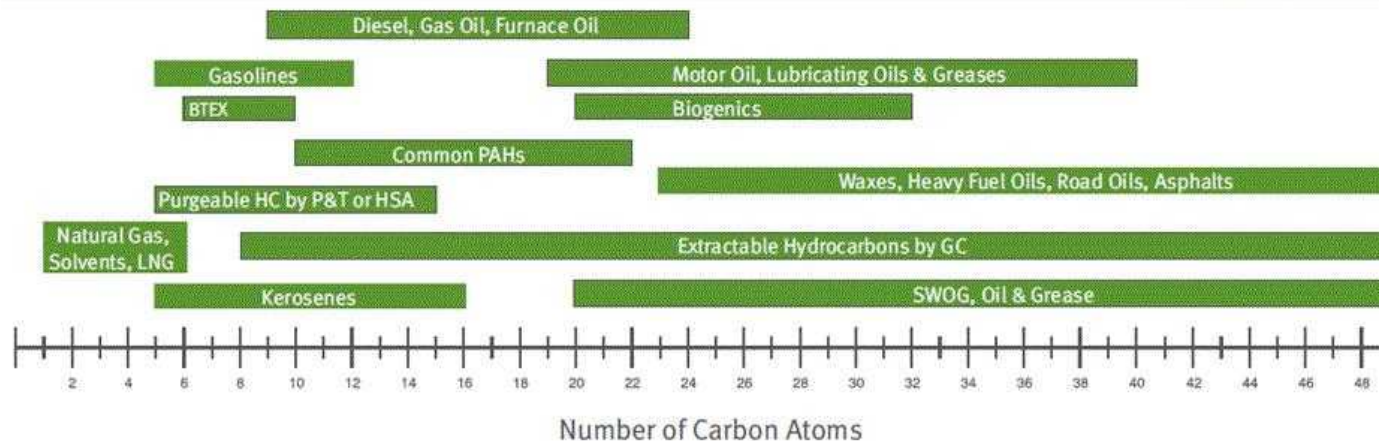
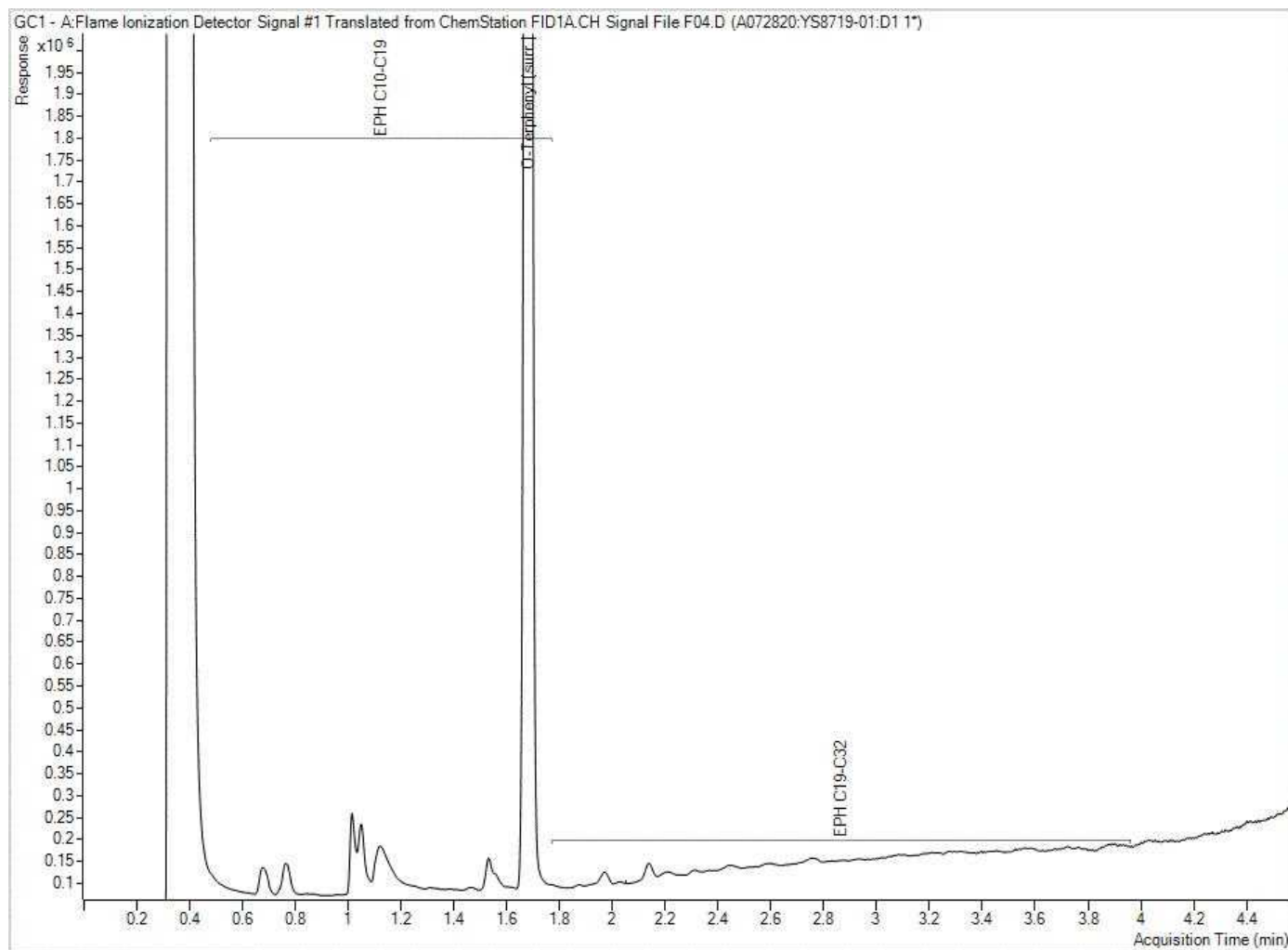
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



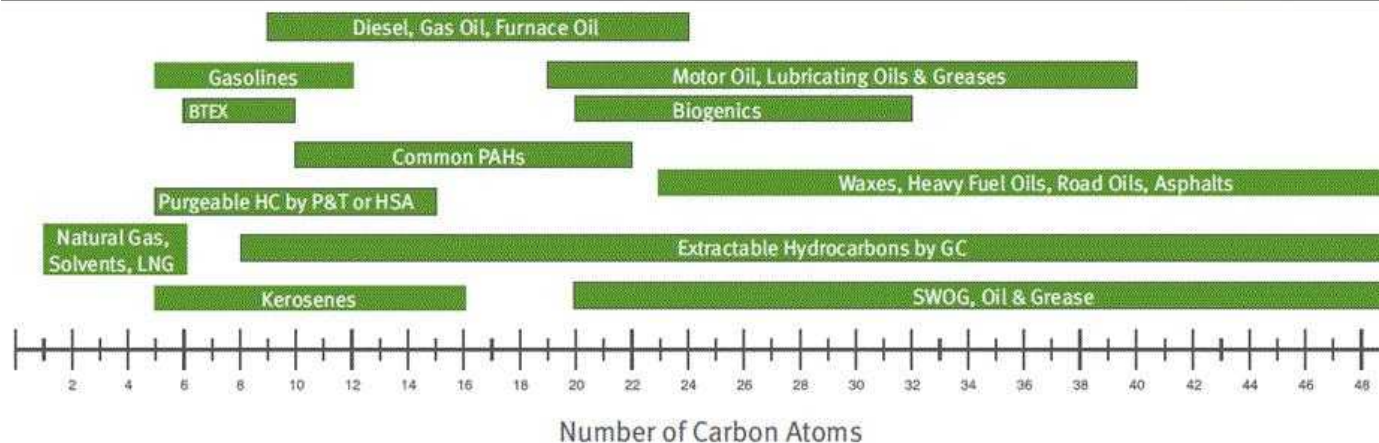
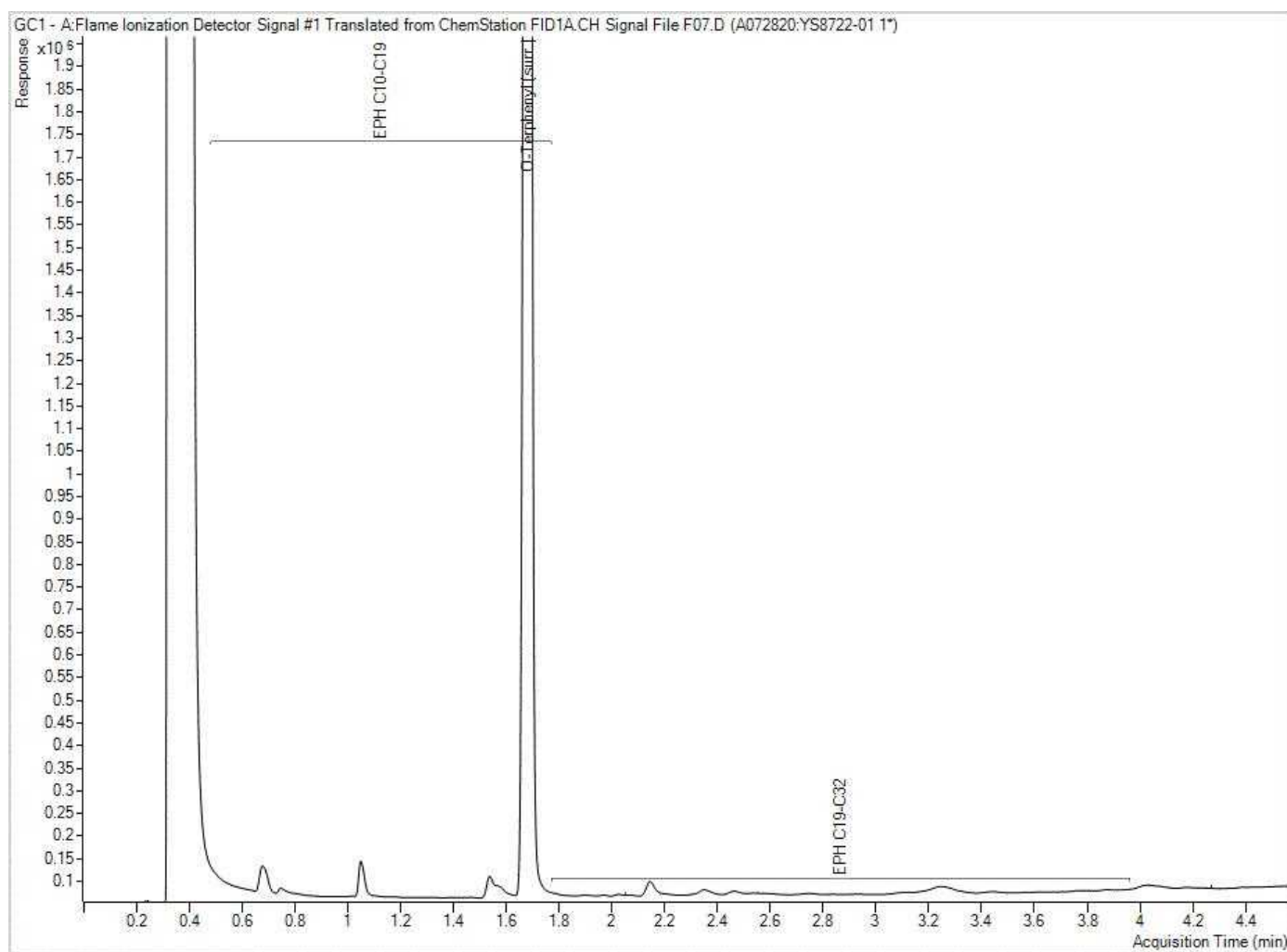
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



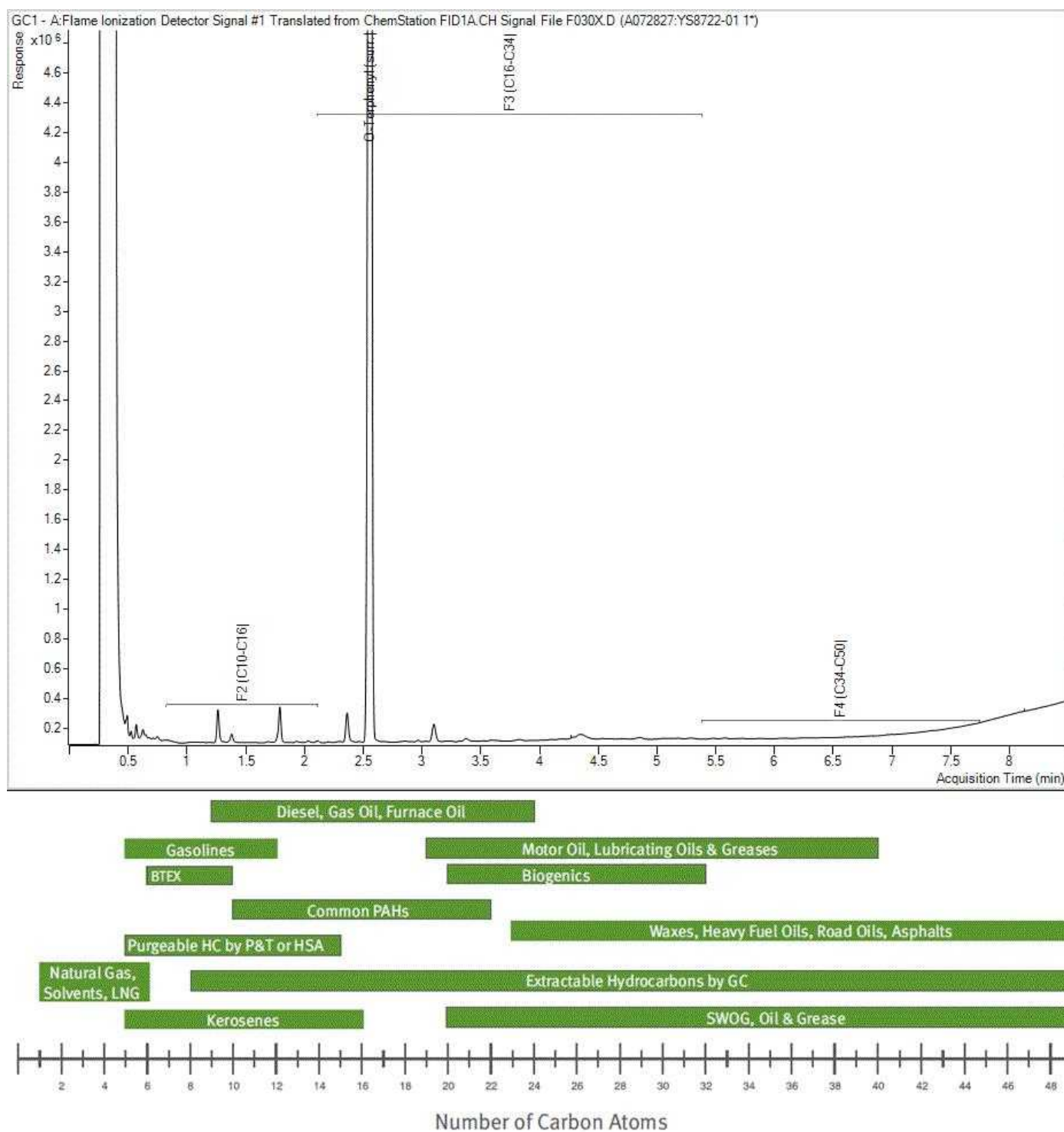
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EPH in Soil by GC/FID Chromatogram



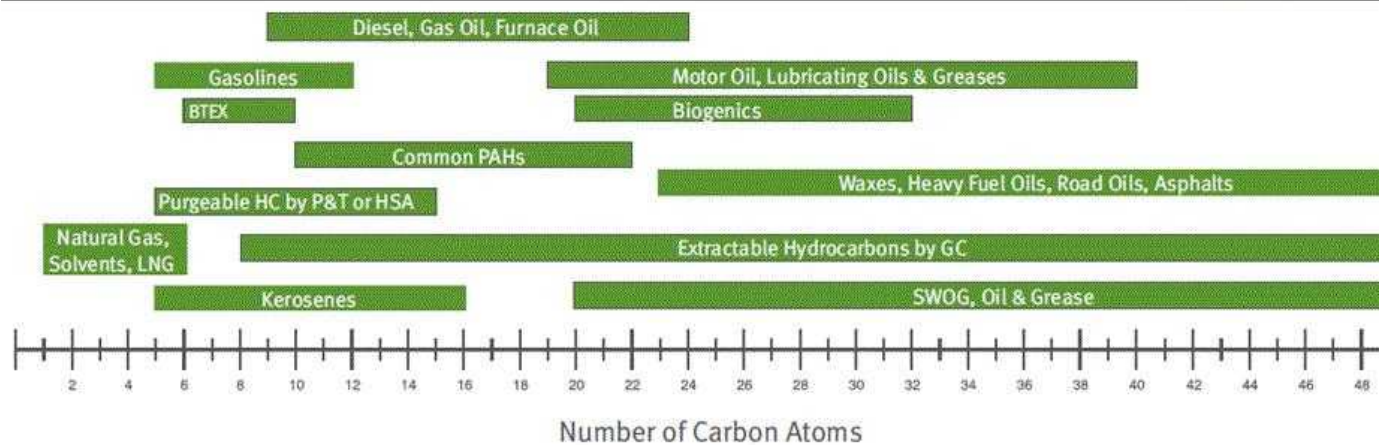
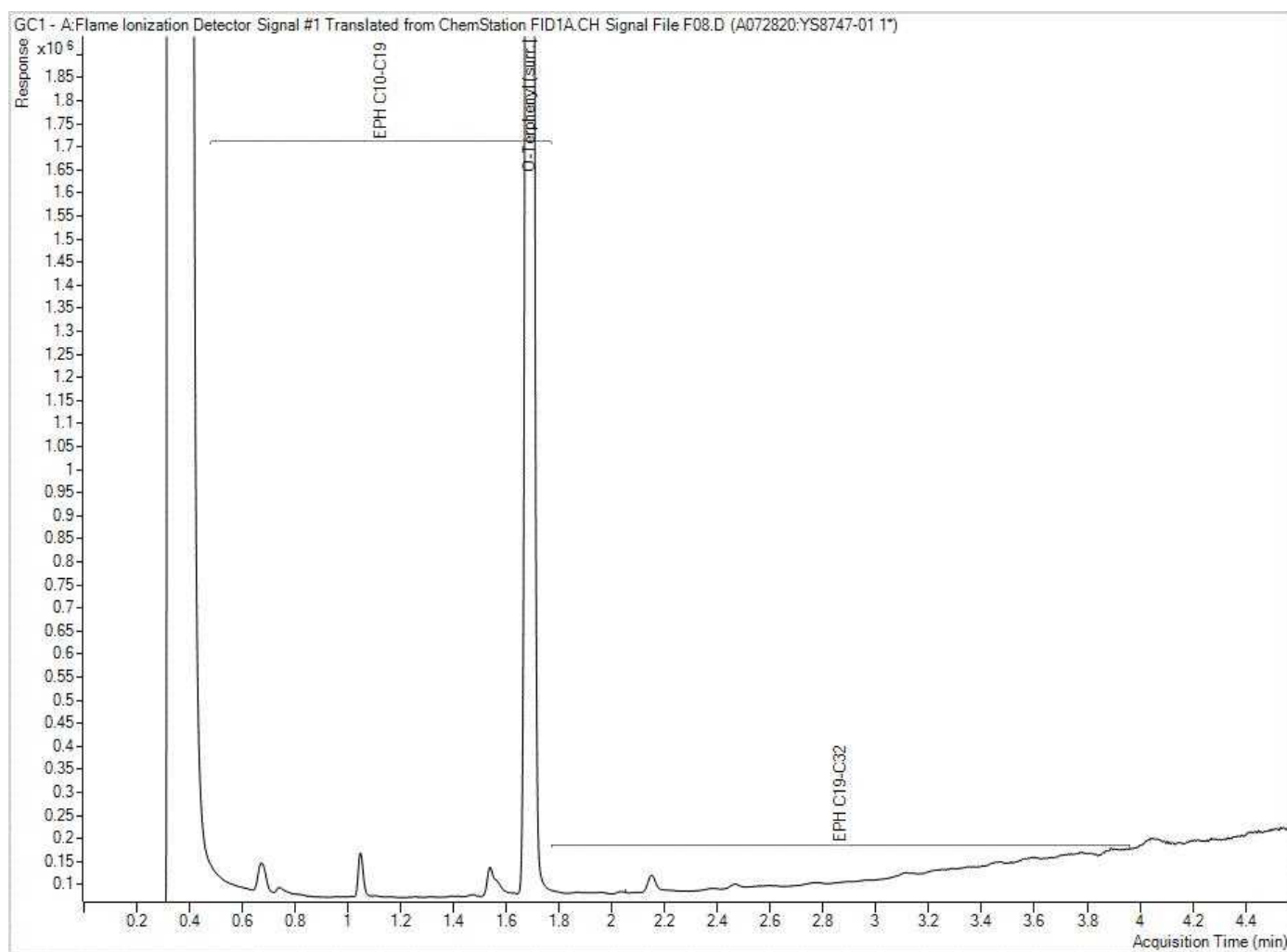
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



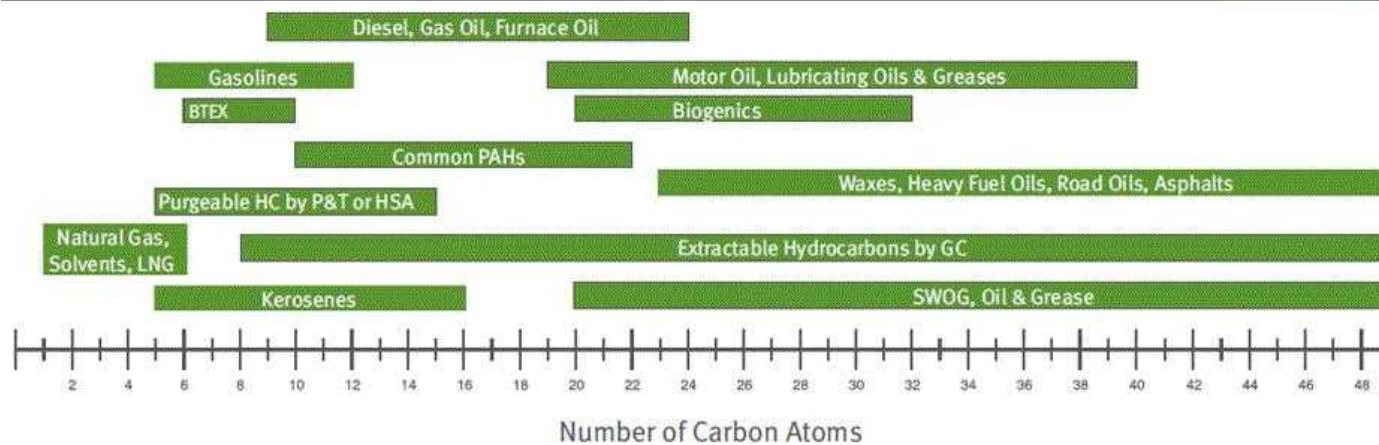
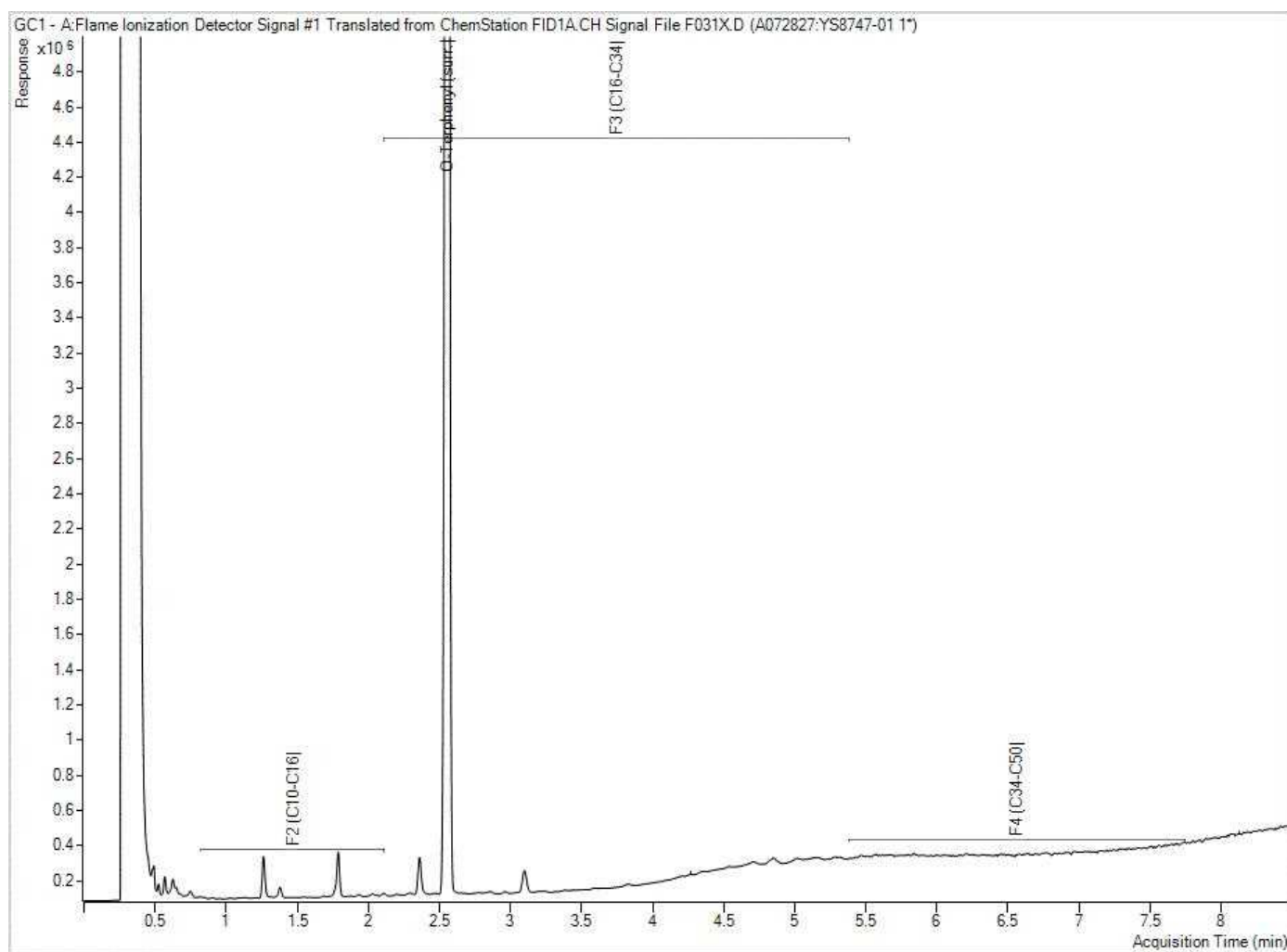
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EPH in Soil by GC/FID Chromatogram



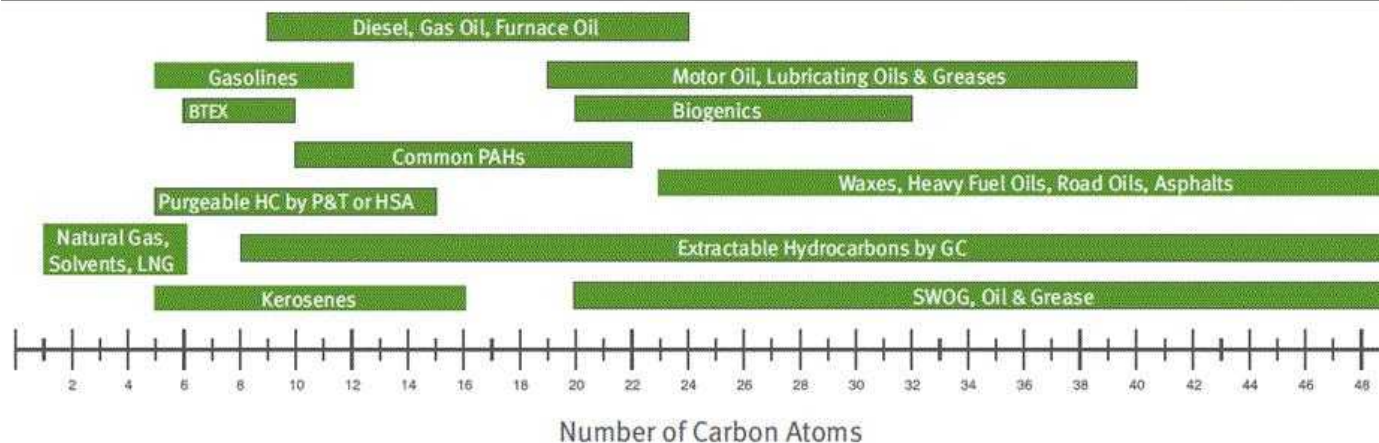
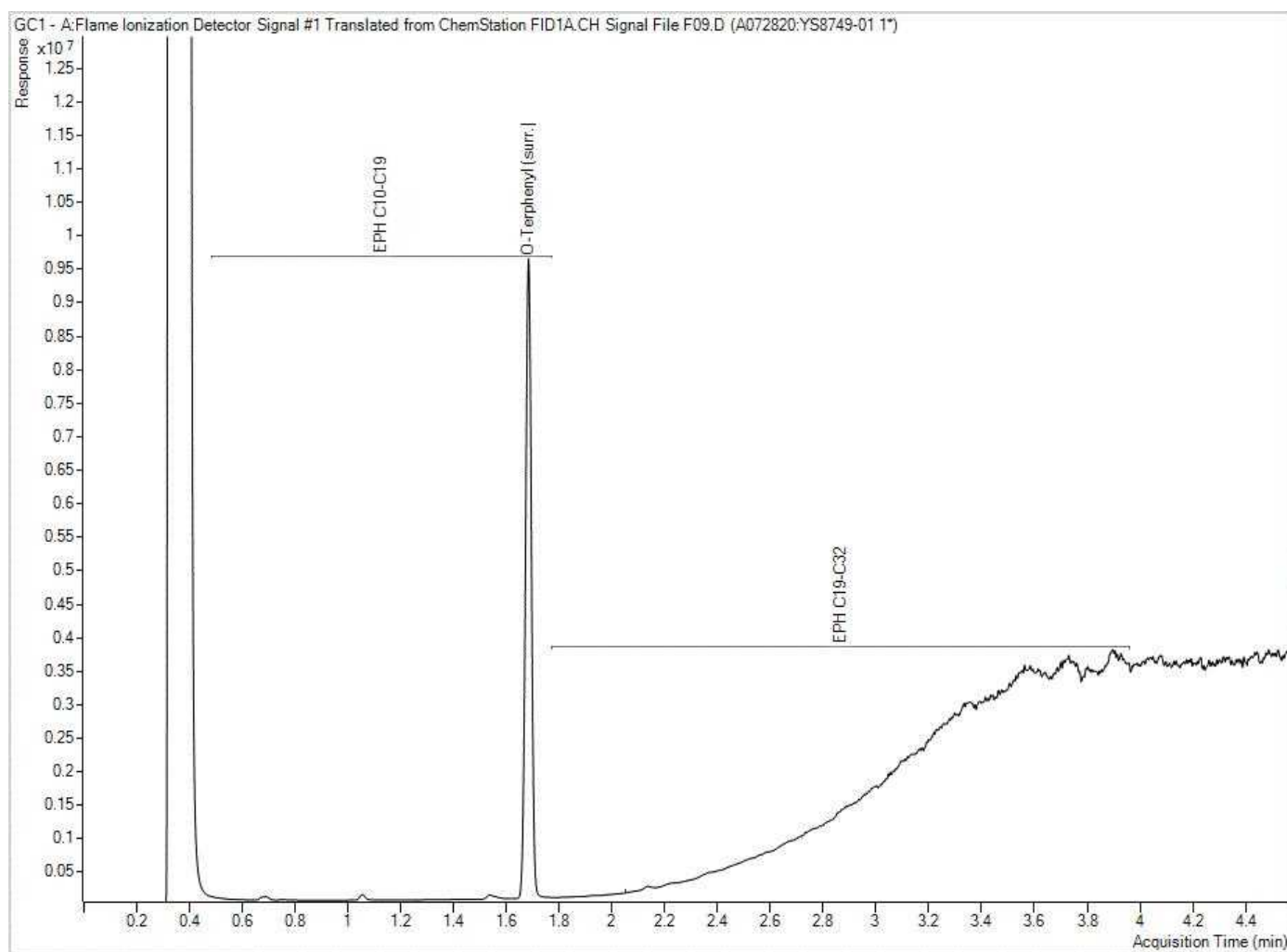
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



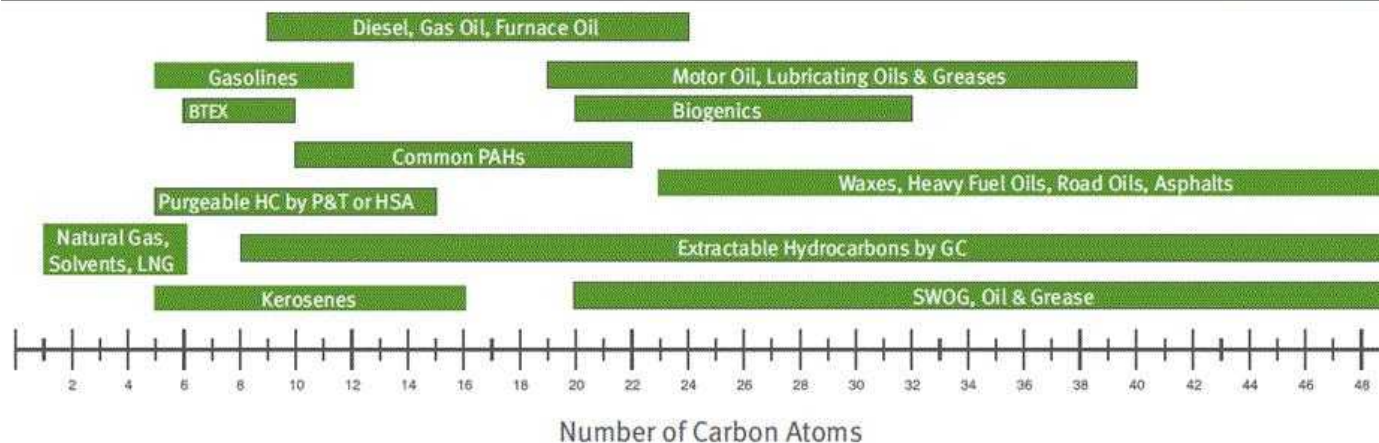
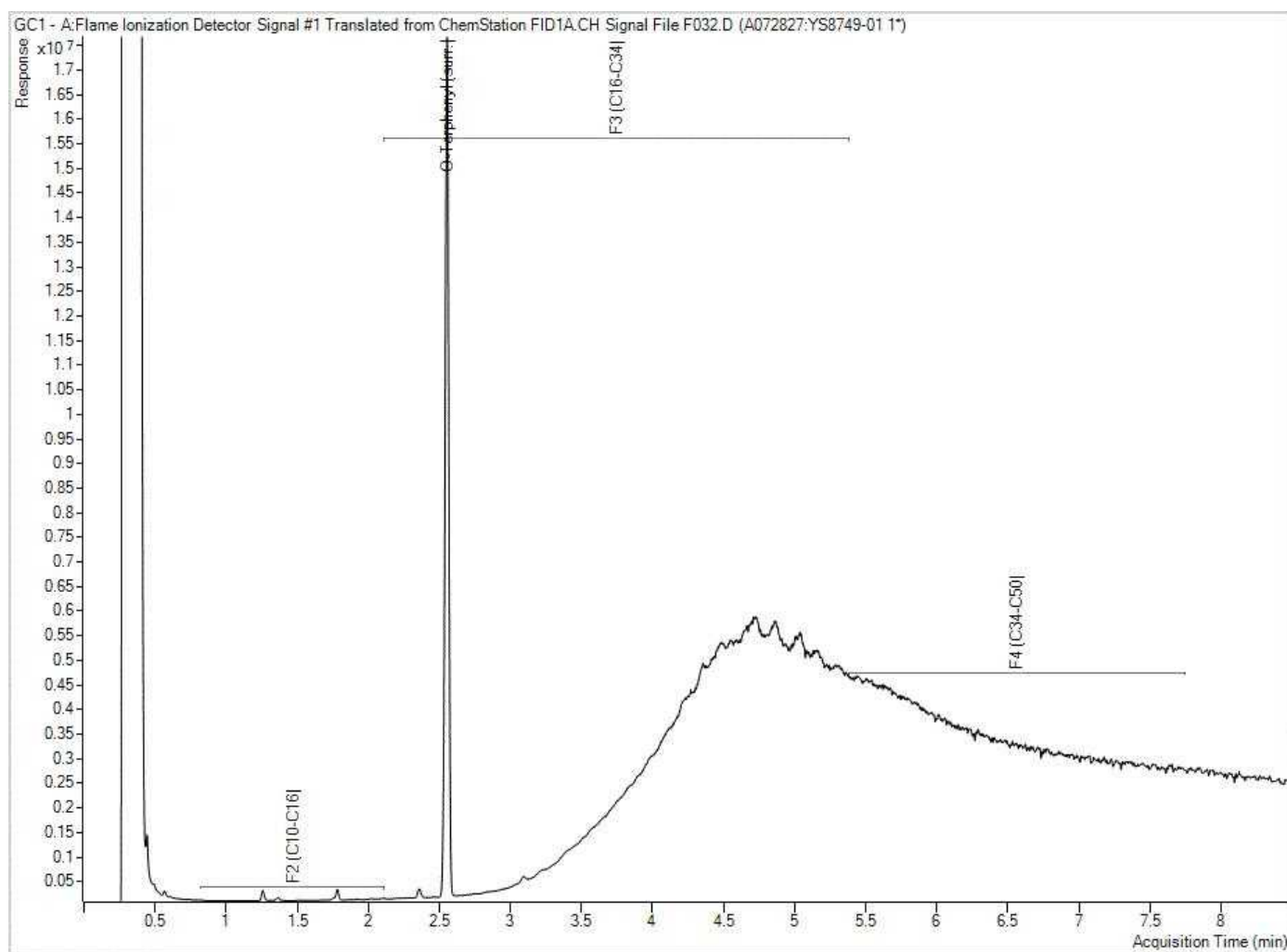
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EPH in Soil by GC/FID Chromatogram



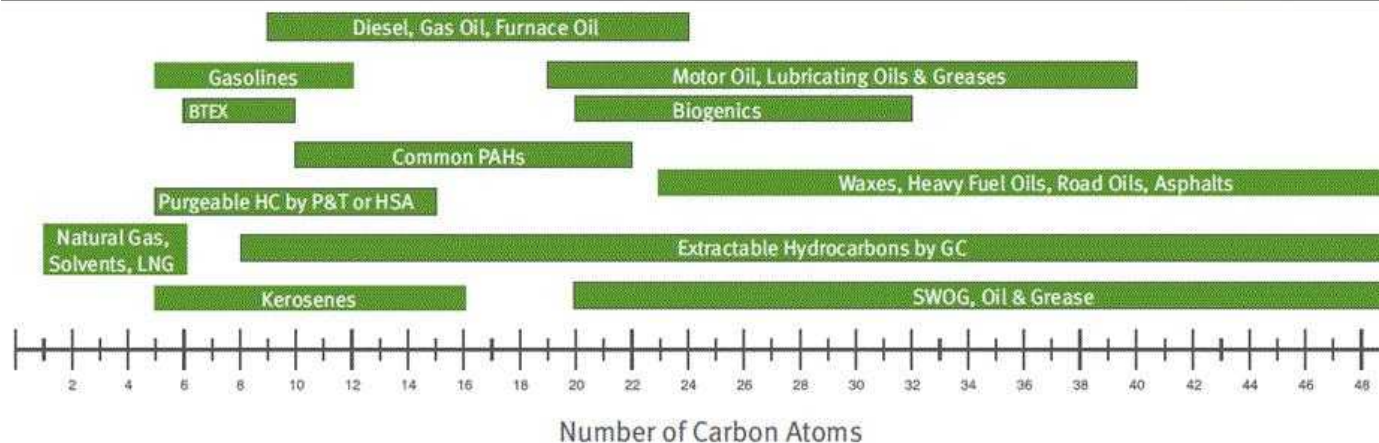
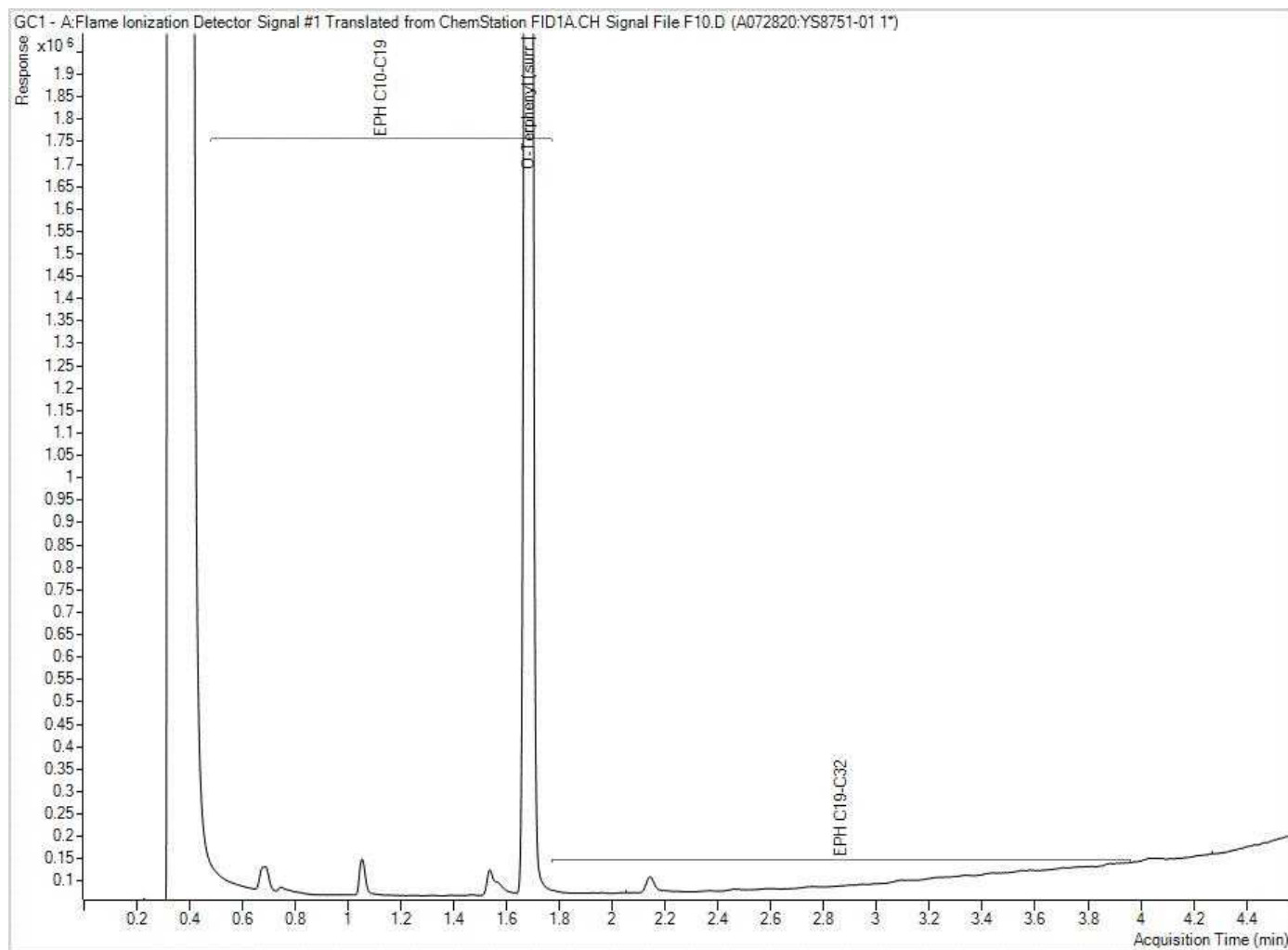
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



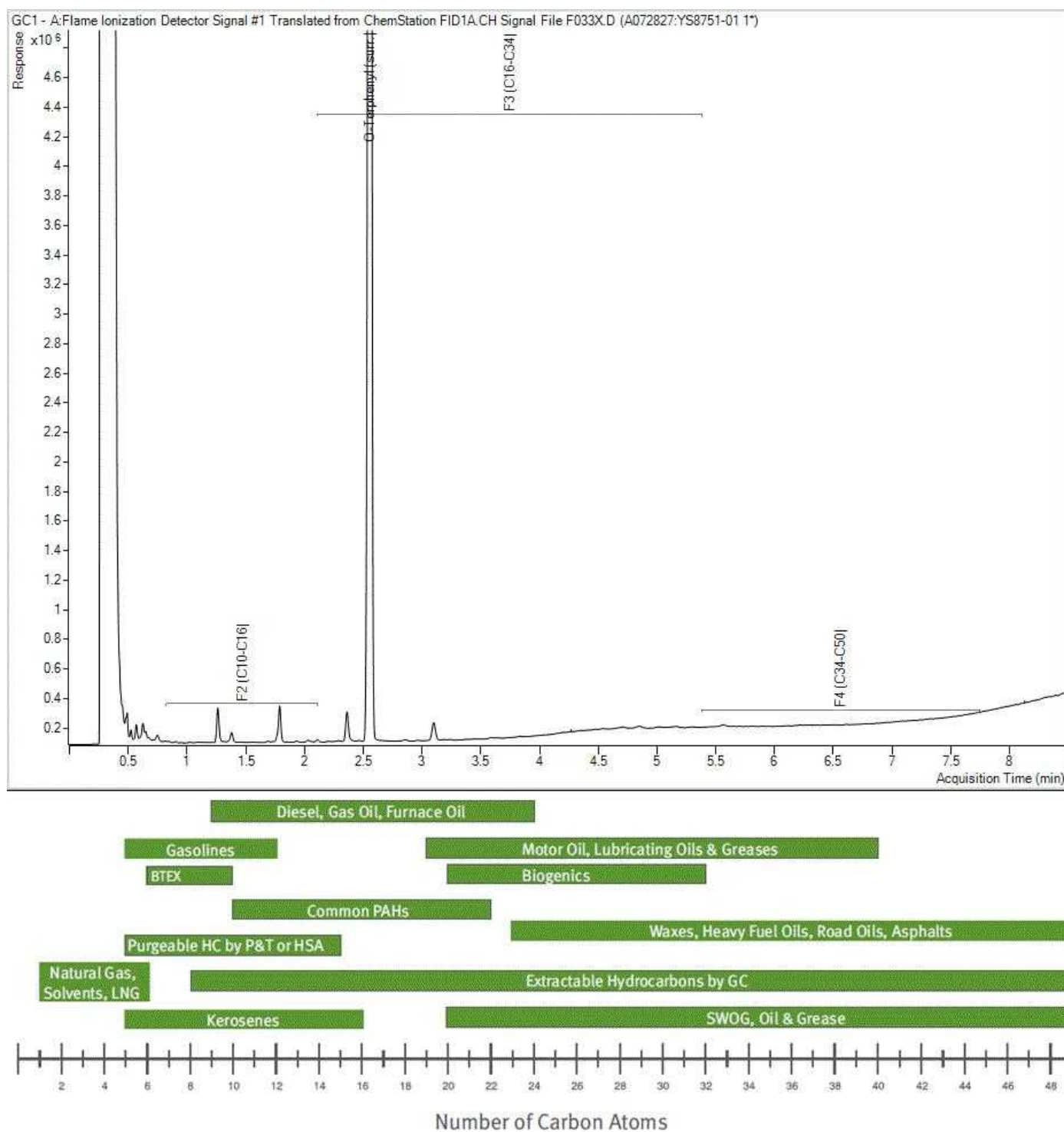
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EPH in Soil by GC/FID Chromatogram



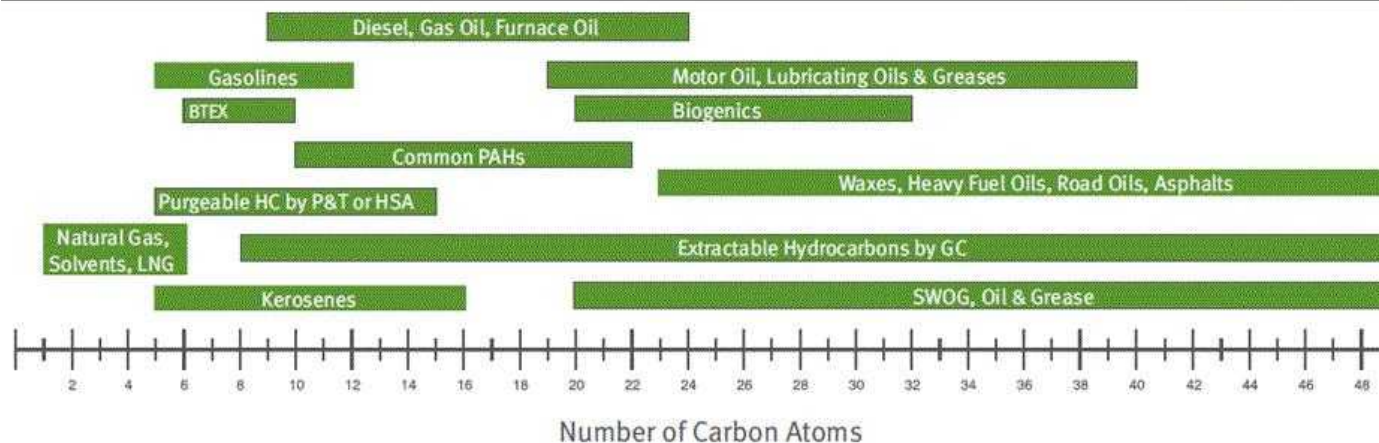
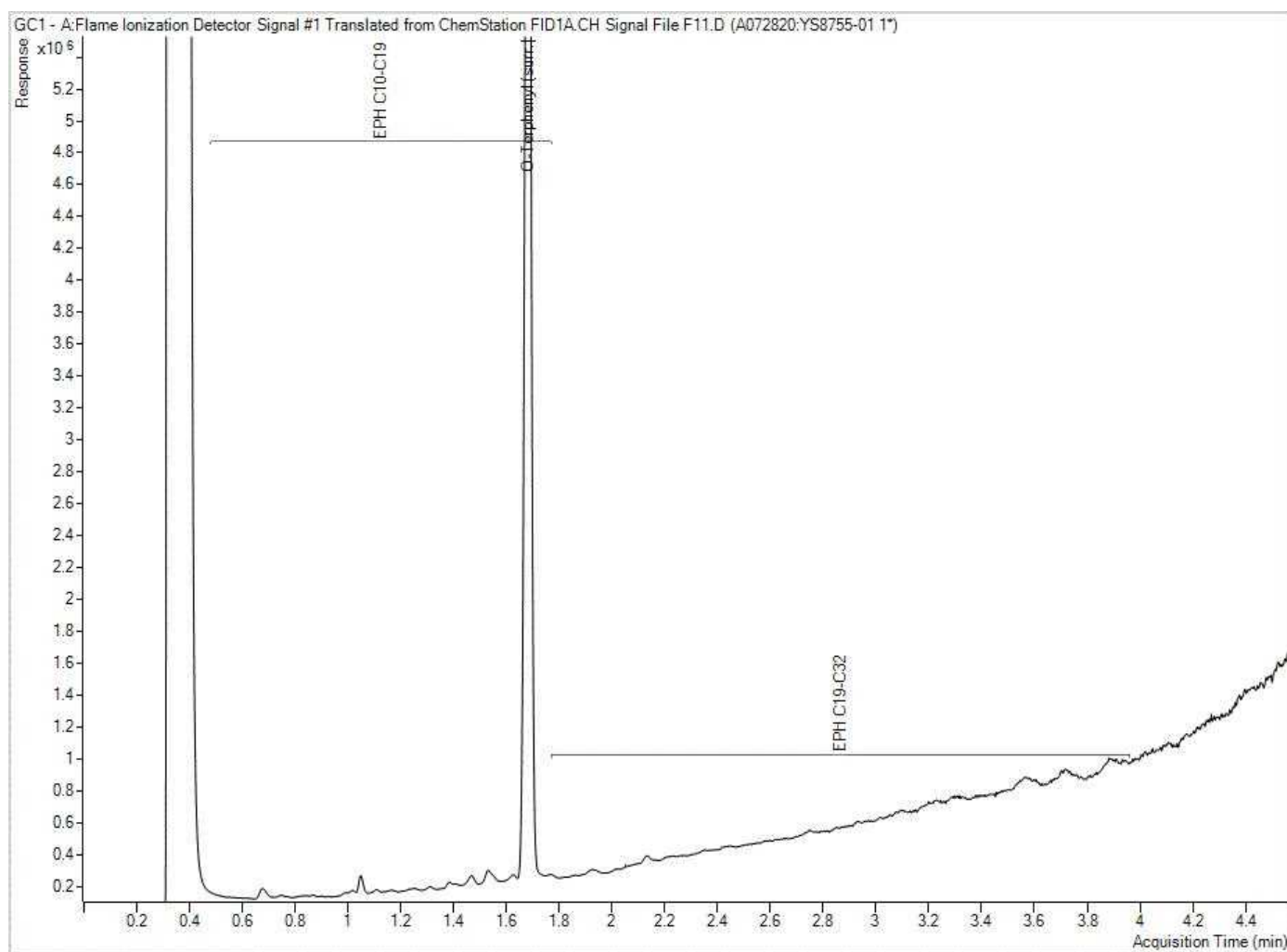
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



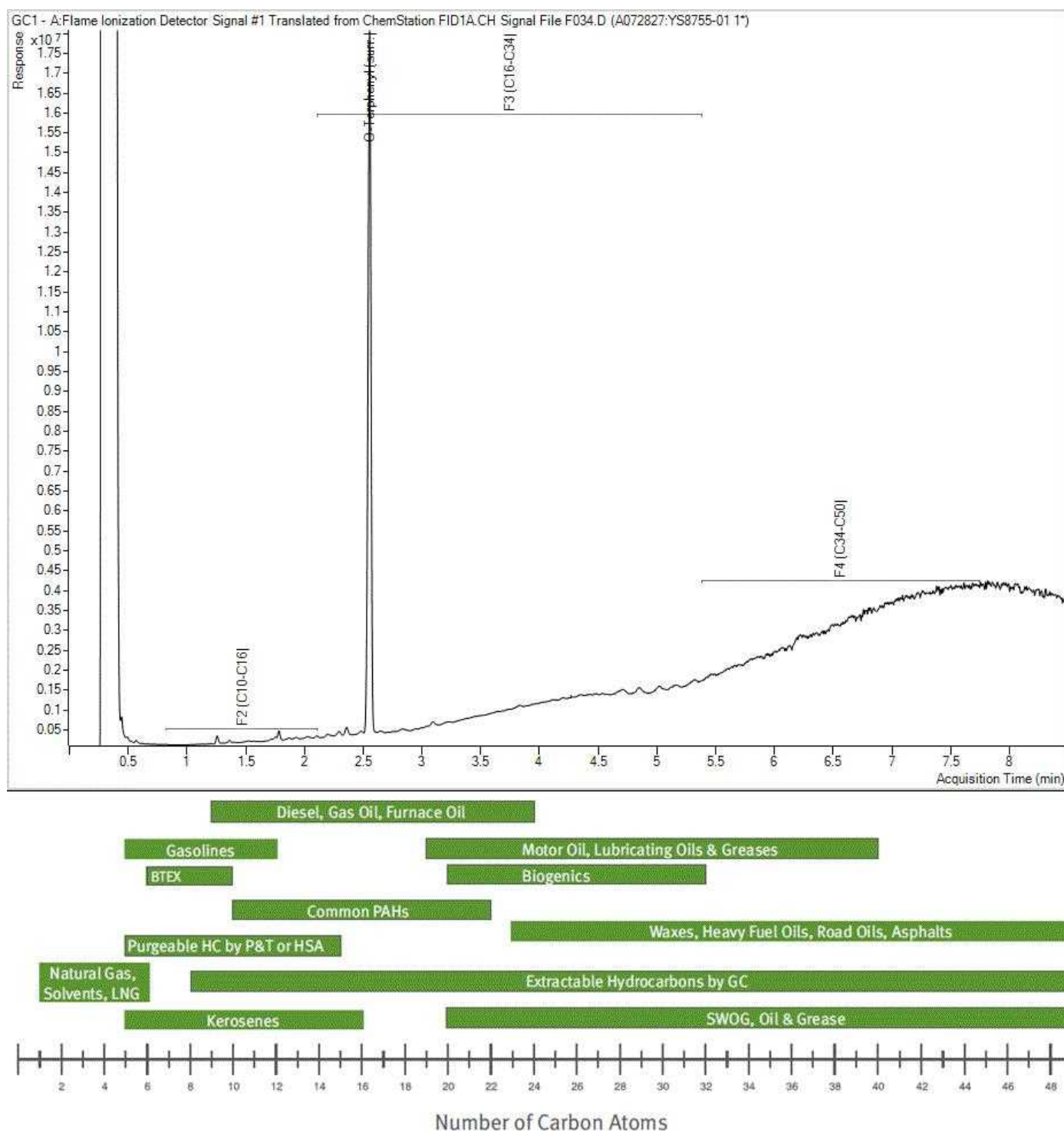
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EPH in Soil by GC/FID Chromatogram



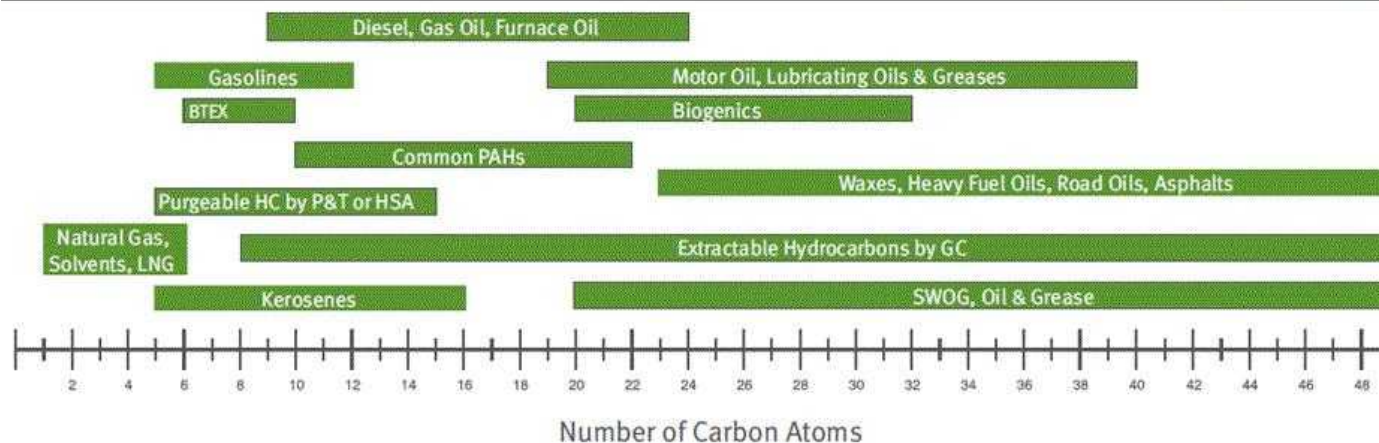
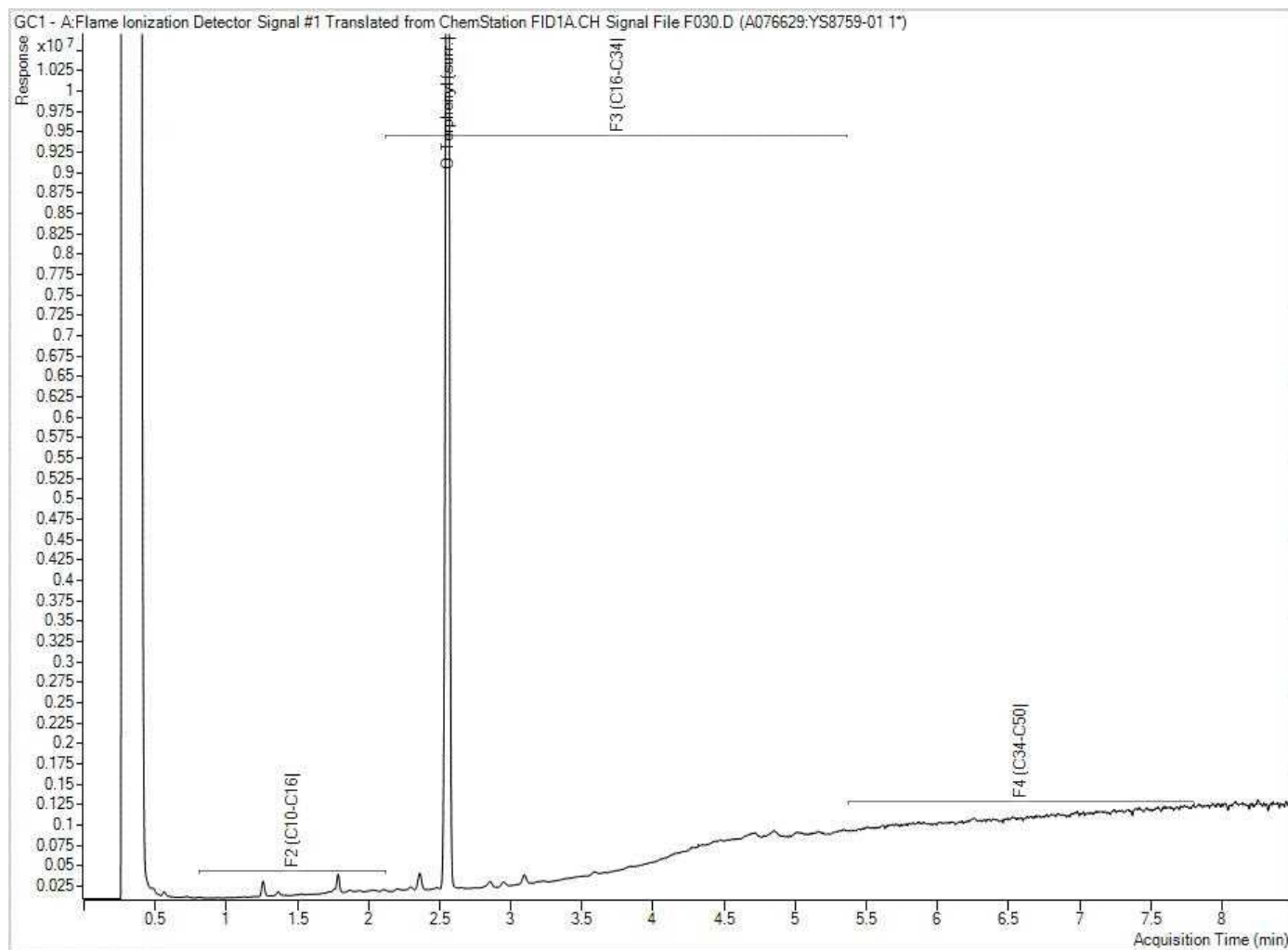
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



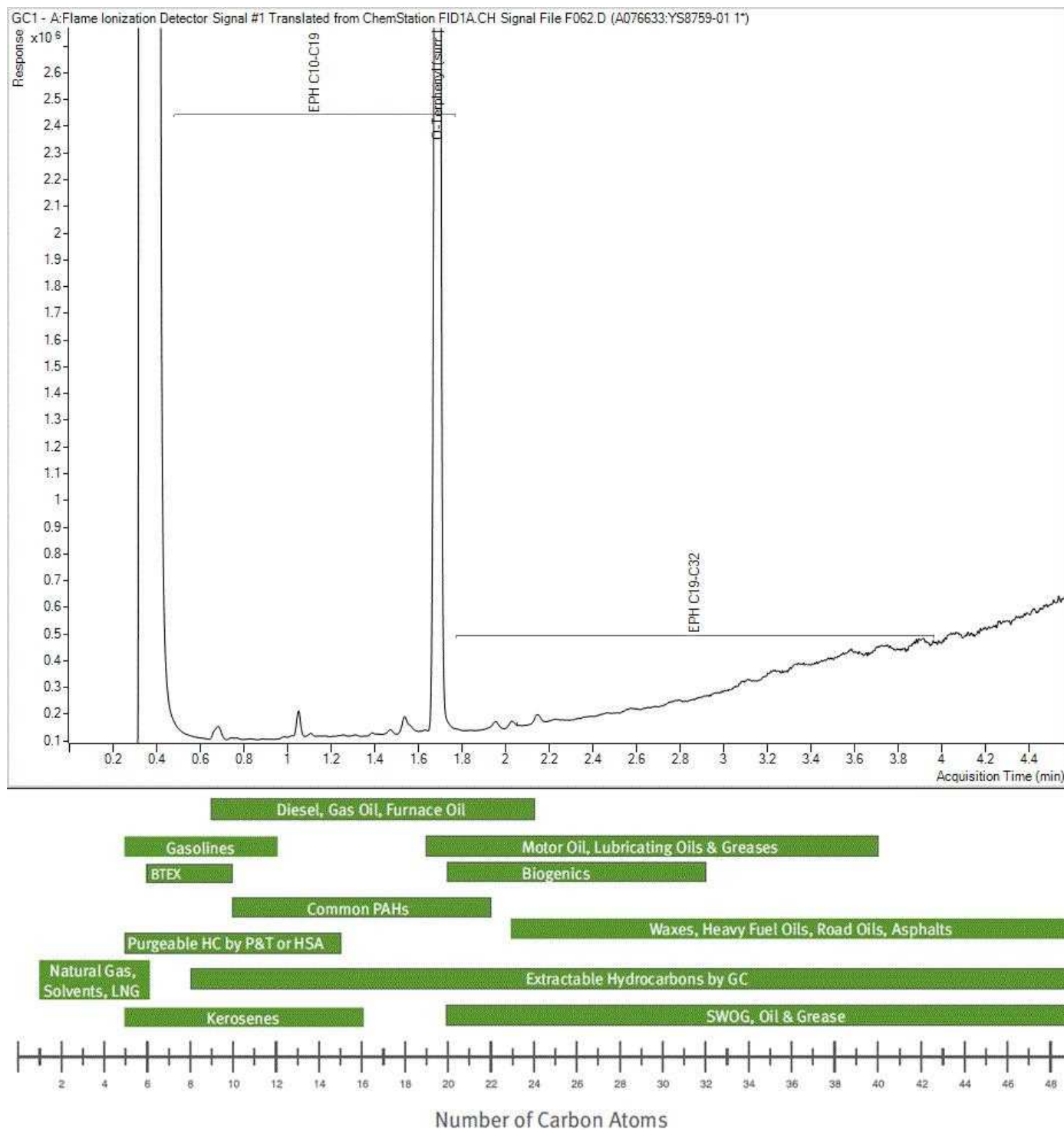
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



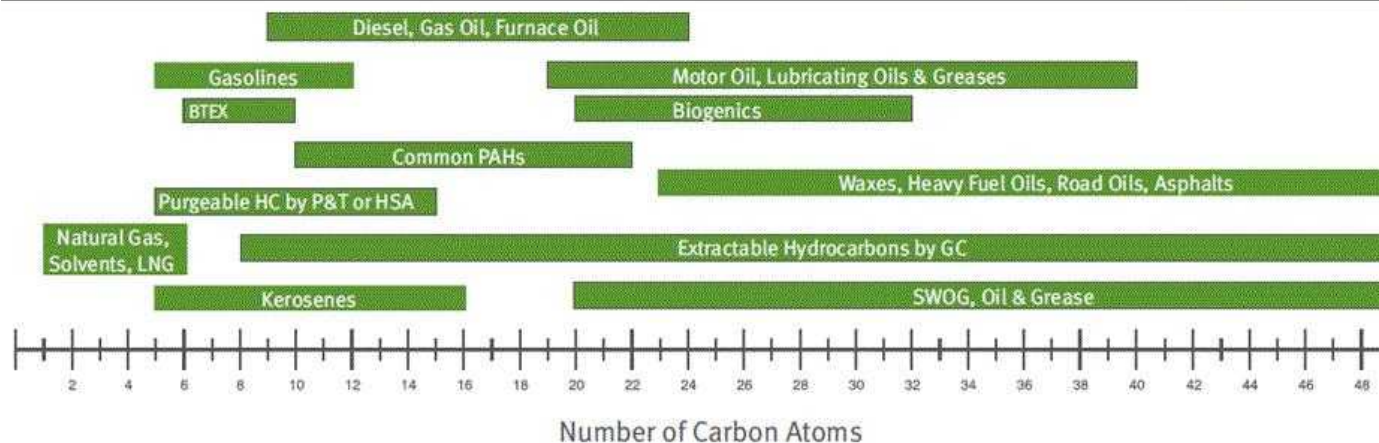
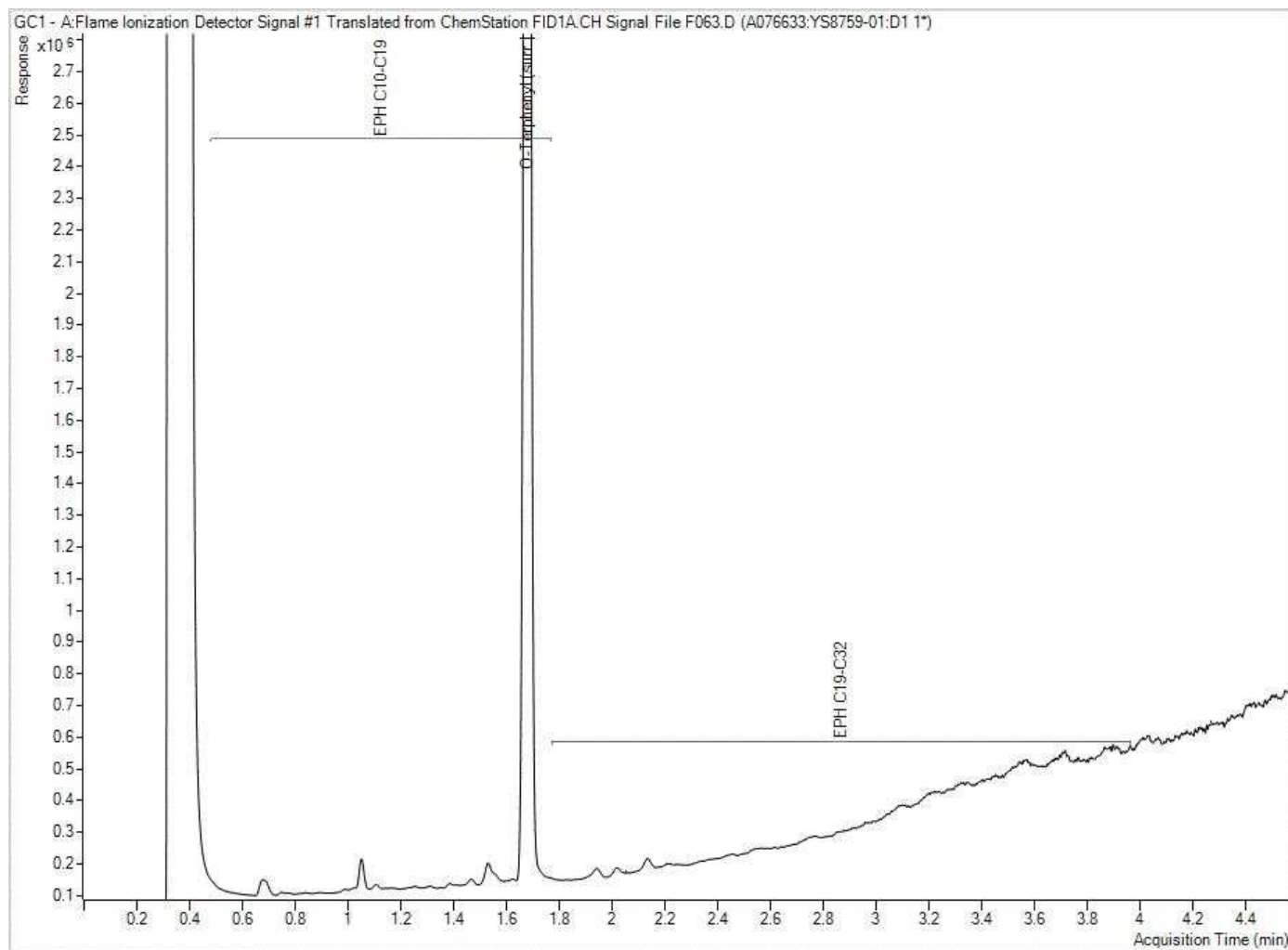
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EPH in Soil by GC/FID Chromatogram



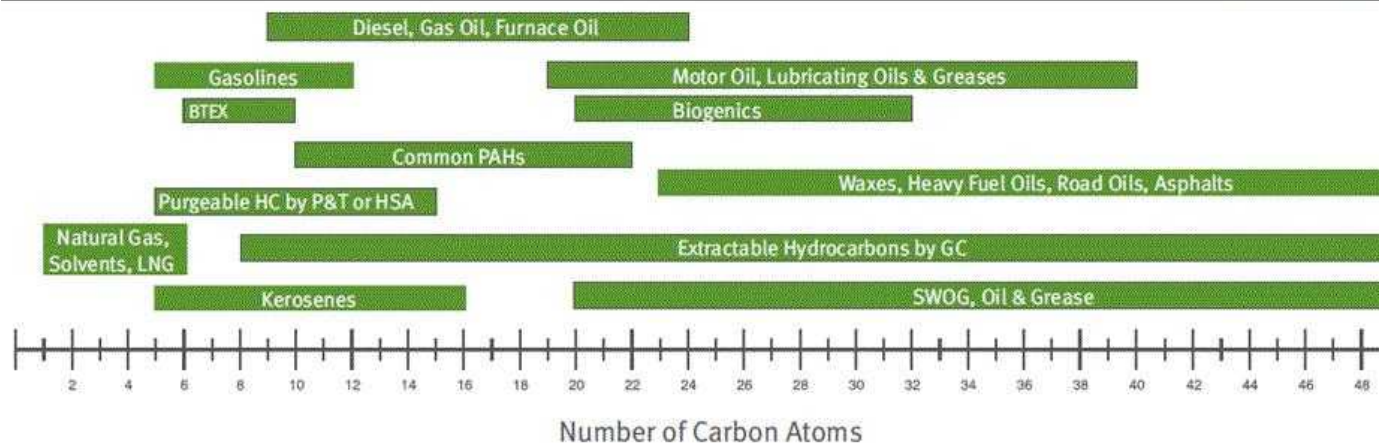
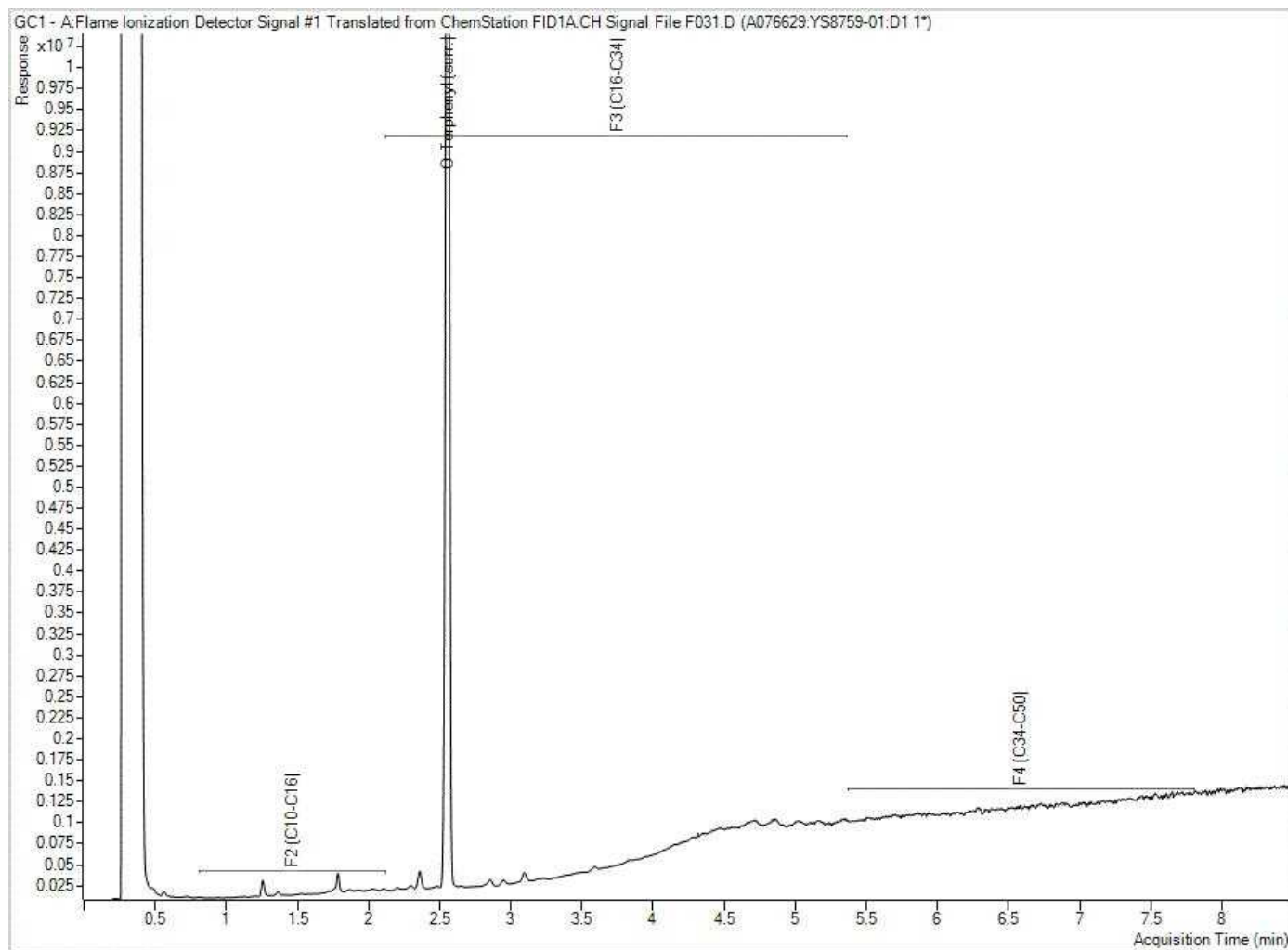
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EPH in Soil by GC/FID Chromatogram



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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 15934-2
Your C.O.C. #: 616161-48-01

Attention: Ross McCarter

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2020/11/05
Report #: R2951620
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C080056

Received: 2020/10/29, 14:50

Sample Matrix: Air
Samples Received: 8

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Extracted		
VOCs by TD – Complete List Calc (ug/m3)	8	N/A	2020/10/30 BBY WI-00033	Auto Calc
VOCs by TD Tube – Complete List (ug)	6	N/A	2020/11/02 BBY8SOP-00058	BCMOE BCLM Jun2009 m
VOCs by TD Tube – Complete List (ug)	2	N/A	2020/11/03 BBY8SOP-00058	BCMOE BCLM Jun2009 m
Duration	8	N/A	2020/10/30 N/A	Field Data
Flow Rate (L/min)	8	N/A	2020/10/30 N/A	Field Data
Volatile HC-BTEX Calculation for Air (1)	8	N/A	2020/11/03 BBY WI-00033	Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) VPH = VH - (Benzene + Toluene + Ethylbenzene + m & p-Xylene + o-Xylene + Styrene + n-Hexane + n-Decane)



Your Project #: 15934-2
Your C.O.C. #: 616161-48-01

Attention: Ross McCarter

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2020/11/05
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CERTIFICATE OF ANALYSIS

BV LABS JOB #: C080056

Received: 2020/10/29, 14:50

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gail Pedersen, Key Account Specialist

Email: Gail.Pedersen@bvlabs.com

Phone# (604) 734 7276

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This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: C080056
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM

VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)

BV Labs ID		YT5519	YT5520	YT5521	YT5522	YT5523		
Sampling Date		2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00		
COC Number		616161-48-01	616161-48-01	616161-48-01	616161-48-01	616161-48-01		
	UNITS	SV20-5	SV20-7	SV20-9	SV20-10	SV20-12	RDL	QC Batch
Field Parameters								
Duration	min	20	20	20	20	20	N/A	ONSITE
Flow Rate	L/min	0.2	0.2	0.2	0.2	0.2	N/A	ONSITE
Calculated Parameters								
1,1,1,2-tetrachloroethane	ug/m3	<0.38	<0.38	<0.38	<0.38	<0.38	0.38	A072699
1,1,1-trichloroethane	ug/m3	<50	<50	<50	<50	<50	50	A072699
1,1,2,2-tetrachloroethane	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,1,2-trichloroethane	ug/m3	<0.13	<0.13	0.18	<0.13	<0.13	0.13	A072699
1,1-dichloroethane	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,1-dichloroethene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,2,3-trichlorobenzene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,2,3-trichloropropane	ug/m3	<0.13	<0.13	<0.13	<0.13	<0.13	0.13	A072699
1,2,3-Trimethylbenzene	ug/m3	<2.5	<2.5	24	<2.5	<2.5	2.5	A072699
1,2,4-trichlorobenzene	ug/m3	<1.3	<1.3	<1.3	<1.3	<1.3	1.3	A072699
1,2,4-trimethylbenzene	ug/m3	1.2	<0.50	93	<0.50	<0.50	0.50	A072699
1,2-dibromo-3-chloropropane	ug/m3	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	A072699
1,2-dibromoethane	ug/m3	<0.13	<0.13	0.15	<0.13	<0.13	0.13	A072699
1,2-dichlorobenzene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,2-dichloroethane	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
1,2-dichloropropane	ug/m3	<0.50	<0.50	1.3	<0.50	<0.50	0.50	A072699
1,3,5-trimethylbenzene	ug/m3	<0.50	<0.50	29	<0.50	<0.50	0.50	A072699
1,3-Butadiene	ug/m3	<0.50	<0.50	4.2	<0.50	<0.50	0.50	A072699
1,3-dichlorobenzene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
1,3-dichloropropane	ug/m3	<0.38	<0.38	<0.38	<0.38	<0.38	0.38	A072699
1,4-dichlorobenzene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
2-Butanone (MEK)	ug/m3	<130	<130	<130	<130	<130	130	A072699
2-chlorophenol	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
2-chlorotoluene	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
2-Hexanone	ug/m3	<2.5	<2.5	11	<2.5	<2.5	2.5	A072699
4-chlorotoluene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
Acetone	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A072699
Benzene	ug/m3	22	<0.38	64	0.55	0.48	0.38	A072699
RDL = Reportable Detection Limit								
N/A = Not Applicable								

BUREAU
VERITASBV Labs Job #: C080056
Report Date: 2020/11/05KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM**VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)**

BV Labs ID		YT5519	YT5520	YT5521	YT5522	YT5523		
Sampling Date		2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00		
COC Number		616161-48-01	616161-48-01	616161-48-01	616161-48-01	616161-48-01		
	UNITS	SV20-5	SV20-7	SV20-9	SV20-10	SV20-12	RDL	QC Batch
Bromobenzene	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Bromodichloromethane	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Bromoform	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Bromomethane	ug/m3	<1.3	<1.3	<1.3	<1.3	<1.3	1.3	A072699
C6-C13 Hydrocarbons (VHv)	ug/m3	300	<130	8900	<130	<130	130	A072699
C6-C13 Hydrocarbons (VPHv)	ug/m3	280	<130	7800	<130	<130	130	A072699
Carbon tetrachloride	ug/m3	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	A072699
Chlorobenzene	ug/m3	2.3	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Chloroethane	ug/m3	<130	<130	<130	<130	<130	130	A072699
Chloroform	ug/m3	<0.50	<0.50	2.6	<0.50	<0.50	0.50	A072699
Chloromethane	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A072699
cis-1,2-dichloroethene	ug/m3	<2.5	<2.5	5.6	<2.5	<2.5	2.5	A072699
cis-1,3-dichloropropene	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Dibromochloromethane	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Dibromomethane	ug/m3	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A072699
Dichlorodifluoromethane	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A072699
Dichloromethane	ug/m3	<13	<13	<13	<13	<13	13	A072699
Ethyl acetate	ug/m3	<2.5	<2.5	9.6	<2.5	<2.5	2.5	A072699
Ethylbenzene	ug/m3	<50	<50	70	<50	<50	50	A072699
Hexachloro-1,3-butadiene	ug/m3	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	A072699
Isopropylbenzene	ug/m3	<0.50	<0.50	8.8	<0.50	<0.50	0.50	A072699
Methyl Isobutyl Ketone	ug/m3	<50	<50	<50	<50	<50	50	A072699
Methylcyclohexane	ug/m3	<50	<50	79	<50	<50	50	A072699
Methyl-tert-butylether (MTBE)	ug/m3	<50	<50	<50	<50	<50	50	A072699
Naphthalene	ug/m3	2.1	<0.75	3.3	<0.75	<0.75	0.75	A072699
n-Butylbenzene	ug/m3	<2.5	<2.5	4.0	<2.5	<2.5	2.5	A072699
n-Decane	ug/m3	<25	<25	<25	<25	<25	25	A072699
n-Hexane	ug/m3	<25	<25	410	<25	<25	25	A072699
n-Propylbenzene	ug/m3	<2.5	<2.5	27	<2.5	<2.5	2.5	A072699
p-Isopropyltoluene	ug/m3	<2.5	<2.5	15	<2.5	<2.5	2.5	A072699
sec-Butylbenzene	ug/m3	<2.5	<2.5	3.0	<2.5	<2.5	2.5	A072699
Styrene	ug/m3	<50	<50	<50	<50	<50	50	A072699
tert-Butylbenzene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
RDL = Reportable Detection Limit								

**VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)**

BV Labs ID		YT5519	YT5520	YT5521	YT5522	YT5523		
Sampling Date		2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00		
COC Number		616161-48-01	616161-48-01	616161-48-01	616161-48-01	616161-48-01		
	UNITS	SV20-5	SV20-7	SV20-9	SV20-10	SV20-12	RDL	QC Batch
Tetrachloroethene	ug/m3	<2.5	<2.5	4.9	<2.5	<2.5	2.5	A072699
Toluene	ug/m3	<50	<50	280	<50	<50	50	A072699
trans-1,2-dichloroethene	ug/m3	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	A072699
trans-1,3-dichloropropene	ug/m3	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A072699
Trichloroethene	ug/m3	0.98	1.0	1.8	1.6	0.93	0.25	A072699
Trichlorofluoromethane	ug/m3	<25	<25	<25	<25	<25	25	A072699
Vinyl chloride	ug/m3	<0.25	<0.25	2.6	<0.25	<0.25	0.25	A072699
m & p-Xylene	ug/m3	<2.5	<2.5	240	<2.5	<2.5	2.5	A072699
o-Xylene	ug/m3	<2.5	<2.5	84	<2.5	<2.5	2.5	A072699
Xylenes (Total)	ug/m3	<2.5	<2.5	320	<2.5	<2.5	2.5	A072699
C6-C13 Hydrocarbons (VPHv)	ug	1.1	<0.50	31	<0.50	<0.50	0.50	A072702
Volatiles								
1,1,1,2-tetrachloroethane	ug	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0015	A069589
1,1,1-trichloroethane	ug	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A069589
1,1,2,2-tetrachloroethane	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,1,2-trichloroethane	ug	<0.00050	<0.00050	0.00070	<0.00050	<0.00050	0.00050	A069589
1,1-dichloroethane	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,1-dichloroethene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,2,3-trichlorobenzene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,2,3-trichloropropane	ug	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	A069589
1,2,3-Trimethylbenzene	ug	<0.010	<0.010	0.095	<0.010	<0.010	0.010	A069589
1,2,4-trichlorobenzene	ug	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A069589
1,2,4-trimethylbenzene	ug	0.0047	<0.0020	0.37	<0.0020	<0.0020	0.0020	A069589
1,2-dibromo-3-chloropropane	ug	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A069589
1,2-dibromoethane	ug	<0.00050	<0.00050	0.00060 (1)	<0.00050	<0.00050	0.00050	A069589
1,2-dichlorobenzene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,2-dichloroethane	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
1,2-dichloropropane	ug	<0.0020	<0.0020	0.0052 (1)	<0.0020	<0.0020	0.0020	A069589
1,3,5-trimethylbenzene	ug	<0.0020	<0.0020	0.11	<0.0020	<0.0020	0.0020	A069589
1,3-Butadiene	ug	<0.0020	<0.0020	0.017 (1)	<0.0020	<0.0020	0.0020	A069589
1,3-dichlorobenzene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
1,3-dichloropropane	ug	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0015	A069589
RDL = Reportable Detection Limit								
(1) Tentatively identified result and may be potentially biased high due to matrix interference.								



VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)

BV Labs ID		YT5519	YT5520	YT5521	YT5522	YT5523		
Sampling Date		2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00		
COC Number		616161-48-01	616161-48-01	616161-48-01	616161-48-01	616161-48-01		
	UNITS	SV20-5	SV20-7	SV20-9	SV20-10	SV20-12	RDL	QC Batch
1,4-dichlorobenzene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
2-Butanone (MEK)	ug	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A069589
2-chlorophenol	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
2-chlorotoluene	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
2-Hexanone	ug	<0.010	<0.010	0.042 (1)	<0.010	<0.010	0.010	A069589
4-chlorotoluene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
Acetone	ug	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A069589
Benzene	ug	0.088 (2)	<0.0015	0.26	0.0022	0.0019	0.0015	A069589
Bromobenzene	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Bromodichloromethane	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Bromoform	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Bromomethane	ug	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A069589
C6-C13 Hydrocarbons (VHv)	ug	1.2	<0.50	36	<0.50	<0.50	0.50	A069589
Carbon tetrachloride	ug	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A069589
Chlorobenzene	ug	0.0092	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Chloroethane	ug	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A069589
Chloroform	ug	<0.0020	<0.0020	0.010	<0.0020	<0.0020	0.0020	A069589
Chloromethane	ug	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A069589
cis-1,2-dichloroethene	ug	<0.010	<0.010	0.022	<0.010	<0.010	0.010	A069589
cis-1,3-dichloropropene	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Dibromochloromethane	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Dibromomethane	ug	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	A069589
Dichlorodifluoromethane	ug	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A069589
Dichloromethane	ug	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A069589
Ethyl acetate	ug	<0.010	<0.010	0.038	<0.010	<0.010	0.010	A069589
Ethylbenzene	ug	<0.20	<0.20	0.28	<0.20	<0.20	0.20	A069589
Hexachloro-1,3-butadiene	ug	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A069589
Isopropylbenzene	ug	<0.0020	<0.0020	0.035 (1)	<0.0020	<0.0020	0.0020	A069589
Methyl Isobutyl Ketone	ug	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A069589
Methylcyclohexane	ug	<0.20	<0.20	0.32	<0.20	<0.20	0.20	A069589
Methyl-tert-butylether (MTBE)	ug	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A069589
Naphthalene	ug	0.0082	<0.0030	0.013	<0.0030	<0.0030	0.0030	A069589

RDL = Reportable Detection Limit

(1) Tentatively identified result and may be potentially biased high due to matrix interference.

(2) Retention time outside of acceptance criteria but compound meets all other identification

**VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)**

BV Labs ID		YT5519	YT5520	YT5521	YT5522	YT5523		
Sampling Date		2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00	2020/10/27 08:00		
COC Number		616161-48-01	616161-48-01	616161-48-01	616161-48-01	616161-48-01		
	UNITS	SV20-5	SV20-7	SV20-9	SV20-10	SV20-12	RDL	QC Batch
n-Butylbenzene	ug	<0.010	<0.010	0.016 (1)	<0.010	<0.010	0.010	A069589
n-Decane	ug	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A069589
n-Hexane	ug	<0.10	<0.10	1.6	<0.10	<0.10	0.10	A069589
n-Propylbenzene	ug	<0.010	<0.010	0.11	<0.010	<0.010	0.010	A069589
p-Isopropyltoluene	ug	<0.010	<0.010	0.059	<0.010	<0.010	0.010	A069589
sec-Butylbenzene	ug	<0.010	<0.010	0.012	<0.010	<0.010	0.010	A069589
Styrene	ug	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A069589
tert-Butylbenzene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
Tetrachloroethene	ug	<0.010	<0.010	0.020	<0.010	<0.010	0.010	A069589
Toluene	ug	<0.20	<0.20	1.1	<0.20	<0.20	0.20	A069589
trans-1,2-dichloroethene	ug	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A069589
trans-1,3-dichloropropene	ug	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	A069589
Trichloroethene	ug	0.0039	0.0041	0.0072	0.0065	0.0037	0.0010	A069589
Trichlorofluoromethane	ug	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A069589
Vinyl chloride	ug	<0.0010	<0.0010	0.010	<0.0010	<0.0010	0.0010	A069589
m & p-Xylene	ug	<0.010	<0.010	0.95	<0.010	<0.010	0.010	A069589
o-Xylene	ug	<0.010	<0.010	0.34	<0.010	<0.010	0.010	A069589
Xylenes (Total)	ug	<0.010	<0.010	1.3	<0.010	<0.010	0.010	A069589

RDL = Reportable Detection Limit

(1) Tentatively identified result and may be potentially biased high due to matrix interference.



BV Labs Job #: C080056
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM

VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)

BV Labs ID		YT5524		YT5525		YT5526		
Sampling Date		2020/10/27 08:00		2020/10/27 08:00		2020/10/27 08:00		
COC Number		616161-48-01		616161-48-01		616161-48-01		
	UNITS	SV20-13	RDL	SV20-15	RDL	SV20-A	RDL	QC Batch
Field Parameters								
Duration	min	20	N/A	20	N/A	20	N/A	ONSITE
Flow Rate	L/min	0.2	N/A	0.2	N/A	0.2	N/A	ONSITE
Calculated Parameters								
1,1,1,2-tetrachloroethane	ug/m3	<0.38	0.38	<0.38	0.38	<0.38	0.38	A072699
1,1,1-trichloroethane	ug/m3	<50	50	<50	50	<50	50	A072699
1,1,2,2-tetrachloroethane	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,1,2-trichloroethane	ug/m3	<0.13	0.13	0.55	0.13	<0.13	0.13	A072699
1,1-dichloroethane	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,1-dichloroethene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,2,3-trichlorobenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,2,3-trichloropropane	ug/m3	<0.13	0.13	2.4	0.13	<0.13	0.13	A072699
1,2,3-Trimethylbenzene	ug/m3	<2.5	2.5	40	2.5	<2.5	2.5	A072699
1,2,4-trichlorobenzene	ug/m3	<1.3	1.3	<1.3	1.3	<1.3	1.3	A072699
1,2,4-trimethylbenzene	ug/m3	<0.50	0.50	130	0.50	<0.50	0.50	A072699
1,2-dibromo-3-chloropropane	ug/m3	<0.25	0.25	<0.25	0.25	<0.25	0.25	A072699
1,2-dibromoethane	ug/m3	<0.13	0.13	0.23	0.13	<0.13	0.13	A072699
1,2-dichlorobenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,2-dichloroethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
1,2-dichloropropane	ug/m3	<0.50	0.50	6.9	0.50	<0.50	0.50	A072699
1,3,5-trimethylbenzene	ug/m3	<0.50	0.50	66	0.50	<0.50	0.50	A072699
1,3-Butadiene	ug/m3	<0.50	0.50	5.6	0.50	<0.50	0.50	A072699
1,3-dichlorobenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
1,3-dichloropropane	ug/m3	<0.38	0.38	<0.38	0.38	<0.38	0.38	A072699
1,4-dichlorobenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
2-Butanone (MEK)	ug/m3	<130	130	<130	130	<130	130	A072699
2-chlorophenol	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
2-chlorotoluene	ug/m3	<0.50	0.50	0.80	0.50	<0.50	0.50	A072699
2-Hexanone	ug/m3	<2.5	2.5	4.7	2.5	<2.5	2.5	A072699
4-chlorotoluene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
Acetone	ug/m3	<5.0	5.0	<5.0	5.0	<5.0	5.0	A072699
Benzene	ug/m3	0.93	0.38	240	0.38	<0.38	0.38	A072699
RDL = Reportable Detection Limit N/A = Not Applicable								

**VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)**

BV Labs ID		YT5524		YT5525		YT5526		
Sampling Date		2020/10/27 08:00		2020/10/27 08:00		2020/10/27 08:00		
COC Number		616161-48-01		616161-48-01		616161-48-01		
	UNITS	SV20-13	RDL	SV20-15	RDL	SV20-A	RDL	QC Batch
Bromobenzene	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Bromodichloromethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Bromoform	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Bromomethane	ug/m3	<1.3	1.3	<1.3	1.3	<1.3	1.3	A072699
C6-C13 Hydrocarbons (VHv)	ug/m3	<130	130	14000	130	<130	130	A072699
C6-C13 Hydrocarbons (VPHv)	ug/m3	<130	130	13000	130	<130	130	A072699
Carbon tetrachloride	ug/m3	<0.25	0.25	0.33	0.25	<0.25	0.25	A072699
Chlorobenzene	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Chloroethane	ug/m3	<130	130	<130	130	<130	130	A072699
Chloroform	ug/m3	<0.50	0.50	0.68	0.50	<0.50	0.50	A072699
Chloromethane	ug/m3	<5.0	5.0	<5.0	5.0	<5.0	5.0	A072699
cis-1,2-dichloroethene	ug/m3	<2.5	2.5	3.0	2.5	<2.5	2.5	A072699
cis-1,3-dichloropropene	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Dibromochloromethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	A072699
Dibromomethane	ug/m3	<1.0	1.0	<1.0	1.0	<1.0	1.0	A072699
Dichlorodifluoromethane	ug/m3	<5.0	5.0	<5.0	5.0	<5.0	5.0	A072699
Dichloromethane	ug/m3	<13	13	<13	13	<13	13	A072699
Ethyl acetate	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
Ethylbenzene	ug/m3	<50	50	110	50	<50	50	A072699
Hexachloro-1,3-butadiene	ug/m3	<0.25	0.25	<0.25	0.25	<0.25	0.25	A072699
Isopropylbenzene	ug/m3	<0.50	0.50	18	0.50	<0.50	0.50	A072699
Methyl Isobutyl Ketone	ug/m3	<50	50	<50	50	<50	50	A072699
Methylcyclohexane	ug/m3	<50	50	380	50	<50	50	A072699
Methyl-tert-butylether (MTBE)	ug/m3	<50	50	<50	50	<50	50	A072699
Naphthalene	ug/m3	<0.75	0.75	5.3	0.75	<0.75	0.75	A072699
n-Butylbenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
n-Decane	ug/m3	<25	25	75	25	<25	25	A072699
n-Hexane	ug/m3	<25	25	510	250	<25	25	A072699
n-Propylbenzene	ug/m3	<2.5	2.5	54	2.5	<2.5	2.5	A072699
p-Isopropyltoluene	ug/m3	<2.5	2.5	70	2.5	<2.5	2.5	A072699
sec-Butylbenzene	ug/m3	<2.5	2.5	5.6	2.5	<2.5	2.5	A072699
Styrene	ug/m3	<50	50	<50	50	<50	50	A072699
tert-Butylbenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
RDL = Reportable Detection Limit								



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BV Labs Job #: C080056
Report Date: 2020/11/05

KEystone ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM

VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)

BV Labs ID		YT5524		YT5525		YT5526		
Sampling Date		2020/10/27 08:00		2020/10/27 08:00		2020/10/27 08:00		
COC Number		616161-48-01		616161-48-01		616161-48-01		
	UNITS	SV20-13	RDL	SV20-15	RDL	SV20-A	RDL	QC Batch
Tetrachloroethene	ug/m3	<2.5	2.5	4.4	2.5	<2.5	2.5	A072699
Toluene	ug/m3	<50	50	<50	50	<50	50	A072699
trans-1,2-dichloroethene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	A072699
trans-1,3-dichloropropene	ug/m3	<0.50	0.50	1.3	0.50	<0.50	0.50	A072699
Trichloroethene	ug/m3	1.5	0.25	3.2	0.25	0.90	0.25	A072699
Trichlorofluoromethane	ug/m3	<25	25	<25	25	<25	25	A072699
Vinyl chloride	ug/m3	<0.25	0.25	8.7	0.25	<0.25	0.25	A072699
m & p-Xylene	ug/m3	<2.5	2.5	480	2.5	<2.5	2.5	A072699
o-Xylene	ug/m3	<2.5	2.5	190	2.5	<2.5	2.5	A072699
Xylenes (Total)	ug/m3	<2.5	2.5	670	2.5	<2.5	2.5	A072699
C6-C13 Hydrocarbons (VPHv)	ug	<0.50	0.50	50	1.0	<0.50	0.50	A072702
Volatiles								
1,1,1,2-tetrachloroethane	ug	<0.0015	0.0015	<0.0015	0.0015	<0.0015	0.0015	A069589
1,1,1-trichloroethane	ug	<0.20	0.20	<0.20	0.20	<0.20	0.20	A069589
1,1,2,2-tetrachloroethane	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,1,2-trichloroethane	ug	<0.00050	0.00050	0.0022	0.00050	<0.00050	0.00050	A069589
1,1-dichloroethane	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,1-dichloroethene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,2,3-trichlorobenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,2,3-trichloropropane	ug	<0.00050	0.00050	0.0095 (1)	0.00050	<0.00050	0.00050	A069589
1,2,3-Trimethylbenzene	ug	<0.010	0.010	0.16	0.010	<0.010	0.010	A069589
1,2,4-trichlorobenzene	ug	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A069589
1,2,4-trimethylbenzene	ug	<0.0020	0.0020	0.51	0.0020	<0.0020	0.0020	A069589
1,2-dibromo-3-chloropropane	ug	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	A069589
1,2-dibromoethane	ug	<0.00050	0.00050	0.00090 (1)	0.00050	<0.00050	0.00050	A069589
1,2-dichlorobenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,2-dichloroethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
1,2-dichloropropane	ug	<0.0020	0.0020	0.028 (1)	0.0020	<0.0020	0.0020	A069589
1,3,5-trimethylbenzene	ug	<0.0020	0.0020	0.27	0.0020	<0.0020	0.0020	A069589
1,3-Butadiene	ug	<0.0020	0.0020	0.023 (1)	0.0020	<0.0020	0.0020	A069589
1,3-dichlorobenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
1,3-dichloropropane	ug	<0.0015	0.0015	<0.0015	0.0015	<0.0015	0.0015	A069589
RDL = Reportable Detection Limit								
(1) Tentatively identified result and may be potentially biased high due to matrix interference.								



VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)

BV Labs ID		YT5524		YT5525		YT5526		
Sampling Date		2020/10/27 08:00		2020/10/27 08:00		2020/10/27 08:00		
COC Number		616161-48-01		616161-48-01		616161-48-01		
	UNITS	SV20-13	RDL	SV20-15	RDL	SV20-A	RDL	QC Batch
1,4-dichlorobenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
2-Butanone (MEK)	ug	<0.50	0.50	<0.50	0.50	<0.50	0.50	A069589
2-chlorophenol	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
2-chlorotoluene	ug	<0.0020	0.0020	0.0032	0.0020	<0.0020	0.0020	A069589
2-Hexanone	ug	<0.010	0.010	0.019 (1)	0.010	<0.010	0.010	A069589
4-chlorotoluene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
Acetone	ug	<0.020	0.020	<0.020	0.020	<0.020	0.020	A069589
Benzene	ug	0.0037	0.0015	0.96	0.0015	<0.0015	0.0015	A069589
Bromobenzene	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Bromodichloromethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Bromoform	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Bromomethane	ug	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A069589
C6-C13 Hydrocarbons (VHv)	ug	<0.50	0.50	56	0.50	<0.50	0.50	A069589
Carbon tetrachloride	ug	<0.0010	0.0010	0.0013	0.0010	<0.0010	0.0010	A069589
Chlorobenzene	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Chloroethane	ug	<0.50	0.50	<0.50	0.50	<0.50	0.50	A069589
Chloroform	ug	<0.0020	0.0020	0.0027 (1)	0.0020	<0.0020	0.0020	A069589
Chloromethane	ug	<0.020	0.020	<0.020	0.020	<0.020	0.020	A069589
cis-1,2-dichloroethene	ug	<0.010	0.010	0.012	0.010	<0.010	0.010	A069589
cis-1,3-dichloropropene	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Dibromochloromethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	A069589
Dibromomethane	ug	<0.0040	0.0040	<0.0040	0.0040	<0.0040	0.0040	A069589
Dichlorodifluoromethane	ug	<0.020	0.020	<0.020	0.020	<0.020	0.020	A069589
Dichloromethane	ug	<0.050	0.050	<0.050	0.050	<0.050	0.050	A069589
Ethyl acetate	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
Ethylbenzene	ug	<0.20	0.20	0.45	0.20	<0.20	0.20	A069589
Hexachloro-1,3-butadiene	ug	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	A069589
Isopropylbenzene	ug	<0.0020	0.0020	0.074	0.0020	<0.0020	0.0020	A069589
Methyl Isobutyl Ketone	ug	<0.20	0.20	<0.20	0.20	<0.20	0.20	A069589
Methylcyclohexane	ug	<0.20	0.20	1.5	0.20	<0.20	0.20	A069589
Methyl-tert-butylether (MTBE)	ug	<0.20	0.20	<0.20	0.20	<0.20	0.20	A069589
Naphthalene	ug	<0.0030	0.0030	0.021	0.0030	<0.0030	0.0030	A069589
RDL = Reportable Detection Limit								
(1) Tentatively identified result and may be potentially biased high due to matrix interference.								

**VOC/VPH PLUS PACKAGE IN AIR BY TD (AIR)**

BV Labs ID		YT5524		YT5525		YT5526		
Sampling Date		2020/10/27 08:00		2020/10/27 08:00		2020/10/27 08:00		
COC Number		616161-48-01		616161-48-01		616161-48-01		
	UNITS	SV20-13	RDL	SV20-15	RDL	SV20-A	RDL	QC Batch
n-Butylbenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
n-Decane	ug	<0.10	0.10	0.30	0.10	<0.10	0.10	A069589
n-Hexane	ug	<0.10	0.10	2.0 (1)	1.0	<0.10	0.10	A069589
n-Propylbenzene	ug	<0.010	0.010	0.22	0.010	<0.010	0.010	A069589
p-Isopropyltoluene	ug	<0.010	0.010	0.28	0.010	<0.010	0.010	A069589
sec-Butylbenzene	ug	<0.010	0.010	0.022	0.010	<0.010	0.010	A069589
Styrene	ug	<0.20	0.20	<0.20	0.20	<0.20	0.20	A069589
tert-Butylbenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
Tetrachloroethene	ug	<0.010	0.010	0.017	0.010	<0.010	0.010	A069589
Toluene	ug	<0.20	0.20	<0.20	0.20	<0.20	0.20	A069589
trans-1,2-dichloroethene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	A069589
trans-1,3-dichloropropene	ug	<0.0020	0.0020	0.0051 (2)	0.0020	<0.0020	0.0020	A069589
Trichloroethene	ug	0.0061	0.0010	0.013	0.0010	0.0036	0.0010	A069589
Trichlorofluoromethane	ug	<0.10	0.10	<0.10	0.10	<0.10	0.10	A069589
Vinyl chloride	ug	<0.0010	0.0010	0.035	0.0010	<0.0010	0.0010	A069589
m & p-Xylene	ug	<0.010	0.010	1.9	0.010	<0.010	0.010	A069589
o-Xylene	ug	<0.010	0.010	0.77	0.010	<0.010	0.010	A069589
Xylenes (Total)	ug	<0.010	0.010	2.7	0.010	<0.010	0.010	A069589
RDL = Reportable Detection Limit								
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.								
(2) Tentatively identified result and may be potentially biased high due to matrix interference.								



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BV Labs Job #: C080056
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.7°C
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Results relate only to the items tested.

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BV Labs Job #: C080056

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934-2

Sampler Initials: RFM

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A069589	1,1,1,2-tetrachloroethane	2020/10/28	90	60 - 140	<0.0015	ug		
A069589	1,1,1-trichloroethane	2020/10/28	108	60 - 140	<0.20	ug		
A069589	1,1,2,2-tetrachloroethane	2020/10/28	80	60 - 140	<0.010	ug		
A069589	1,1,2-trichloroethane	2020/10/28	94	60 - 140	<0.00050	ug		
A069589	1,1-dichloroethane	2020/10/28	120	60 - 140	<0.010	ug		
A069589	1,1-dichloroethene	2020/10/28	97	60 - 140	<0.010	ug		
A069589	1,2,3-trichlorobenzene	2020/10/28	70	60 - 140	<0.010	ug		
A069589	1,2,3-trichloropropane	2020/10/28	99	60 - 140	<0.00050	ug		
A069589	1,2,3-Trimethylbenzene	2020/10/28	93	60 - 140	<0.010	ug		
A069589	1,2,4-trichlorobenzene	2020/10/28	71	60 - 140	<0.0050	ug		
A069589	1,2,4-trimethylbenzene	2020/10/28	89	60 - 140	<0.0020	ug		
A069589	1,2-dibromo-3-chloropropane	2020/10/28	84	60 - 140	<0.0010	ug		
A069589	1,2-dibromoethane	2020/10/30	98	60 - 140	<0.00050	ug	NC	40
A069589	1,2-dichlorobenzene	2020/10/28	92	60 - 140	<0.010	ug		
A069589	1,2-dichloroethane	2020/10/30	115	60 - 140	<0.0020	ug	NC	40
A069589	1,2-dichloropropane	2020/10/28	109	50 - 150	<0.0020	ug		
A069589	1,3,5-trimethylbenzene	2020/10/28	93	60 - 140	<0.0020	ug		
A069589	1,3-Butadiene	2020/10/28	126	50 - 150	<0.0020	ug		
A069589	1,3-dichlorobenzene	2020/10/28	87	60 - 140	<0.010	ug		
A069589	1,3-dichloropropane	2020/10/28	110	50 - 150	<0.0015	ug		
A069589	1,4-dichlorobenzene	2020/10/28	79	60 - 140	<0.010	ug		
A069589	2-Butanone (MEK)	2020/10/28	97	60 - 140	<0.50	ug		
A069589	2-chlorophenol	2020/10/28	75	N/A	<0.010	ug		
A069589	2-chlorotoluene	2020/10/28	95	60 - 140	<0.0020	ug		
A069589	2-Hexanone	2020/10/28	98	60 - 140	<0.010	ug		
A069589	4-chlorotoluene	2020/10/28	94	60 - 140	<0.010	ug		
A069589	Acetone	2020/10/28	121	60 - 140	<0.020	ug		
A069589	Benzene	2020/10/30	104	60 - 140	<0.0015	ug	NC	40
A069589	Bromobenzene	2020/10/28	89	60 - 140	<0.0020	ug		
A069589	Bromodichloromethane	2020/10/28	110	60 - 140	<0.0020	ug		
A069589	Bromoform	2020/10/28	76	60 - 140	<0.0020	ug		
A069589	Bromomethane	2020/10/28	125	50 - 150	<0.0050	ug		



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BV Labs Job #: C080056

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934-2

Sampler Initials: RFM

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A069589	C6-C13 Hydrocarbons (VHv)	2020/10/28	104	60 - 140	<0.50	ug		
A069589	Carbon tetrachloride	2020/10/28	112	60 - 140	<0.0010	ug		
A069589	Chlorobenzene	2020/10/28	95	60 - 140	<0.0020	ug		
A069589	Chloroethane	2020/10/28	120	50 - 150	<0.50	ug		
A069589	Chloroform	2020/10/28	119	60 - 140	<0.0020	ug		
A069589	Chloromethane	2020/10/28	105	50 - 150	<0.020	ug		
A069589	cis-1,2-dichloroethene	2020/10/28	85	60 - 140	<0.010	ug		
A069589	cis-1,3-dichloropropene	2020/10/28	91	50 - 150	<0.0020	ug		
A069589	Dibromochloromethane	2020/10/28	84	60 - 140	<0.0020	ug		
A069589	Dibromomethane	2020/10/28	87	60 - 140	<0.0040	ug		
A069589	Dichlorodifluoromethane	2020/10/28	106	50 - 150	<0.020	ug		
A069589	Dichloromethane	2020/10/28	113	50 - 150	<0.050	ug		
A069589	Ethyl acetate	2020/10/28	80	N/A	<0.010	ug		
A069589	Ethylbenzene	2020/10/30	92	60 - 140	<0.20	ug	NC	40
A069589	Hexachloro-1,3-butadiene	2020/10/28	84	60 - 140	<0.0010	ug		
A069589	Isopropylbenzene	2020/10/28	97	60 - 140	<0.0020	ug		
A069589	m & p-Xylene	2020/10/30	95	60 - 140	<0.010	ug	NC	40
A069589	Methyl Isobutyl Ketone	2020/10/28	115	N/A	<0.20	ug		
A069589	Methylcyclohexane	2020/10/28	115	60 - 140	<0.20	ug		
A069589	Methyl-tert-butylether (MTBE)	2020/10/30	88	50 - 150	<0.20	ug	NC	40
A069589	Naphthalene	2020/10/30	80	60 - 140	<0.0030	ug	NC	40
A069589	n-Butylbenzene	2020/10/28	103	60 - 140	<0.010	ug		
A069589	n-Decane	2020/10/28	89	60 - 140	<0.10	ug		
A069589	n-Hexane	2020/10/30	116	60 - 140	<0.10	ug	NC	40
A069589	n-Propylbenzene	2020/10/28	96	60 - 140	<0.010	ug		
A069589	o-Xylene	2020/10/30	103	60 - 140	<0.010	ug	NC	40
A069589	p-Isopropyltoluene	2020/10/28	83	60 - 140	<0.010	ug		
A069589	sec-Butylbenzene	2020/10/28	95	60 - 140	<0.010	ug		
A069589	Styrene	2020/10/30	126	60 - 140	<0.20	ug	NC	40
A069589	tert-Butylbenzene	2020/10/28	95	60 - 140	<0.010	ug		
A069589	Tetrachloroethene	2020/10/28	106	60 - 140	<0.016 (1)	ug		
A069589	Toluene	2020/10/30	101	60 - 140	<0.20	ug	NC	40



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BV Labs Job #: C080056

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934-2

Sampler Initials: RFM

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A069589	trans-1,2-dichloroethene	2020/10/28	98	60 - 140	<0.010	ug		
A069589	trans-1,3-dichloropropene	2020/10/28	99	50 - 150	<0.0020	ug		
A069589	Trichloroethene	2020/10/28	89	60 - 140	<0.0010	ug		
A069589	Trichlorofluoromethane	2020/10/28	129	50 - 150	<0.10	ug		
A069589	Vinyl chloride	2020/10/28	125	50 - 150	<0.0010	ug		
A069589	Xylenes (Total)	2020/10/30			<0.010	ug	NC	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Detection limit raised due to background artifacts.



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BV Labs Job #: C080056
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934-2
Sampler Initials: RFM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Bureau Veritas Laboratories
4000 Canada Way, Burnaby, British Columbia Canada V5G 1K3 Tel: (604) 734 7276 Toll-free 800-563-6266 Fax: (604) 731 2386 www.bvlabs.com

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INVOICE TO:		Report Information		Project Information	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097
Contact Name	Ross McCarter	Contact Name		P.O. #	
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	15434-2
Phone	(604) 430-0671	Phone		Project Name	
Fax	(604) 430-0672	Fax		Site #	
Email	mcarter@keystoneenv.com	Email		Sampled By	PLM

Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:	
☒ CSR														Please provide advance notice for rush projects	
☒ CCME														Regular (Standard) TAT:	
☐ BC Water Quality														(will be applied if Rush TAT is not specified: Standard TAT = 5-7 Working days for most tests.	
☐ Other														Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
														Job Specific Rush TAT (if applies to entire submission)	
														1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐	
														Rush Confirmation Number: ☐ (call lab for #)	

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS																	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	PUMP FLOW RATE (L/MINUTE)	PUMP RUN TIME (MINUTES)	PUMP NUMBER	SV - CSAP Gas & Diesel	SV - CSAP Diesel	SV - BTEX/PH	SV - CSAP Drying/Leaching	SV - CSAP Drying/Leaching & Petroleum	SV - FULL VOC/PAH/Naphthalene	POTENTIAL HIGH CONC. (Y/N)	# of Bottles	Comments
1	SV20-5	20/10/27	0800	air		0.2	20	4773						X		1	A01750
2	SV20-7							3250									AD1518
3	SV20-9							3210									A01091
4	SV20-10							4773									G015083
5	SV20-12							4773									G0153361
6	SV20-13							3210									A01733
7	SV20-15							4773									G0153338
8	SV20-A							3250									G0153396
9																	
10																	

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
[Signature]		20/10/29	1435	[Signature]		20/10/29	1450	14	☒	14.17.54	☐ Yes ☒ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Bureau Veritas Canada (2019) Inc.



Your Project #: 15934
Your C.O.C. #: c#623319-01-01

Attention: Ross McCarter

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2020/11/05
Report #: R2952080
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C080058

Received: 2020/10/29, 14:50

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
F2-F4 in Water when PAH required	8	2020/11/03	2020/11/04	BBY8SOP-00030	CCME PHC-CWS m
F2-F4 in Water when PAH required	1	2020/11/03	2020/11/05	BBY8SOP-00030	CCME PHC-CWS m
Glycols in Water by GC/FID (1)	8	N/A	2020/11/04	CAL SOP-00093	BCMOE Glycols 09/17
Hardness (calculated as CaCO ₃)	9	N/A	2020/11/03	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV	9	2020/11/02	2020/11/02	AB SOP-00084	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	9	2020/11/03	2020/11/03	BBY8SOP-00029	BCMOE BCLM Sep2017 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	9	N/A	2020/11/03	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved)	9	N/A	2020/11/03	BBY7SOP-00002	EPA 6020b R2 m
PAH in Water by GC/MS (SIM)	9	2020/11/03	2020/11/03	BBY8SOP-00021	BCMOE BCLM Jul2017m
Total LMW, HMW, Total PAH Calc (2)	9	N/A	2020/11/04	BBY WI-00033	Auto Calc
Filter and HNO ₃ Preserve for Metals	9	N/A	2020/10/30	BBY7 WI-00004	SM 23 3030B m
EPH less PAH in Water by GC/FID (3)	9	N/A	2020/11/04	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS	9	N/A	2020/11/02	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul2017 m
Volatile HC-BTEX (4)	9	N/A	2020/11/03	BBY WI-00033	Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope



Your Project #: 15934
Your C.O.C. #: c#623319-01-01

Attention: Ross McCarter

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CANADA V5G 4G3

Report Date: 2020/11/05
Report #: R2952080
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C080058

Received: 2020/10/29, 14:50

dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by BV Labs Calgary Environmental

(2) Total PAHs in Water include: Quinoline, Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Acridine, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b&j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, and Benzo(g,h,i)perylene.

(3) LEPH = EPH (C10 to C19) - (Acenaphthene + Acridine + Anthracene + Fluorene + Naphthalene + Phenanthrene)

HEPH = EPH (C19 to C32) - (Benzo(a)anthracene + Benzo(a)pyrene + Fluoranthene + Pyrene)

(4) VPH = VH - (Benzene + Toluene + Ethylbenzene + m & p-Xylene + o-Xylene + Styrene)

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gail Pedersen, Key Account Specialist

Email: Gail.Pedersen@bvlabs.com

Phone# (604) 734 7276

=====

This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5541	
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-13	QC Batch
Calculated Parameters									
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE

BV Labs ID		YT5542	YT5543	
Sampling Date		2020/10/28 12:00	2020/10/28 12:00	
	UNITS	MW20-15	MW20-A	QC Batch
Calculated Parameters				
Filter and HNO3 Preservation	N/A	FIELD	FIELD	ONSITE



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VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5541		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-13	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	A076118
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A076118
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A076118
Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	87	82	86	88	91	88	90		A076118
RDL = Reportable Detection Limit										

BV Labs ID		YT5542	YT5543		
Sampling Date		2020/10/28 12:00	2020/10/28 12:00		
	UNITS	MW20-15	MW20-A	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.15	<0.15	0.15	A076118
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	A076118
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	A076118
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	82	88		A076118
RDL = Reportable Detection Limit					



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VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

GLYCOLS BY GC-FID (WATER)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540	YT5542		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/28 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	MW20-15	RDL	QC Batch
Glycols										
Ethylene Glycol	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.0	A076803
Diethylene Glycol	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A076803
Triethylene Glycol	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A076803
Propylene Glycol	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	A076803
Surrogate Recovery (%)										
Methyl Sulfone (sur.)	%	84	86	89	88	88	88	89		A076803
RDL = Reportable Detection Limit										

BV Labs ID		YT5543		
Sampling Date		2020/10/28 12:00		
	UNITS	MW20-A	RDL	QC Batch
Glycols				
Ethylene Glycol	mg/L	<3.0	3.0	A076803
Diethylene Glycol	mg/L	<5.0	5.0	A076803
Triethylene Glycol	mg/L	<5.0	5.0	A076803
Propylene Glycol	mg/L	<5.0	5.0	A076803
Surrogate Recovery (%)				
Methyl Sulfone (sur.)	%	89		A076803
RDL = Reportable Detection Limit				



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VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	RDL	QC Batch
Calculated Parameters									
Low Molecular Weight PAH's	ug/L	<0.10	0.62	0.39	0.92	0.11	<0.10	0.10	A072452
High Molecular Weight PAH's	ug/L	<0.050	0.34	0.12	0.25	<0.050	<0.050	0.050	A072452
Total PAH	ug/L	<0.10	0.96	0.51	1.2	0.11	<0.10	0.10	A072452
Polycyclic Aromatics									
Quinoline	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A076097
Naphthalene	ug/L	<0.10	0.18	0.11	0.67	0.11	<0.10	0.10	A076097
1-Methylnaphthalene	ug/L	<0.050	0.077	<0.050	0.087	<0.050	<0.050	0.050	A076097
2-Methylnaphthalene	ug/L	<0.10	0.12	<0.10	0.11	<0.10	<0.10	0.10	A076097
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A076097
Acenaphthene	ug/L	<0.050	0.072	0.12	<0.050	<0.050	<0.050	0.050	A076097
Fluorene	ug/L	<0.050	0.054	0.066	<0.050	<0.050	<0.050	0.050	A076097
Phenanthrene	ug/L	<0.050	0.11	0.075	0.055	<0.050	<0.050	0.050	A076097
Anthracene	ug/L	<0.010	0.019	0.015	0.013	<0.010	<0.010	0.010	A076097
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A076097
Fluoranthene	ug/L	<0.020	0.073	0.051	0.050	<0.020	<0.020	0.020	A076097
Pyrene	ug/L	<0.020	0.088	0.045	0.061	<0.020	<0.020	0.020	A076097
Benzo(a)anthracene	ug/L	<0.010	0.037	0.013	0.028	<0.010	<0.010	0.010	A076097
Chrysene	ug/L	<0.020	0.047	<0.020	0.036	<0.020	<0.020	0.020	A076097
Benzo(b&j)fluoranthene	ug/L	<0.030	0.033	<0.030	0.032	<0.030	<0.030	0.030	A076097
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A076097
Benzo(a)pyrene	ug/L	0.0056	0.055	0.014	0.036	<0.0050	<0.0050	0.0050	A076097
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A076097
Dibenz(a,h)anthracene	ug/L	<0.0030	0.0085	<0.0030	0.0066	<0.0030	<0.0030	0.0030	A076097
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A076097
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A072518
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A072518
Ext. Pet. Hydrocarbon									
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A076116
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A076116
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	94	90	95	96	95	98		A076116
D10-ANTHRACENE (sur.)	%	94	95	95	97	97	94		A076097
RDL = Reportable Detection Limit									



BUREAU
VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	93	93	92	96	95	92		A076097
D8-NAPHTHALENE (sur.)	%	86	87	84	87	85	84		A076097
TERPHENYL-D14 (sur.)	%	86	86	87	95	90	89		A076097
RDL = Reportable Detection Limit									



BUREAU
VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

BV Labs ID		YT5541	YT5542			YT5542			YT5543		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00			2020/10/28 12:00			2020/10/28 12:00		
	UNITS	MW20-13	MW20-15	RDL	QC Batch	MW20-15 Lab-Dup	RDL	QC Batch	MW20-A	RDL	QC Batch
Calculated Parameters											
Low Molecular Weight PAH's	ug/L	0.12	0.30	0.10	A072452				0.30	0.10	A072452
High Molecular Weight PAH's	ug/L	<0.050	<0.050	0.050	A072452				<0.050	0.050	A072452
Total PAH	ug/L	0.15	0.30	0.10	A072452				0.30	0.10	A072452
Polycyclic Aromatics											
Quinoline	ug/L	<0.020	<0.020	0.020	A076097	<0.020	0.020	A076097	<0.020	0.020	A076097
Naphthalene	ug/L	0.12	0.30	0.10	A076097	0.29	0.10	A076097	0.30	0.10	A076097
1-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	A076097	<0.10	0.10	A076097	<0.10	0.10	A076097
Acenaphthylene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Acenaphthene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Fluorene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Phenanthrene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Anthracene	ug/L	<0.010	<0.010	0.010	A076097	<0.010	0.010	A076097	<0.010	0.010	A076097
Acridine	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Fluoranthene	ug/L	<0.020	<0.020	0.020	A076097	<0.020	0.020	A076097	<0.020	0.020	A076097
Pyrene	ug/L	0.021	<0.020	0.020	A076097	<0.020	0.020	A076097	<0.020	0.020	A076097
Benzo(a)anthracene	ug/L	<0.010	<0.010	0.010	A076097	<0.010	0.010	A076097	<0.010	0.010	A076097
Chrysene	ug/L	<0.020	<0.020	0.020	A076097	<0.020	0.020	A076097	<0.020	0.020	A076097
Benzo(b&j)fluoranthene	ug/L	<0.030	<0.030	0.030	A076097	<0.030	0.030	A076097	<0.030	0.030	A076097
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Benzo(a)pyrene	ug/L	0.0094	<0.0050	0.0050	A076097	<0.0050	0.0050	A076097	<0.0050	0.0050	A076097
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Dibenz(a,h)anthracene	ug/L	<0.0030	<0.0030	0.0030	A076097	<0.0030	0.0030	A076097	<0.0030	0.0030	A076097
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.050	A076097	<0.050	0.050	A076097	<0.050	0.050	A076097
Calculated Parameters											
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	0.20	A072518				<0.20	0.20	A072518
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	0.20	A072518				<0.20	0.20	A072518
Ext. Pet. Hydrocarbon											
EPH (C10-C19)	mg/L	<0.20	<0.20	0.20	A076116				<0.20	0.20	A076116
EPH (C19-C32)	mg/L	<0.20	<0.20	0.20	A076116				<0.20	0.20	A076116
Surrogate Recovery (%)											
O-TERPHENYL (sur.)	%	98	93		A076116				95		A076116
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate											



**BUREAU
VERITAS**

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

BV Labs ID		YT5541	YT5542			YT5542			YT5543		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00			2020/10/28 12:00			2020/10/28 12:00		
	UNITS	MW20-13	MW20-15	RDL	QC Batch	MW20-15 Lab-Dup	RDL	QC Batch	MW20-A	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	95	91		A076097	96		A076097	94		A076097
D8-ACENAPHTHYLENE (sur.)	%	92	94		A076097	98		A076097	95		A076097
D8-NAPHTHALENE (sur.)	%	85	86		A076097	90		A076097	87		A076097
TERPHENYL-D14 (sur.)	%	95	86		A076097	89		A076097	89		A076097

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



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BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME DISSOLVED METALS IN WATER (WATER)

BV Labs ID		YT5535		YT5536			YT5537		
Sampling Date		2020/10/29 12:00		2020/10/28 12:00			2020/10/29 12:00		
	UNITS	MW20-5	RDL	MW20-7	RDL	QC Batch	MW20-9	RDL	QC Batch
Calculated Parameters									
Dissolved Hardness (CaCO ₃)	mg/L	554	0.50	390	0.50	A072024	698	0.50	A072024
Elements									
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	<0.0019	0.0019	A074781	<0.0019 (1)	0.0019	A074820
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	34.7	6.0	39.1	3.0	A073754	34.6	6.0	A073754
Dissolved Antimony (Sb)	ug/L	1.0	1.0	<0.50	0.50	A073754	11.0	1.0	A073754
Dissolved Arsenic (As)	ug/L	7.28	0.20	4.35	0.10	A073754	13.0	0.20	A073754
Dissolved Barium (Ba)	ug/L	169	2.0	112	1.0	A073754	244	2.0	A073754
Dissolved Beryllium (Be)	ug/L	<0.20	0.20	<0.10	0.10	A073754	<0.20	0.20	A073754
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<1.0	1.0	A073754	<2.0	2.0	A073754
Dissolved Boron (B)	ug/L	284	100	54	50	A073754	237	100	A073754
Dissolved Cadmium (Cd)	ug/L	<0.020	0.020	<0.010	0.010	A073754	<0.020	0.020	A073754
Dissolved Chromium (Cr)	ug/L	<2.0	2.0	<1.0	1.0	A073754	<2.0	2.0	A073754
Dissolved Cobalt (Co)	ug/L	7.91	0.40	4.20	0.20	A073754	3.47	0.40	A073754
Dissolved Copper (Cu)	ug/L	<0.40	0.40	<0.20	0.20	A073754	<0.40	0.40	A073754
Dissolved Iron (Fe)	ug/L	3140	10	13000	5.0	A073754	18100	10	A073754
Dissolved Lead (Pb)	ug/L	<0.40	0.40	<0.20	0.20	A073754	<0.40	0.40	A073754
Dissolved Lithium (Li)	ug/L	10.2	4.0	<2.0	2.0	A073754	<4.0	4.0	A073754
Dissolved Manganese (Mn)	ug/L	2900	2.0	3690	1.0	A073754	3590	2.0	A073754
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	<1.0	1.0	A073754	7.4	2.0	A073754
Dissolved Nickel (Ni)	ug/L	10.8	2.0	3.5	1.0	A073754	4.5	2.0	A073754
Dissolved Selenium (Se)	ug/L	0.84	0.20	0.33	0.10	A073754	0.71	0.20	A073754
Dissolved Silicon (Si)	ug/L	22300	200	15500	100	A073754	18300	200	A073754
Dissolved Silver (Ag)	ug/L	<0.040	0.040	<0.020	0.020	A073754	<0.040	0.040	A073754
Dissolved Strontium (Sr)	ug/L	781	2.0	591	1.0	A073754	1320	2.0	A073754
Dissolved Thallium (Tl)	ug/L	0.036	0.020	0.012	0.010	A073754	<0.020	0.020	A073754
Dissolved Tin (Sn)	ug/L	<10	10	<5.0	5.0	A073754	<10	10	A073754
Dissolved Titanium (Ti)	ug/L	<10	10	<5.0	5.0	A073754	<10	10	A073754
Dissolved Uranium (U)	ug/L	2.70	0.20	0.52	0.10	A073754	1.71	0.20	A073754
Dissolved Vanadium (V)	ug/L	<10	10	<5.0	5.0	A073754	<10	10	A073754
Dissolved Zinc (Zn)	ug/L	<10	10	8.8	5.0	A073754	<10	10	A073754
Dissolved Zirconium (Zr)	ug/L	0.56	0.20	0.40	0.10	A073754	3.31	0.20	A073754
RDL = Reportable Detection Limit									
(1) Matrix Spike exceeds acceptance limits - Probable matrix interference.									



CCME DISSOLVED METALS IN WATER (WATER)

BV Labs ID		YT5535		YT5536			YT5537		
Sampling Date		2020/10/29 12:00		2020/10/28 12:00			2020/10/29 12:00		
	UNITS	MW20-5	RDL	MW20-7	RDL	QC Batch	MW20-9	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	178	0.10	131	0.050	A072343	242	0.10	A072343
Dissolved Magnesium (Mg)	mg/L	26.7	0.10	15.7	0.050	A072343	22.9	0.10	A072343
Dissolved Potassium (K)	mg/L	16.2	0.10	6.10	0.050	A072343	10.9	0.10	A072343
Dissolved Sulphur (S)	mg/L	13.9	6.0	9.0	3.0	A072343	15.4	6.0	A072343
RDL = Reportable Detection Limit									



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BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME DISSOLVED METALS IN WATER (WATER)

BV Labs ID		YT5537			YT5538		YT5539		YT5540		
Sampling Date		2020/10/29 12:00			2020/10/29 12:00		2020/10/29 12:00		2020/10/29 12:00		
	UNITS	MW20-9 Lab-Dup	RDL	QC Batch	MW20-10	RDL	MW20-11	RDL	MW20-12	RDL	QC Batch

Calculated Parameters

Dissolved Hardness (CaCO ₃)	mg/L				484	0.50	279	0.50	238	0.50	A072024
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Elements

Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	A074820	<0.0019	0.0019	0.0022	0.0019	<0.0019	0.0019	A074820
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Dissolved Metals by ICPMS

Dissolved Aluminum (Al)	ug/L				78.6	6.0	102	3.0	23	15	A073754
Dissolved Antimony (Sb)	ug/L				2.1	1.0	45.0	0.50	<2.5	2.5	A073754
Dissolved Arsenic (As)	ug/L				6.74	0.20	20.2	0.10	2.56	0.50	A073754
Dissolved Barium (Ba)	ug/L				107	2.0	158	1.0	128	5.0	A073754
Dissolved Beryllium (Be)	ug/L				<0.20	0.20	<0.10	0.10	<0.50	0.50	A073754
Dissolved Bismuth (Bi)	ug/L				<2.0	2.0	<1.0	1.0	<5.0	5.0	A073754
Dissolved Boron (B)	ug/L				<100	100	<50	50	<250	250	A073754
Dissolved Cadmium (Cd)	ug/L				0.076	0.020	<0.010	0.010	<0.050	0.050	A073754
Dissolved Chromium (Cr)	ug/L				3.3	2.0	1.2	1.0	<5.0	5.0	A073754
Dissolved Cobalt (Co)	ug/L				14.3	0.40	2.07	0.20	3.9	1.0	A073754
Dissolved Copper (Cu)	ug/L				0.87	0.40	1.12	0.20	<1.0	1.0	A073754
Dissolved Iron (Fe)	ug/L				16600	10	13100	5.0	19400	25	A073754
Dissolved Lead (Pb)	ug/L				<0.40	0.40	0.71	0.20	<1.0	1.0	A073754
Dissolved Lithium (Li)	ug/L				<4.0	4.0	3.7	2.0	<10	10	A073754
Dissolved Manganese (Mn)	ug/L				3990	2.0	500	1.0	1270	5.0	A073754
Dissolved Molybdenum (Mo)	ug/L				2.4	2.0	105	1.0	<5.0	5.0	A073754
Dissolved Nickel (Ni)	ug/L				15.9	2.0	3.9	1.0	<5.0	5.0	A073754
Dissolved Selenium (Se)	ug/L				0.78	0.20	0.88	0.10	<0.50	0.50	A073754
Dissolved Silicon (Si)	ug/L				25400	200	17300	100	25600	500	A073754
Dissolved Silver (Ag)	ug/L				<0.040	0.040	<0.020	0.020	<0.10	0.10	A073754
Dissolved Strontium (Sr)	ug/L				581	2.0	514	1.0	267	5.0	A073754
Dissolved Thallium (Tl)	ug/L				0.064	0.020	<0.010	0.010	<0.050	0.050	A073754
Dissolved Tin (Sn)	ug/L				<10	10	<5.0	5.0	<25	25	A073754
Dissolved Titanium (Ti)	ug/L				<10	10	<5.0	5.0	<25	25	A073754
Dissolved Uranium (U)	ug/L				1.61	0.20	0.46	0.10	<0.50	0.50	A073754
Dissolved Vanadium (V)	ug/L				<10	10	<5.0	5.0	<25	25	A073754
Dissolved Zinc (Zn)	ug/L				31	10	5.8	5.0	<25	25	A073754
Dissolved Zirconium (Zr)	ug/L				0.86	0.20	0.69	0.10	<0.50	0.50	A073754

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



CCME DISSOLVED METALS IN WATER (WATER)

BV Labs ID		YT5537			YT5538		YT5539		YT5540		
Sampling Date		2020/10/29 12:00			2020/10/29 12:00		2020/10/29 12:00		2020/10/29 12:00		
	UNITS	MW20-9 Lab-Dup	RDL	QC Batch	MW20-10	RDL	MW20-11	RDL	MW20-12	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L				155	0.10	103	0.050	62.3	0.25	A072343
Dissolved Magnesium (Mg)	mg/L				23.6	0.10	5.44	0.050	20.1	0.25	A072343
Dissolved Potassium (K)	mg/L				15.2	0.10	12.5	0.050	1.62	0.25	A072343
Dissolved Sulphur (S)	mg/L				8.6	6.0	18.6	3.0	<15	15	A072343

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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VERITASBV Labs Job #: C080058
Report Date: 2020/11/05KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM**CCME DISSOLVED METALS IN WATER (WATER)**

BV Labs ID		YT5541		YT5542	YT5543		
Sampling Date		2020/10/29 12:00		2020/10/28 12:00	2020/10/28 12:00		
	UNITS	MW20-13	RDL	MW20-15	MW20-A	RDL	QC Batch
Calculated Parameters							
Dissolved Hardness (CaCO ₃)	mg/L	217	0.50	1010	1040	0.50	A072024
Elements							
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	0.0036	0.0038	0.0019	A074820
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	95	15	41.1	39.4	3.0	A073754
Dissolved Antimony (Sb)	ug/L	<2.5	2.5	0.77	0.75	0.50	A073754
Dissolved Arsenic (As)	ug/L	3.41	0.50	3.10	3.04	0.10	A073754
Dissolved Barium (Ba)	ug/L	71.3	5.0	266	274	1.0	A073754
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	<0.10	<0.10	0.10	A073754
Dissolved Bismuth (Bi)	ug/L	<5.0	5.0	<1.0	<1.0	1.0	A073754
Dissolved Boron (B)	ug/L	<250	250	70	70	50	A073754
Dissolved Cadmium (Cd)	ug/L	<0.050	0.050	0.037	0.036	0.010	A073754
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	1.1	1.0	1.0	A073754
Dissolved Cobalt (Co)	ug/L	4.6	1.0	16.6	16.3	0.20	A073754
Dissolved Copper (Cu)	ug/L	2.1	1.0	1.86	1.74	0.20	A073754
Dissolved Iron (Fe)	ug/L	3150	25	8530	8700	5.0	A073754
Dissolved Lead (Pb)	ug/L	<1.0	1.0	<0.20	<0.20	0.20	A073754
Dissolved Lithium (Li)	ug/L	<10	10	12.3	12.4	2.0	A073754
Dissolved Manganese (Mn)	ug/L	812	5.0	5010	4950	1.0	A073754
Dissolved Molybdenum (Mo)	ug/L	<5.0	5.0	1.5	1.4	1.0	A073754
Dissolved Nickel (Ni)	ug/L	14.3	5.0	30.4	29.7	1.0	A073754
Dissolved Selenium (Se)	ug/L	<0.50	0.50	2.33	2.33	0.10	A073754
Dissolved Silicon (Si)	ug/L	25700	500	14800	15200	100	A073754
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<0.020	<0.020	0.020	A073754
Dissolved Strontium (Sr)	ug/L	205	5.0	1420	1400	1.0	A073754
Dissolved Thallium (Tl)	ug/L	0.067	0.050	0.147	0.145	0.010	A073754
Dissolved Tin (Sn)	ug/L	<25	25	<5.0	<5.0	5.0	A073754
Dissolved Titanium (Ti)	ug/L	<25	25	<5.0	<5.0	5.0	A073754
Dissolved Uranium (U)	ug/L	<0.50	0.50	8.75	8.68	0.10	A073754
Dissolved Vanadium (V)	ug/L	<25	25	<5.0	<5.0	5.0	A073754
Dissolved Zinc (Zn)	ug/L	<25	25	21.8	20.5	5.0	A073754
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	3.20	3.13	0.10	A073754
Dissolved Calcium (Ca)	mg/L	72.6	0.25	319	332	0.050	A072343
RDL = Reportable Detection Limit							



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BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME DISSOLVED METALS IN WATER (WATER)

BV Labs ID		YT5541		YT5542	YT5543		
Sampling Date		2020/10/29 12:00		2020/10/28 12:00	2020/10/28 12:00		
	UNITS	MW20-13	RDL	MW20-15	MW20-A	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	8.64	0.25	52.6	51.7	0.050	A072343
Dissolved Potassium (K)	mg/L	16.9	0.25	16.8	16.3	0.050	A072343
Dissolved Sulphur (S)	mg/L	<15	15	40.0	38.1	3.0	A072343
RDL = Reportable Detection Limit							



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BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME&CSR VOC/F1/VPH + KETONES IN WATER (WATER)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	RDL	QC Batch
Calculated Parameters									
F1 (C06-C10) - BTEX	ug/L	<300	<300	<300	<300	<300	<300	300	A072519
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	<300	<300	<300	<300	300	A072519
Volatiles									
F1 (C6-C10)	ug/L	<300	<300	<300	<300	<300	<300	300	A074128
VH C6-C10	ug/L	<300	<300	<300	<300	<300	<300	300	A074128
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,2,3-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
1,2,4-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
1,2,4-trimethylbenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A074128
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,3,5-trimethylbenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
2-Butanone (MEK)	ug/L	<50	<50	<50	<50	<50	<50	50	A074128
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	<10	<10	<10	<10	10	A074128
Acetone	ug/L	<15	<15	<15	34	80	<15	15	A074128
Benzene	ug/L	0.49	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A074128
Bromobenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Bromomethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
RDL = Reportable Detection Limit									

BUREAU
VERITASBV Labs Job #: C080058
Report Date: 2020/11/05KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME&CSR VOC/F1/VPH + KETONES IN WATER (WATER)

BV Labs ID		YT5535	YT5536	YT5537	YT5538	YT5539	YT5540		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00	2020/10/29 12:00		
	UNITS	MW20-5	MW20-7	MW20-9	MW20-10	MW20-11	MW20-12	RDL	QC Batch
Chloroethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Chloroform	ug/L	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	1.0	A074128
Chloromethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
cis-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
Dichloromethane	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A074128
Hexachlorobutadiene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Isopropylbenzene	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
Methylcyclohexane	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	A074128
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	A074128
n-Decane	ug/L	<20	<20	<20	<20	<20	<20	20	A074128
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Tetrachloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Toluene	ug/L	0.49	<0.40	<0.40	0.59	0.46	<0.40	0.40	A074128
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	A074128
Trichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	A074128
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A074128
m & p-Xylene	ug/L	0.62	<0.40	<0.40	0.42	<0.40	<0.40	0.40	A074128
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A074128
Xylenes (Total)	ug/L	0.62	<0.40	<0.40	0.42	<0.40	<0.40	0.40	A074128
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	102	103	103	102	102	104		A074128
4-Bromofluorobenzene (sur.)	%	80	79	78	79	79	78		A074128
D4-1,2-Dichloroethane (sur.)	%	101	102	103	105	99	100		A074128
RDL = Reportable Detection Limit									



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VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME&CSR VOC/F1/VPH + KETONES IN WATER (WATER)

BV Labs ID		YT5541	YT5542	YT5543		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/28 12:00		
	UNITS	MW20-13	MW20-15	MW20-A	RDL	QC Batch
Calculated Parameters						
F1 (C06-C10) - BTEX	ug/L	<300	<300	<300	300	A072519
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	<300	300	A072519
Volatiles						
F1 (C6-C10)	ug/L	<300	<300	<300	300	A074128
VH C6-C10	ug/L	<300	<300	<300	300	A074128
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	2.0	A074128
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,2,3-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
1,2,4-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
1,2,4-trimethylbenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	0.20	A074128
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,3,5-trimethylbenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
2-Butanone (MEK)	ug/L	<50	<50	<50	50	A074128
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	<10	10	A074128
Acetone	ug/L	15	25	27	15	A074128
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	A074128
Bromobenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Bromoform	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Bromomethane	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	1.0	A074128
RDL = Reportable Detection Limit						



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BV Labs Job #: C080058
Report Date: 2020/11/05

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

CCME&CSR VOC/F1/VPH + KETONES IN WATER (WATER)

BV Labs ID		YT5541	YT5542	YT5543		
Sampling Date		2020/10/29 12:00	2020/10/28 12:00	2020/10/28 12:00		
	UNITS	MW20-13	MW20-15	MW20-A	RDL	QC Batch
Chloroethane	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Chloroform	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Chloromethane	ug/L	<1.0	<1.0	<1.0	1.0	A074128
cis-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	A074128
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	2.0	A074128
Dichloromethane	ug/L	<2.0	<2.0	<2.0	2.0	A074128
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	0.40	A074128
Hexachlorobutadiene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Isopropylbenzene	ug/L	<2.0	<2.0	<2.0	2.0	A074128
Methylcyclohexane	ug/L	<2.0	<2.0	<2.0	2.0	A074128
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	4.0	A074128
n-Decane	ug/L	<20	<20	<20	20	A074128
Styrene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Tetrachloroethene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Toluene	ug/L	0.48	0.45	0.47	0.40	A074128
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	A074128
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	A074128
Trichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	A074128
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	4.0	A074128
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	0.50	A074128
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	A074128
o-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	A074128
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	0.40	A074128
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	93	102	102		A074128
4-Bromofluorobenzene (sur.)	%	78	78	79		A074128
D4-1,2-Dichloroethane (sur.)	%	102	100	104		A074128
RDL = Reportable Detection Limit						



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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CCME DISSOLVED METALS IN WATER (WATER) Comments

Sample YT5535 [MW20-5] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.
Sample YT5537 [MW20-9] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.
Sample YT5538 [MW20-10] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.
Sample YT5540 [MW20-12] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.
Sample YT5541 [MW20-13] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

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BV Labs Job #: C080058

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A074128	1,4-Difluorobenzene (sur.)	2020/11/02	98	50 - 140	98	50 - 140	103	%		
A074128	4-Bromofluorobenzene (sur.)	2020/11/02	102	50 - 140	97	50 - 140	76	%		
A074128	D4-1,2-Dichloroethane (sur.)	2020/11/02	95	50 - 140	95	50 - 140	95	%		
A076097	D10-ANTHRACENE (sur.)	2020/11/03	99	50 - 140	100	50 - 140	100	%		
A076097	D8-ACENAPHTHYLENE (sur.)	2020/11/03	98	50 - 140	98	50 - 140	92	%		
A076097	D8-NAPHTHALENE (sur.)	2020/11/03	92	50 - 140	91	50 - 140	84	%		
A076097	TERPHENYL-D14 (sur.)	2020/11/03	95	50 - 140	95	50 - 140	92	%		
A076116	O-TERPHENYL (sur.)	2020/11/03	98	60 - 140	98	60 - 140	94	%		
A076118	O-TERPHENYL (sur.)	2020/11/04	88	50 - 130	92	50 - 130	86	%		
A076803	Methyl Sulfone (sur.)	2020/11/04	94	50 - 140	93	50 - 140	89	%		
A073754	Dissolved Aluminum (Al)	2020/11/03	99	80 - 120	105	80 - 120	<3.0	ug/L	0.82	20
A073754	Dissolved Antimony (Sb)	2020/11/03	102	80 - 120	108	80 - 120	<0.50	ug/L		
A073754	Dissolved Arsenic (As)	2020/11/03	103	80 - 120	103	80 - 120	<0.10	ug/L		
A073754	Dissolved Barium (Ba)	2020/11/03	101	80 - 120	107	80 - 120	<1.0	ug/L		
A073754	Dissolved Beryllium (Be)	2020/11/03	93	80 - 120	102	80 - 120	<0.10	ug/L		
A073754	Dissolved Bismuth (Bi)	2020/11/03	96	80 - 120	105	80 - 120	<1.0	ug/L		
A073754	Dissolved Boron (B)	2020/11/03	90	80 - 120	101	80 - 120	<50	ug/L		
A073754	Dissolved Cadmium (Cd)	2020/11/03	99	80 - 120	106	80 - 120	<0.010	ug/L		
A073754	Dissolved Chromium (Cr)	2020/11/03	94	80 - 120	101	80 - 120	<1.0	ug/L		
A073754	Dissolved Cobalt (Co)	2020/11/03	92	80 - 120	104	80 - 120	<0.20	ug/L		
A073754	Dissolved Copper (Cu)	2020/11/03	88	80 - 120	99	80 - 120	<0.20	ug/L		
A073754	Dissolved Iron (Fe)	2020/11/03	100	80 - 120	106	80 - 120	<5.0	ug/L		
A073754	Dissolved Lead (Pb)	2020/11/03	95	80 - 120	108	80 - 120	<0.20	ug/L		
A073754	Dissolved Lithium (Li)	2020/11/03	112	80 - 120	114	80 - 120	<2.0	ug/L		
A073754	Dissolved Manganese (Mn)	2020/11/03	NC	80 - 120	102	80 - 120	<1.0	ug/L		
A073754	Dissolved Molybdenum (Mo)	2020/11/03	112	80 - 120	108	80 - 120	<1.0	ug/L		
A073754	Dissolved Nickel (Ni)	2020/11/03	92	80 - 120	103	80 - 120	<1.0	ug/L		
A073754	Dissolved Selenium (Se)	2020/11/03	108	80 - 120	104	80 - 120	<0.10	ug/L		
A073754	Dissolved Silicon (Si)	2020/11/03	97	80 - 120	101	80 - 120	<100	ug/L		
A073754	Dissolved Silver (Ag)	2020/11/03	95	80 - 120	105	80 - 120	<0.020	ug/L		
A073754	Dissolved Strontium (Sr)	2020/11/03	NC	80 - 120	100	80 - 120	<1.0	ug/L		
A073754	Dissolved Thallium (Tl)	2020/11/03	99	80 - 120	106	80 - 120	<0.010	ug/L		



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VERITAS

BV Labs Job #: C080058

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A073754	Dissolved Tin (Sn)	2020/11/03	102	80 - 120	106	80 - 120	<5.0	ug/L		
A073754	Dissolved Titanium (Ti)	2020/11/03	105	80 - 120	107	80 - 120	<5.0	ug/L		
A073754	Dissolved Uranium (U)	2020/11/03	108	80 - 120	109	80 - 120	<0.10	ug/L		
A073754	Dissolved Vanadium (V)	2020/11/03	100	80 - 120	102	80 - 120	<5.0	ug/L		
A073754	Dissolved Zinc (Zn)	2020/11/03	101	80 - 120	113	80 - 120	<5.0	ug/L		
A073754	Dissolved Zirconium (Zr)	2020/11/03	108	80 - 120	108	80 - 120	<0.10	ug/L		
A074128	1,1,1,2-tetrachloroethane	2020/11/02	91	50 - 140	83	60 - 130	<0.50	ug/L		
A074128	1,1,1-trichloroethane	2020/11/02	92	50 - 140	85	60 - 130	<0.50	ug/L		
A074128	1,1,2,2-tetrachloroethane	2020/11/02	99	50 - 140	89	60 - 130	<0.50	ug/L		
A074128	1,1,2Trichloro-1,2,2Trifluoroethane	2020/11/02	94	50 - 140	73	60 - 130	<2.0	ug/L		
A074128	1,1,2-trichloroethane	2020/11/02	93	50 - 140	83	60 - 130	<0.50	ug/L		
A074128	1,1-dichloroethane	2020/11/02	93	50 - 140	88	60 - 130	<0.50	ug/L		
A074128	1,1-dichloroethene	2020/11/02	97	50 - 140	79	60 - 130	<0.50	ug/L		
A074128	1,2,3-trichlorobenzene	2020/11/02	106	50 - 140	96	60 - 130	<2.0	ug/L		
A074128	1,2,4-trichlorobenzene	2020/11/02	101	50 - 140	93	60 - 130	<2.0	ug/L		
A074128	1,2,4-trimethylbenzene	2020/11/02	107	50 - 140	100	60 - 130	<2.0	ug/L		
A074128	1,2-dibromoethane	2020/11/02	91	50 - 140	82	60 - 130	<0.20	ug/L		
A074128	1,2-dichlorobenzene	2020/11/02	108	50 - 140	100	60 - 130	<0.50	ug/L		
A074128	1,2-dichloroethane	2020/11/02	84	50 - 140	78	60 - 130	<0.50	ug/L		
A074128	1,2-dichloropropane	2020/11/02	94	50 - 140	86	60 - 130	<0.50	ug/L		
A074128	1,3,5-trimethylbenzene	2020/11/02	109	50 - 140	102	60 - 130	<2.0	ug/L		
A074128	1,3-dichlorobenzene	2020/11/02	113	50 - 140	105	60 - 130	<0.50	ug/L		
A074128	1,4-dichlorobenzene	2020/11/02	105	50 - 140	98	60 - 130	<0.50	ug/L		
A074128	2-Butanone (MEK)	2020/11/02			78	50 - 140	<50	ug/L		
A074128	4-Methyl-2-pentanone (MIBK)	2020/11/02			97	50 - 140	<10	ug/L		
A074128	Acetone	2020/11/02			83	50 - 140	<15	ug/L		
A074128	Benzene	2020/11/02	95	50 - 140	88	60 - 130	<0.40	ug/L		
A074128	Bromobenzene	2020/11/02	101	50 - 140	92	60 - 130	<2.0	ug/L		
A074128	Bromodichloromethane	2020/11/02	86	50 - 140	78	60 - 130	<1.0	ug/L	NC	30
A074128	Bromoform	2020/11/02	93	50 - 140	85	60 - 130	<1.0	ug/L	NC	30
A074128	Bromomethane	2020/11/02	82	50 - 140	83	50 - 140	<1.0	ug/L		
A074128	Carbon tetrachloride	2020/11/02	93	50 - 140	87	60 - 130	<0.50	ug/L		

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BV Labs Job #: C080058

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A074128	Chlorobenzene	2020/11/02	91	50 - 140	82	60 - 130	<0.50	ug/L		
A074128	Chlorodibromomethane	2020/11/02	87	50 - 140	76	60 - 130	<1.0	ug/L	NC	30
A074128	Chloroethane	2020/11/02	72	50 - 140	74	50 - 140	<1.0	ug/L		
A074128	Chloroform	2020/11/02	90	50 - 140	84	60 - 130	<1.0	ug/L	NC	30
A074128	Chloromethane	2020/11/02	86	50 - 140	85	50 - 140	<1.0	ug/L		
A074128	cis-1,2-dichloroethene	2020/11/02	91	50 - 140	85	60 - 130	<1.0	ug/L		
A074128	cis-1,3-dichloropropene	2020/11/02	76	50 - 140	66	50 - 140	<1.0	ug/L		
A074128	Dichlorodifluoromethane	2020/11/02	81	50 - 140	79	50 - 140	<2.0	ug/L		
A074128	Dichloromethane	2020/11/02	94	50 - 140	85	60 - 130	<2.0	ug/L		
A074128	Ethylbenzene	2020/11/02	96	50 - 140	92	60 - 130	<0.40	ug/L		
A074128	F1 (C6-C10)	2020/11/02			97	70 - 130	<300	ug/L		
A074128	Hexachlorobutadiene	2020/11/02	99	50 - 140	94	60 - 130	<0.50	ug/L		
A074128	Isopropylbenzene	2020/11/02	93	50 - 140	86	60 - 130	<2.0	ug/L		
A074128	m & p-Xylene	2020/11/02	118	50 - 140	107	60 - 130	<0.40	ug/L		
A074128	Methylcyclohexane	2020/11/02	101	50 - 140	93	60 - 130	<2.0	ug/L		
A074128	Methyl-tert-butylether (MTBE)	2020/11/02	90	50 - 140	84	60 - 130	<4.0	ug/L		
A074128	n-Decane	2020/11/02	107	50 - 140	102	60 - 130	<20	ug/L		
A074128	o-Xylene	2020/11/02	99	50 - 140	88	60 - 130	<0.40	ug/L		
A074128	Styrene	2020/11/02	83	50 - 140	74	60 - 130	<0.50	ug/L		
A074128	Tetrachloroethene	2020/11/02	93	50 - 140	88	60 - 130	<0.50	ug/L		
A074128	Toluene	2020/11/02	102	50 - 140	93	60 - 130	<0.40	ug/L		
A074128	trans-1,2-dichloroethene	2020/11/02	93	50 - 140	88	60 - 130	<1.0	ug/L		
A074128	trans-1,3-dichloropropene	2020/11/02	63	50 - 140	60	50 - 140	<1.0	ug/L		
A074128	Trichloroethene	2020/11/02	90	50 - 140	84	60 - 130	<0.50	ug/L		
A074128	Trichlorofluoromethane	2020/11/02	101	50 - 140	85	60 - 130	<4.0	ug/L		
A074128	VH C6-C10	2020/11/02			94	70 - 130	<300	ug/L		
A074128	Vinyl chloride	2020/11/02	84	50 - 140	80	50 - 140	<0.50	ug/L		
A074128	Xylenes (Total)	2020/11/02					<0.40	ug/L		
A074781	Dissolved Mercury (Hg)	2020/11/02	94	80 - 120	90	80 - 120	<0.0019	ug/L	NC	20
A074820	Dissolved Mercury (Hg)	2020/11/02	60 (1)	80 - 120	90	80 - 120	<0.0019	ug/L	NC	20
A076097	1-Methylnaphthalene	2020/11/03	88	50 - 140	88	50 - 140	<0.050	ug/L	NC	40
A076097	2-Methylnaphthalene	2020/11/03	88	50 - 140	88	50 - 140	<0.10	ug/L	NC	40

BUREAU
VERITAS

BV Labs Job #: C080058

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A076097	Acenaphthene	2020/11/03	91	50 - 140	92	50 - 140	<0.050	ug/L	NC	40
A076097	Acenaphthylene	2020/11/03	90	50 - 140	91	50 - 140	<0.050	ug/L	NC	40
A076097	Acridine	2020/11/03	100	50 - 140	102	50 - 140	<0.050	ug/L	NC	40
A076097	Anthracene	2020/11/03	96	50 - 140	98	50 - 140	<0.010	ug/L	NC	40
A076097	Benzo(a)anthracene	2020/11/03	91	50 - 140	95	50 - 140	<0.010	ug/L	NC	40
A076097	Benzo(a)pyrene	2020/11/03	82	50 - 140	93	50 - 140	<0.0050	ug/L	NC	40
A076097	Benzo(b&j)fluoranthene	2020/11/03	89	50 - 140	98	50 - 140	<0.030	ug/L	NC	40
A076097	Benzo(g,h,i)perylene	2020/11/03	69	50 - 140	104	50 - 140	<0.050	ug/L	NC	40
A076097	Benzo(k)fluoranthene	2020/11/03	88	50 - 140	103	50 - 140	<0.050	ug/L	NC	40
A076097	Chrysene	2020/11/03	92	50 - 140	95	50 - 140	<0.020	ug/L	NC	40
A076097	Dibenz(a,h)anthracene	2020/11/03	72	50 - 140	106	50 - 140	<0.0030	ug/L	NC	40
A076097	Fluoranthene	2020/11/03	90	50 - 140	91	50 - 140	<0.020	ug/L	NC	40
A076097	Fluorene	2020/11/03	92	50 - 140	93	50 - 140	<0.050	ug/L	NC	40
A076097	Indeno(1,2,3-cd)pyrene	2020/11/03	74	50 - 140	112	50 - 140	<0.050	ug/L	NC	40
A076097	Naphthalene	2020/11/03	85	50 - 140	86	50 - 140	<0.10	ug/L	2.0	40
A076097	Phenanthrene	2020/11/03	89	50 - 140	92	50 - 140	<0.050	ug/L	NC	40
A076097	Pyrene	2020/11/03	93	50 - 140	90	50 - 140	<0.020	ug/L	NC	40
A076097	Quinoline	2020/11/03	99	50 - 140	106	50 - 140	<0.020	ug/L	NC	40
A076116	EPH (C10-C19)	2020/11/03	108	60 - 140	99	70 - 130	<0.20	mg/L	NC	30
A076116	EPH (C19-C32)	2020/11/03	110	60 - 140	94	70 - 130	<0.20	mg/L	NC	30
A076118	F2 (C10-C16 Hydrocarbons)	2020/11/04	81	70 - 130	90	70 - 130	<0.15	mg/L	NC	40
A076118	F3 (C16-C34 Hydrocarbons)	2020/11/04					<0.20	mg/L	NC	40
A076118	F4 (C34-C50 Hydrocarbons)	2020/11/04					<0.20	mg/L	NC	40
A076803	Diethylene Glycol	2020/11/04	93	60 - 140	91	70 - 130	<5.0	mg/L	NC	30
A076803	Ethylene Glycol	2020/11/04	94	60 - 140	91	70 - 130	<3.0	mg/L	NC	30
A076803	Propylene Glycol	2020/11/04	90	60 - 140	88	70 - 130	<5.0	mg/L	NC	30



BUREAU
VERITAS

BV Labs Job #: C080058

Report Date: 2020/11/05

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD

Client Project #: 15934

Sampler Initials: RM

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A076803	Triethylene Glycol	2020/11/04	89	60 - 140	88	70 - 130	<5.0	mg/L	NC	30
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration) NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL). (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.										



BUREAU
VERITAS

BV Labs Job #: C080058
Report Date: 2020/11/05

KEystone ENVIRONMENTAL LTD
Client Project #: 15934
Sampler Initials: RM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Gita Pokhrel, Laboratory Supervisor

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

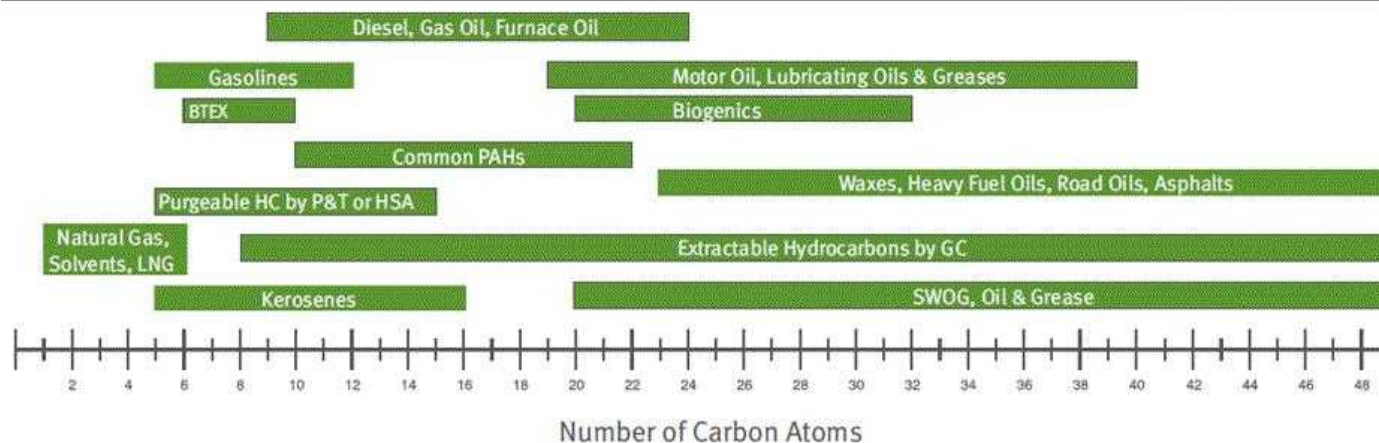
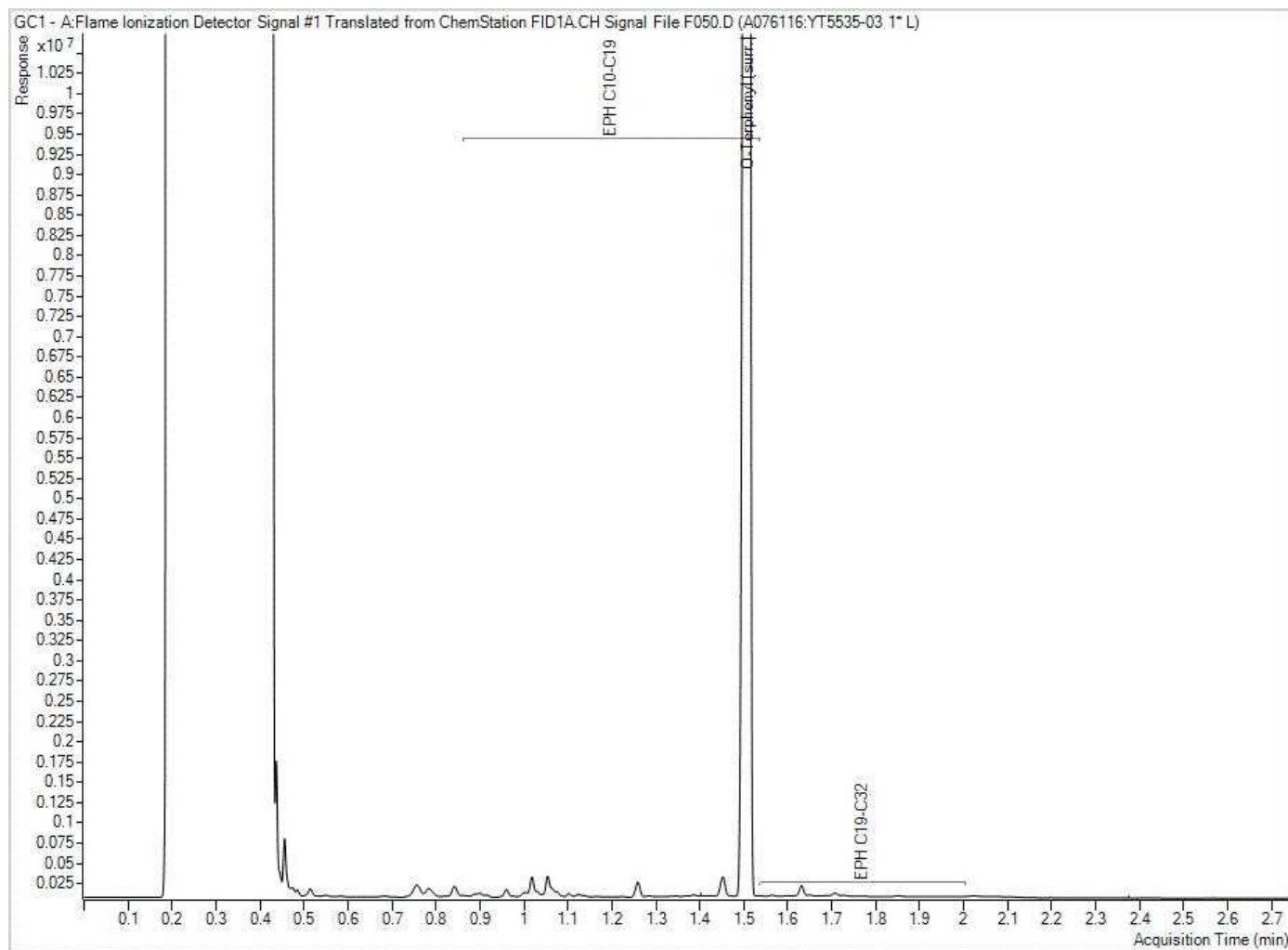


Bureau Veritas Laboratories
4600 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel: (604) 734 7276 Toll-free 800-563-6266 Fax: (604) 731 2386 www.bvlabs.com

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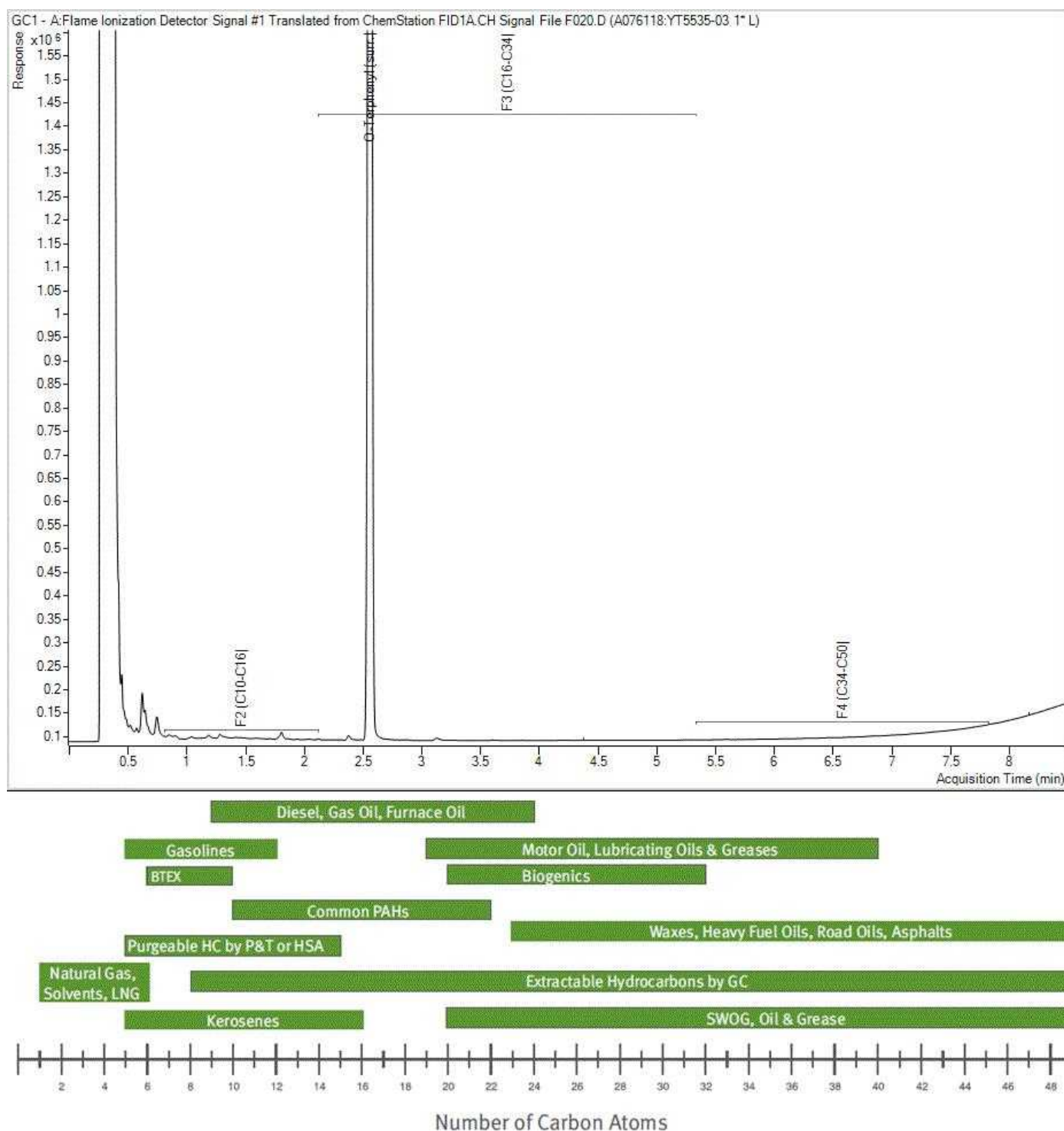
INVOICE TO:		Report Information		Project Information	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name		Quotation #	B91097
Contact Name	Ross McCarter	Contact Name		P.O. #	
Address	SUITE 320 4400 DOMINION STREET BURNABY BC V5G 4G3	Address		Project #	15934
Phone	(604) 430-0671	Phone		Project Name	
Email	rmccarter@keystoneenvironmental.ca	Email		Site #	
Regulatory Criteria:		Special Instructions		Analysed By: <i>RLM</i>	
☒ CSR				Sampled By: <i>RLM</i>	
☒ CCME				Turnaround Time (TAT) Required:	
☐ BC Water Quality				Please provide advance notice for rush projects	
☐ Other				Regular (Standard) TAT:	
				(will be applied if Rush TAT is not specified)	
				Standard TAT = 5-7 Working days for most tests.	
				Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
				Job Specific Rush TAT (if applies to entire submission)	
				1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐	
				Rush Confirmation Number: ☐	
				(call lab for #)	
				# of Bottles	
				Comments	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	
1	MW20-5				
2	MW20-7				
3	MW20-9				
4	MW20-10				
5	MW20-11				
6	MW20-12				
7	MW20-13				
8	MW20-15				
9	MW20-A				
10					
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	
<i>RLM</i>		20/10/24	14:35	<i>RLM</i>	
				Date: (YY/MM/DD)	
				Time	
				# jars used and not submitted	
				Time Sensitive	
				Temperature (°C) on Receipt	
				Custody Seal Intact on Cooler?	
				Yes ☐ No ☒	
				White Br/Labs	
				Yellow Client	

EPH in Water when PAH required Chromatogram



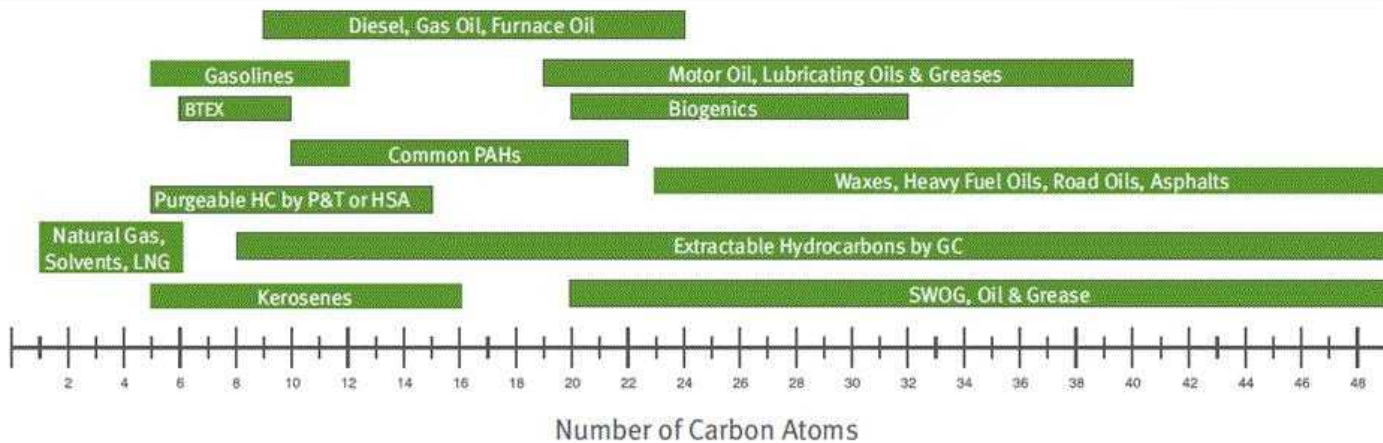
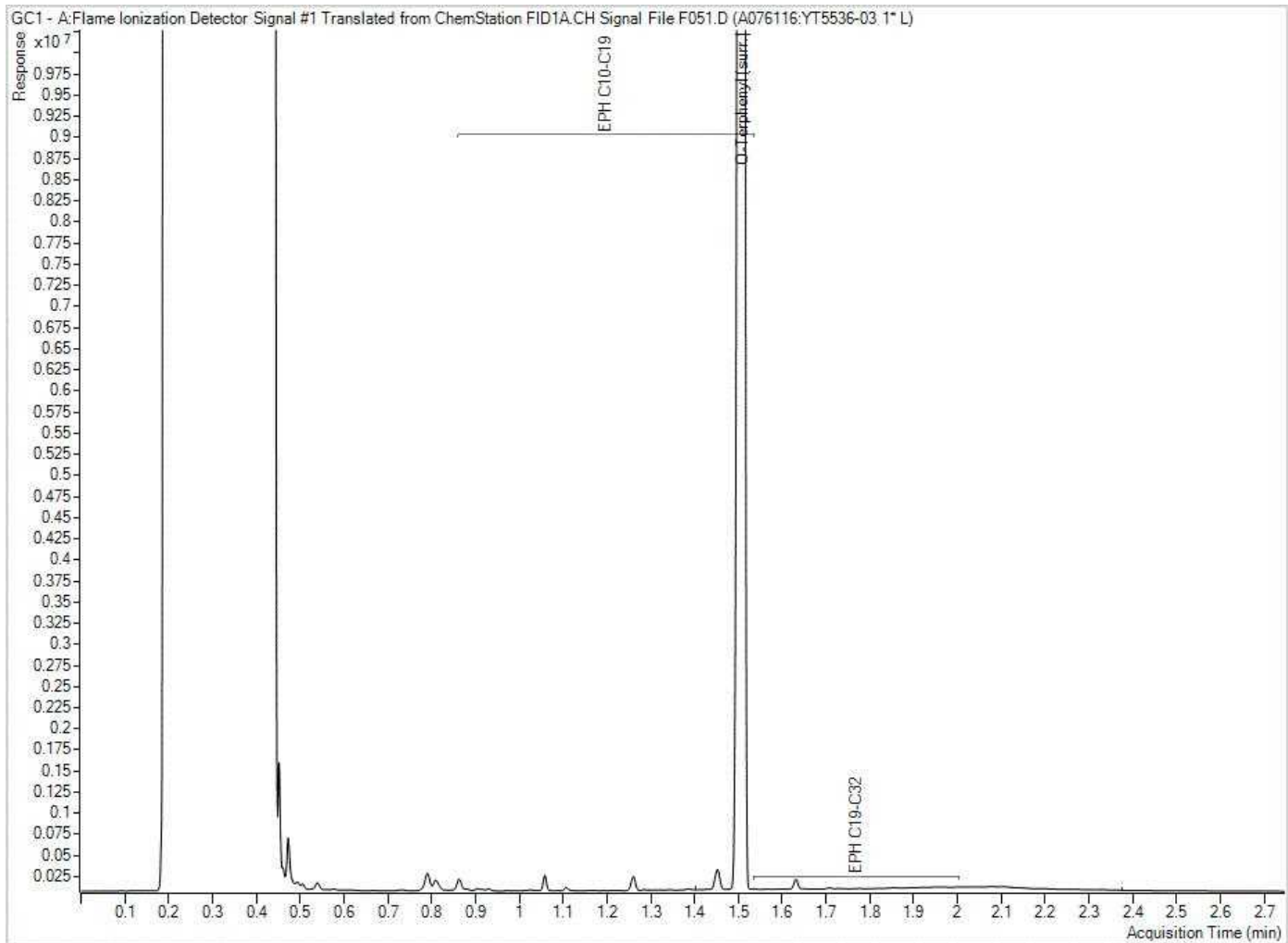
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F2-F4 in Water when PAH required Chromatogram



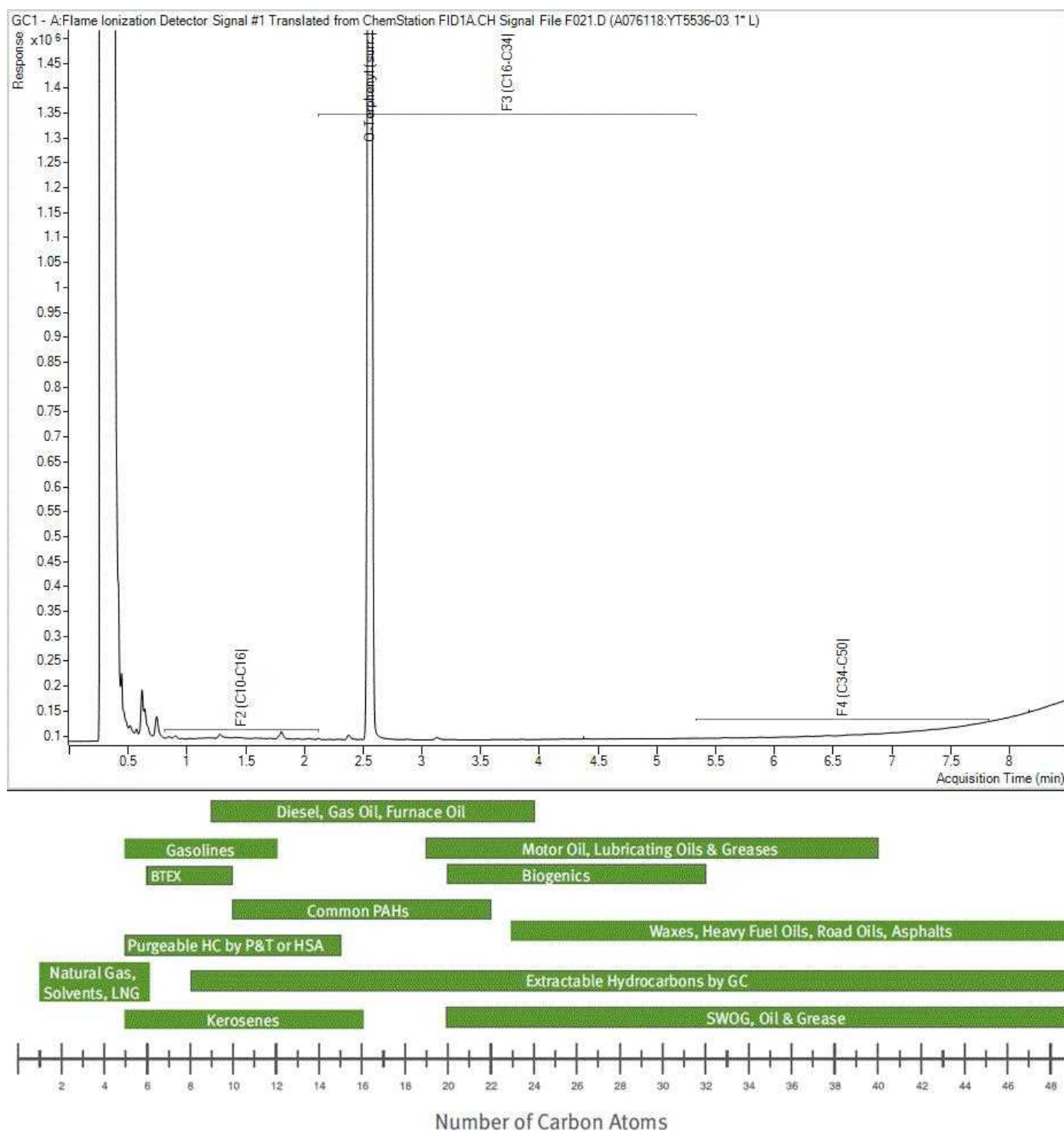
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EPH in Water when PAH required Chromatogram



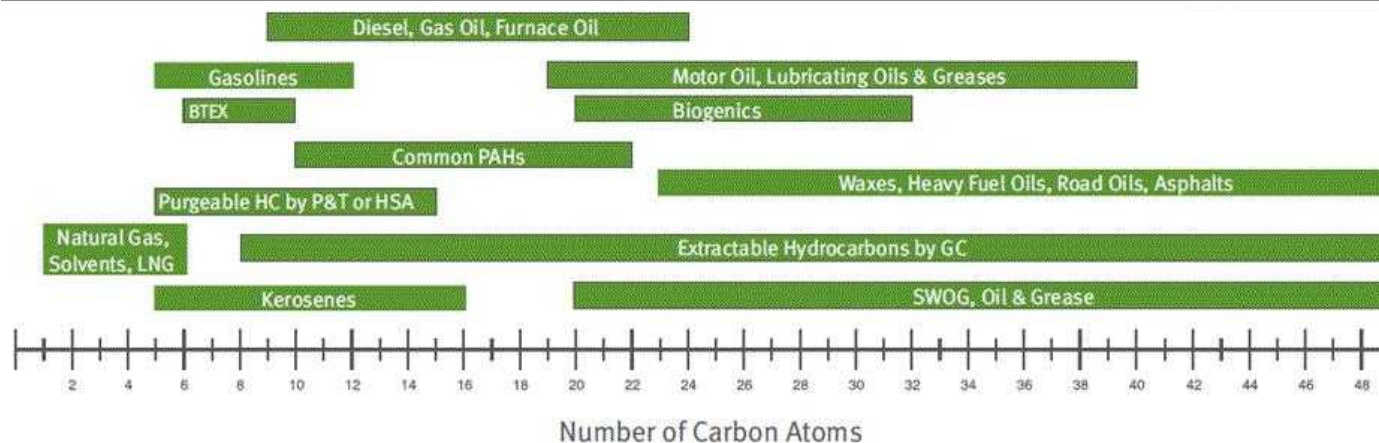
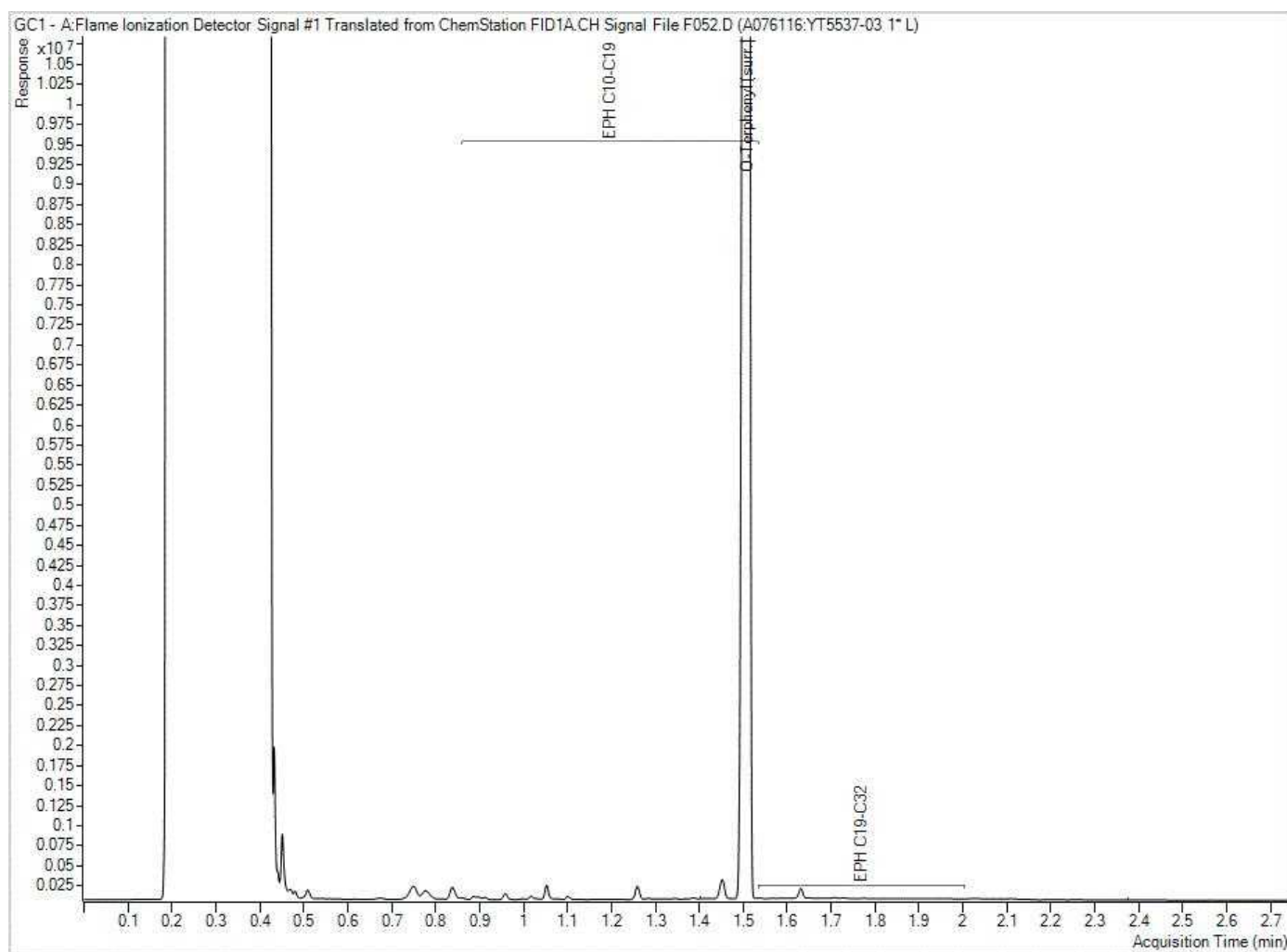
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F2-F4 in Water when PAH required Chromatogram



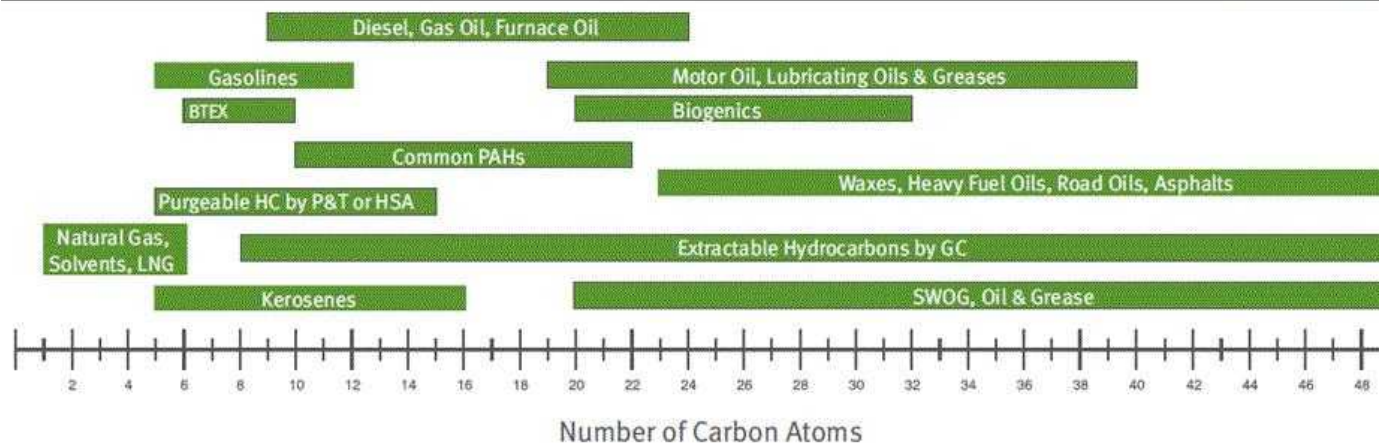
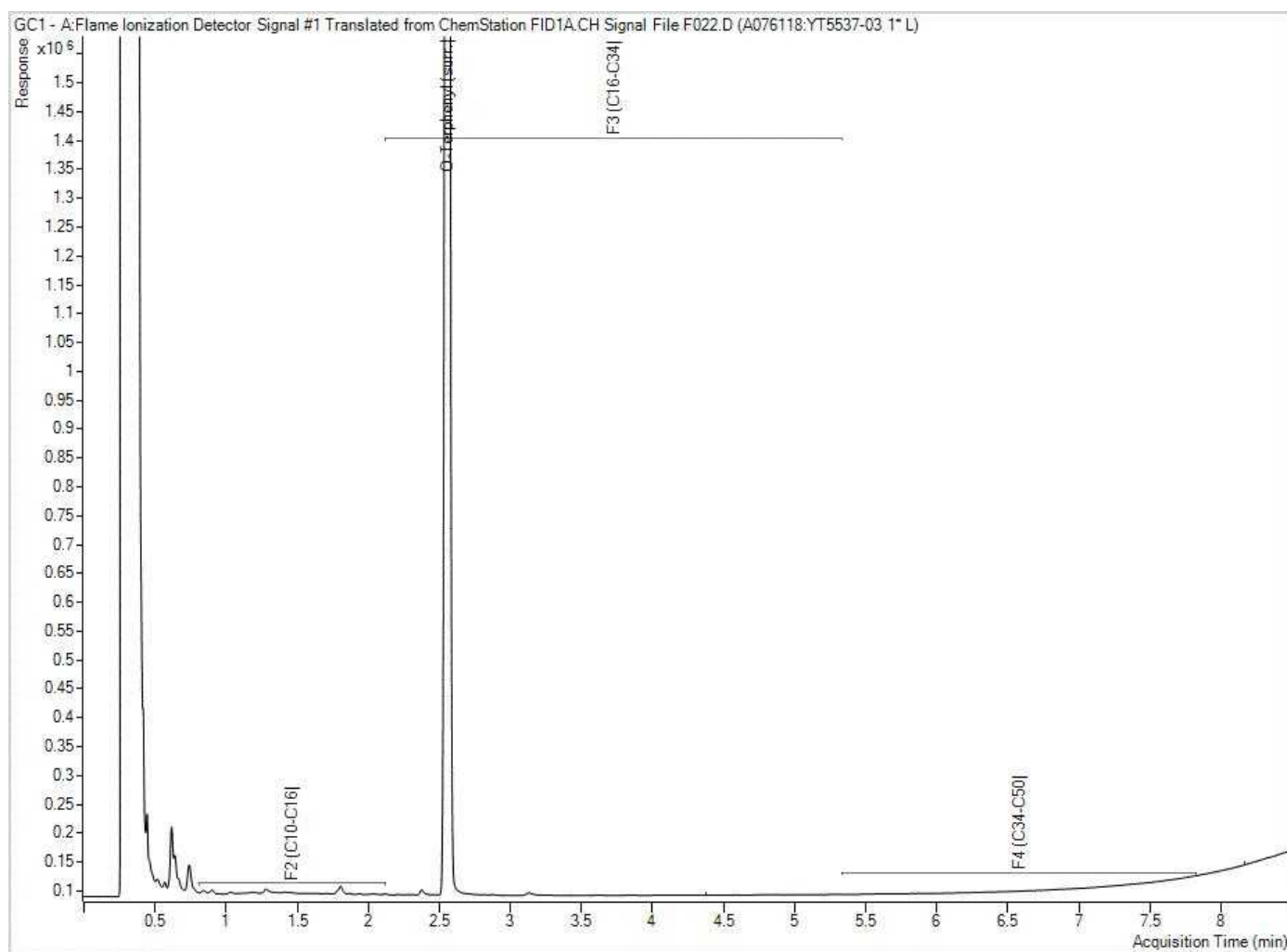
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EPH in Water when PAH required Chromatogram



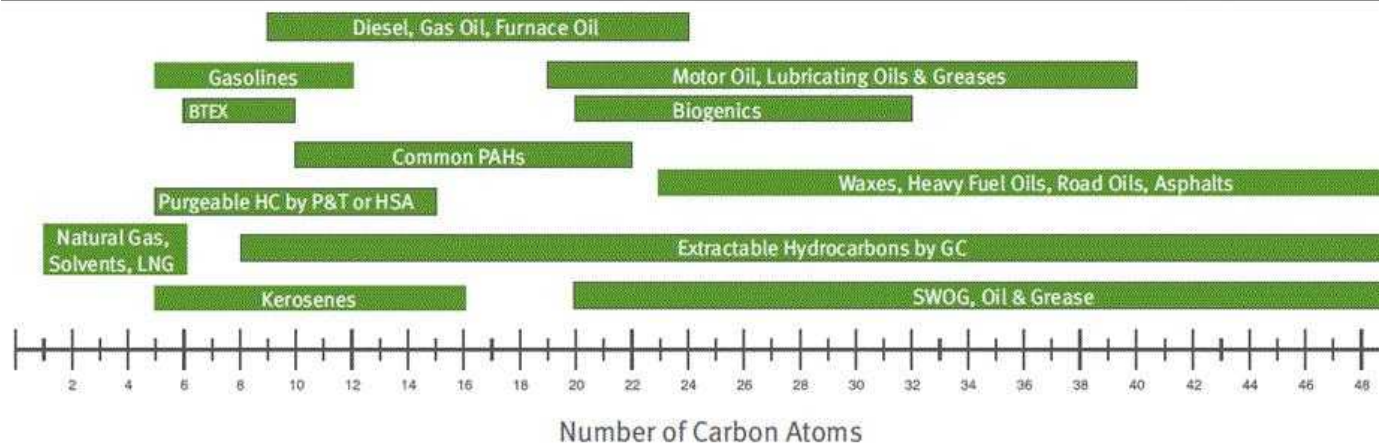
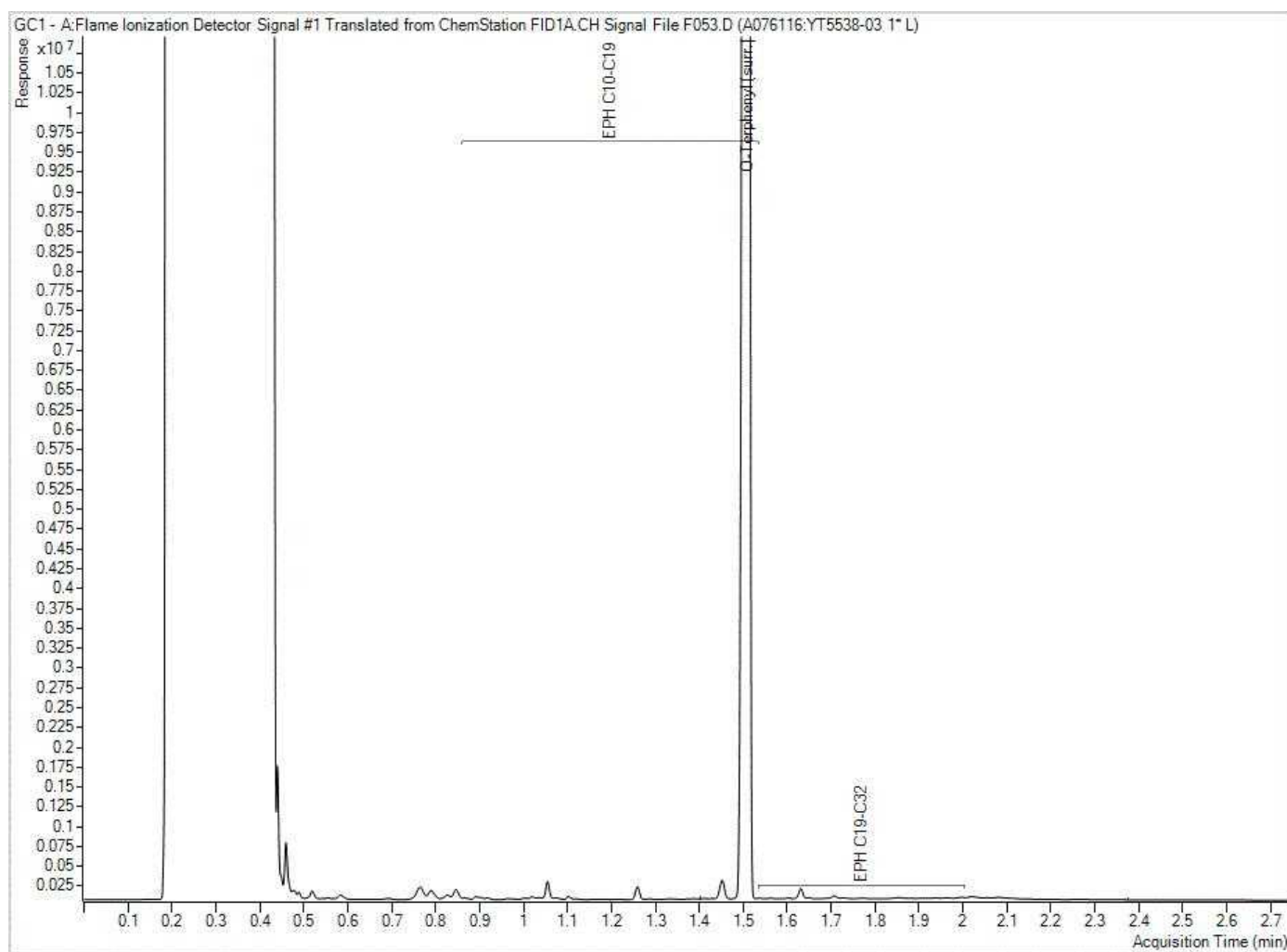
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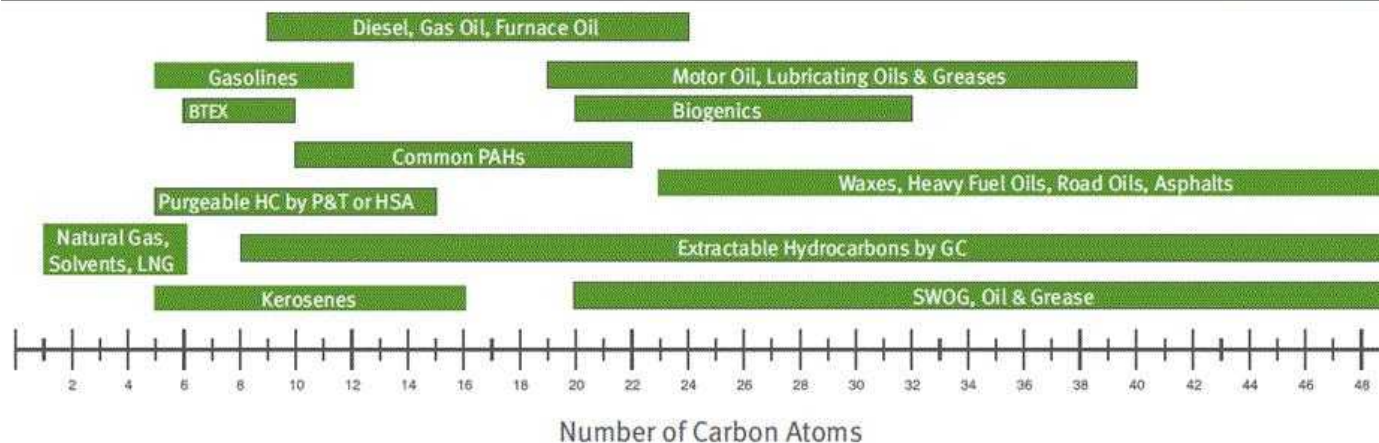
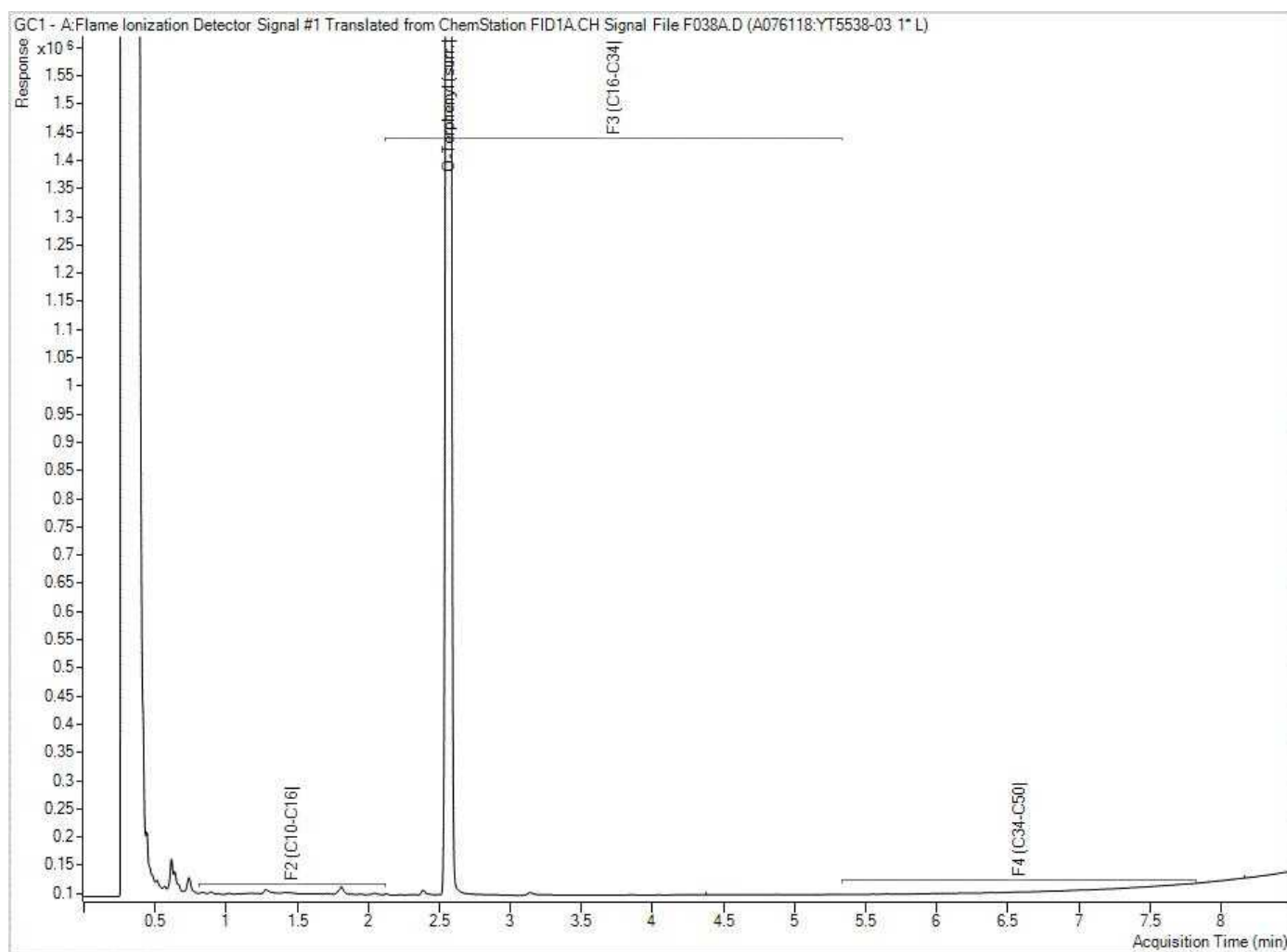
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EPH in Water when PAH required Chromatogram



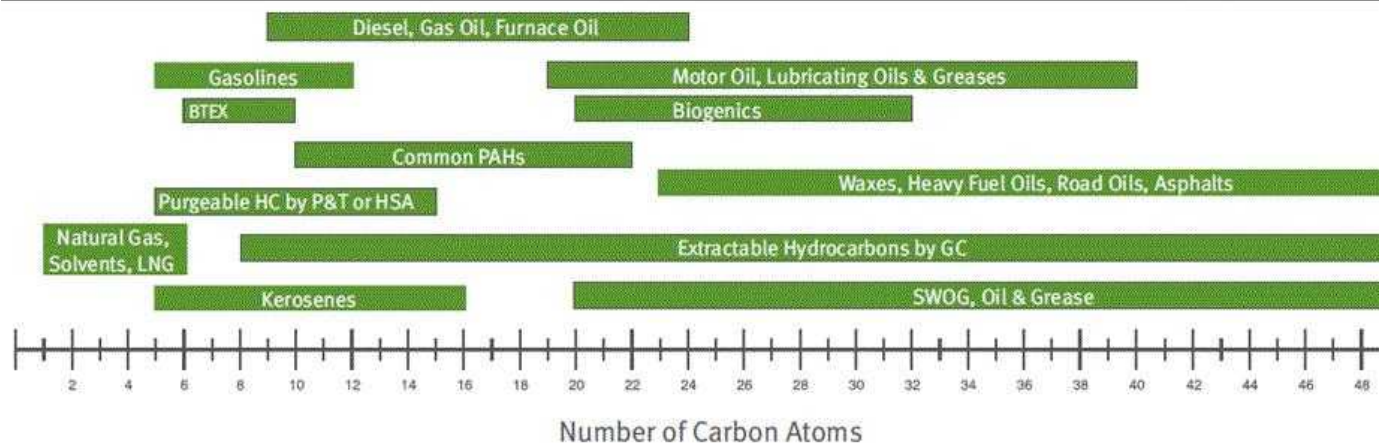
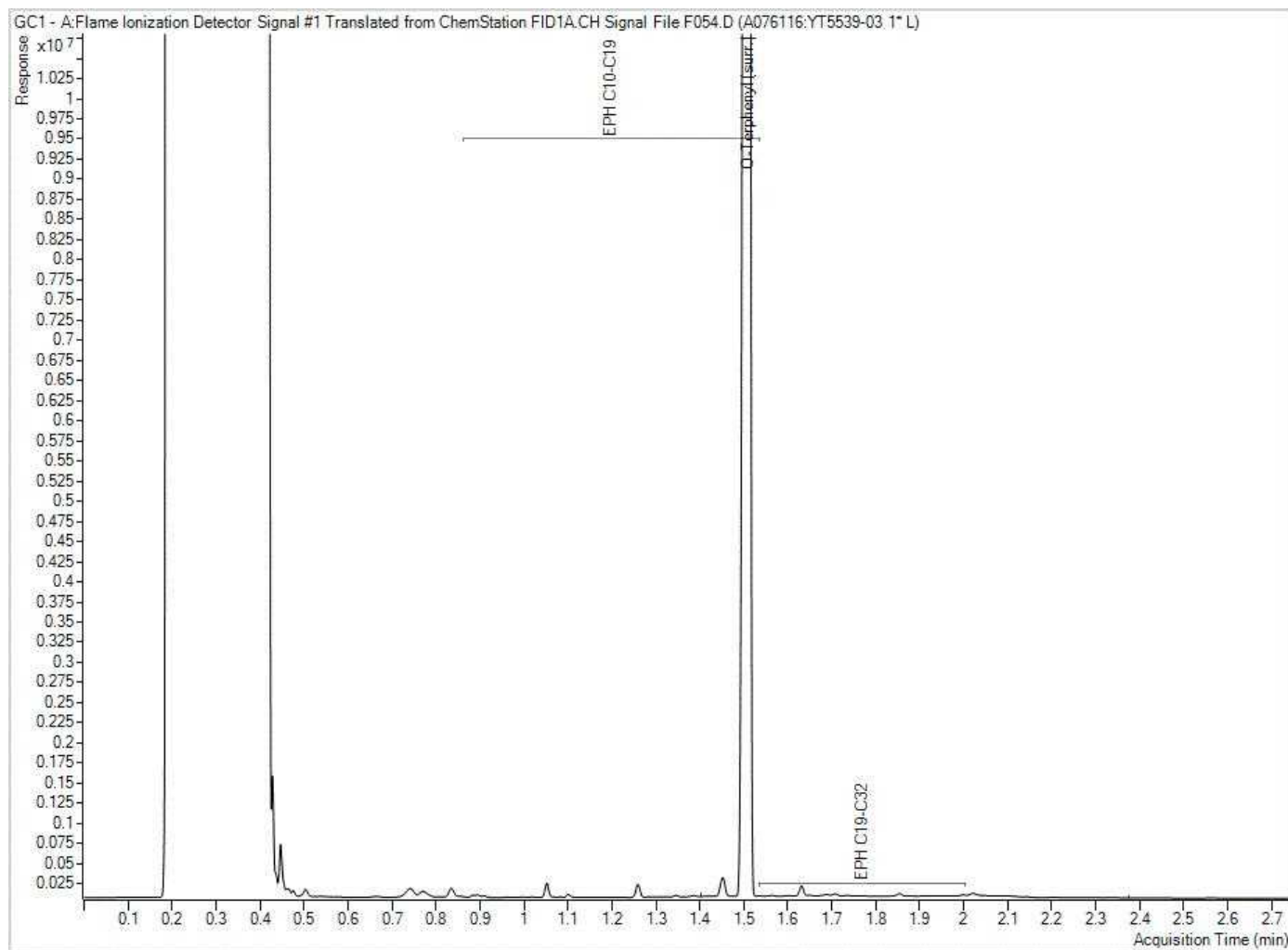
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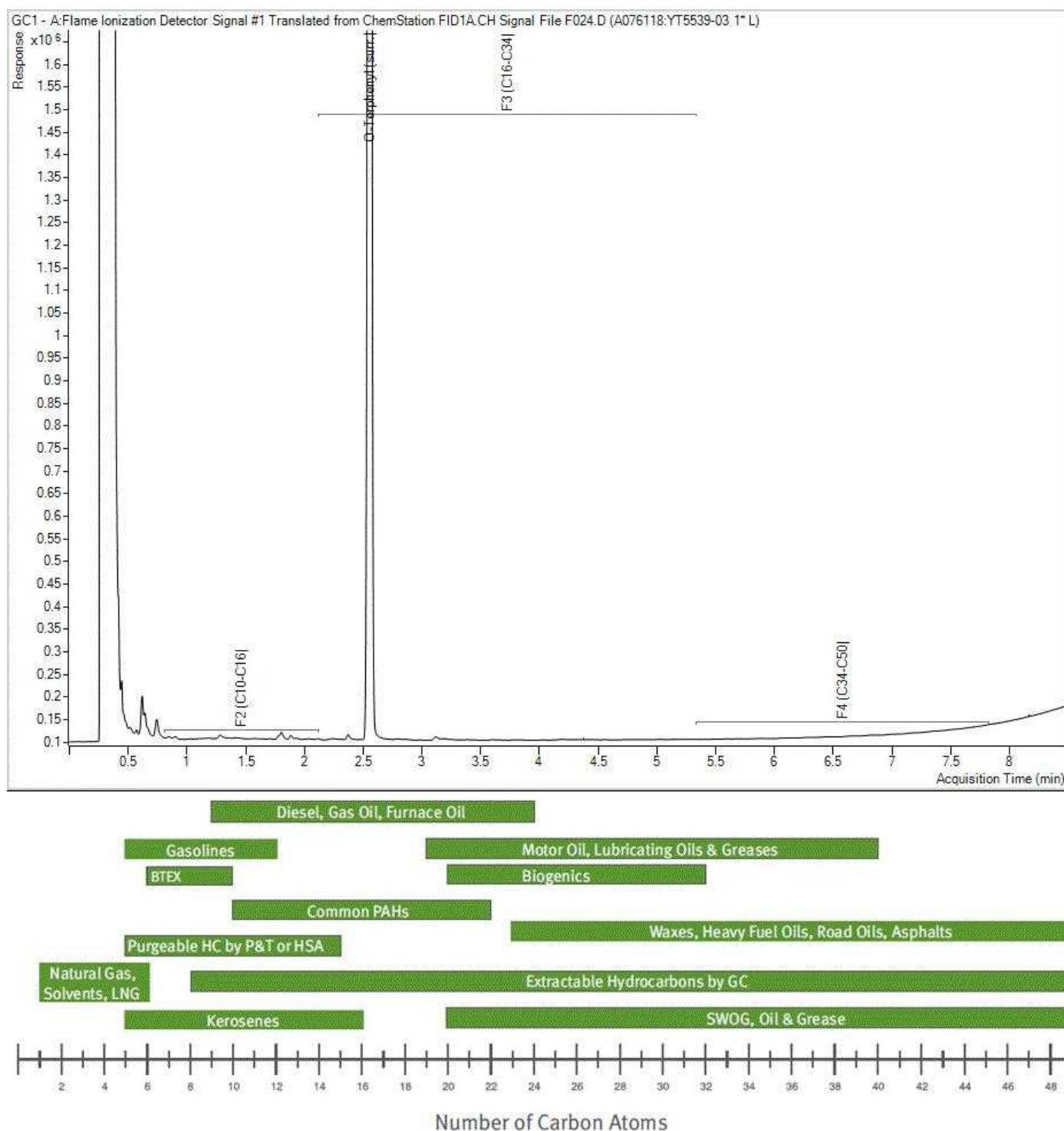
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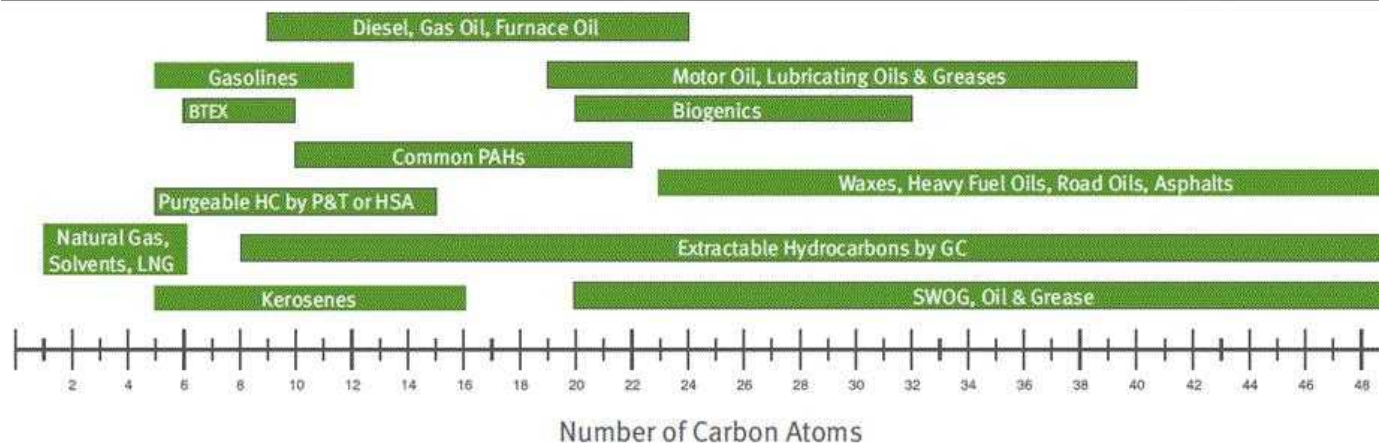
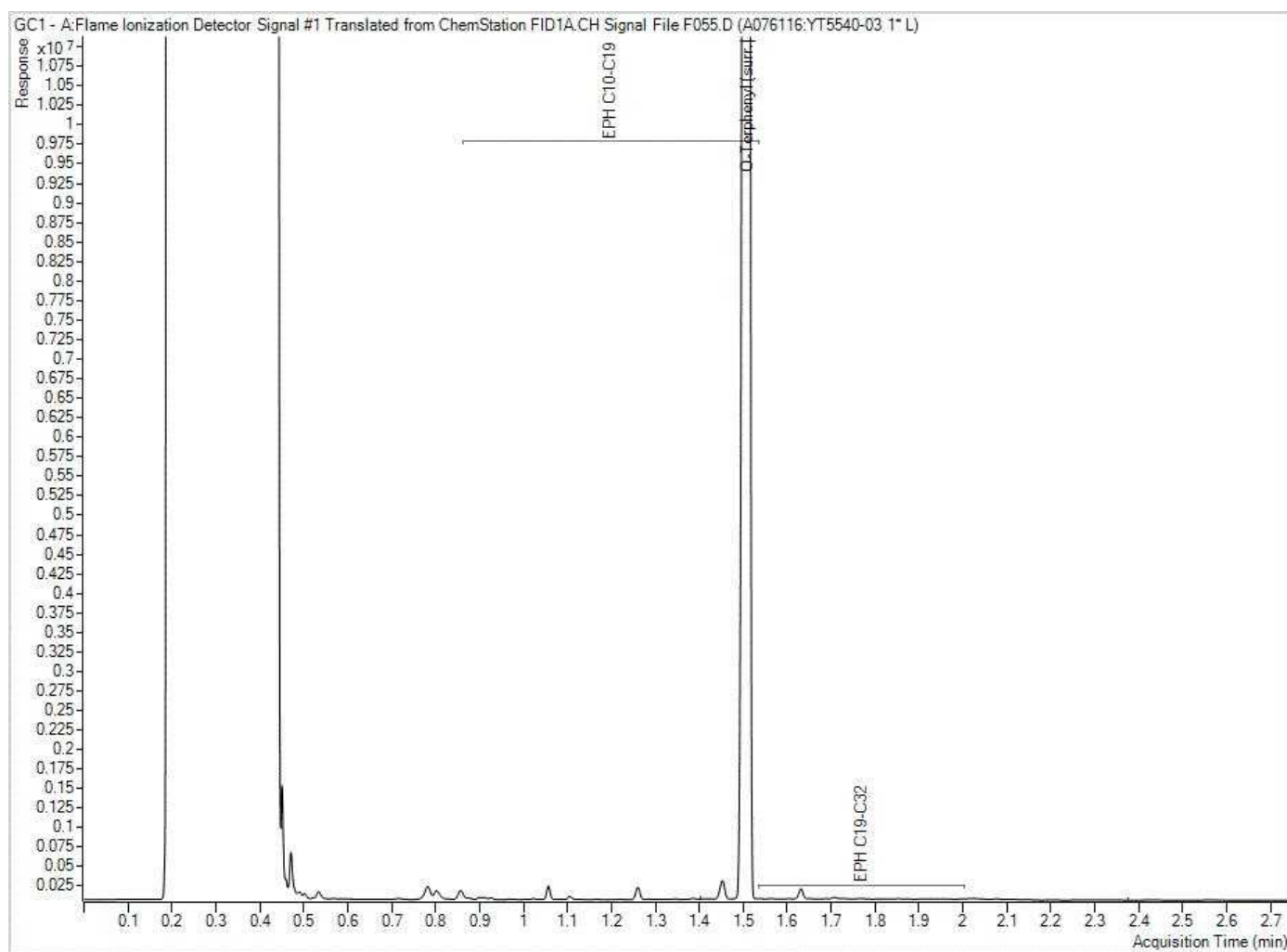
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F2-F4 in Water when PAH required Chromatogram



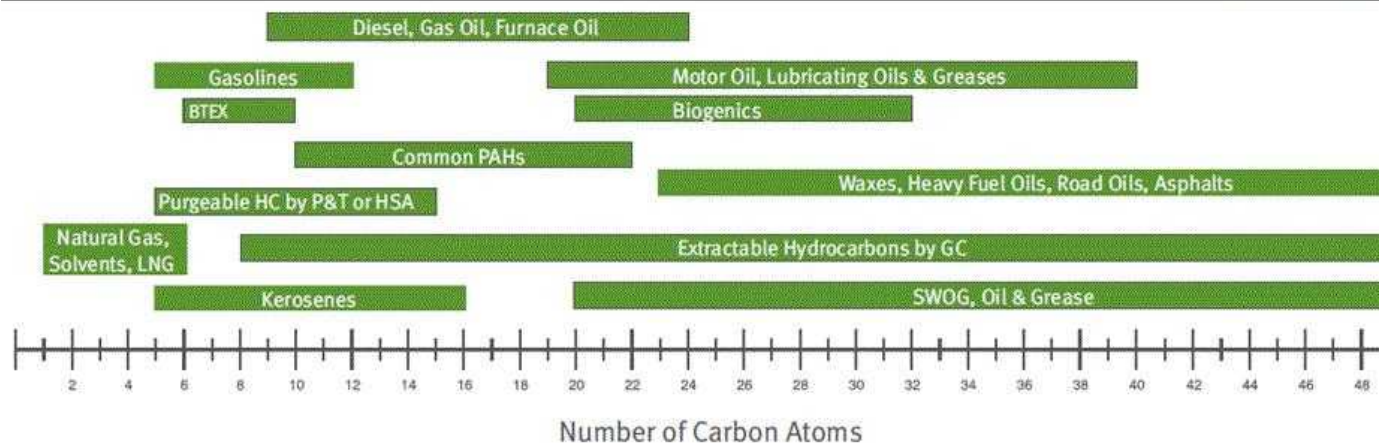
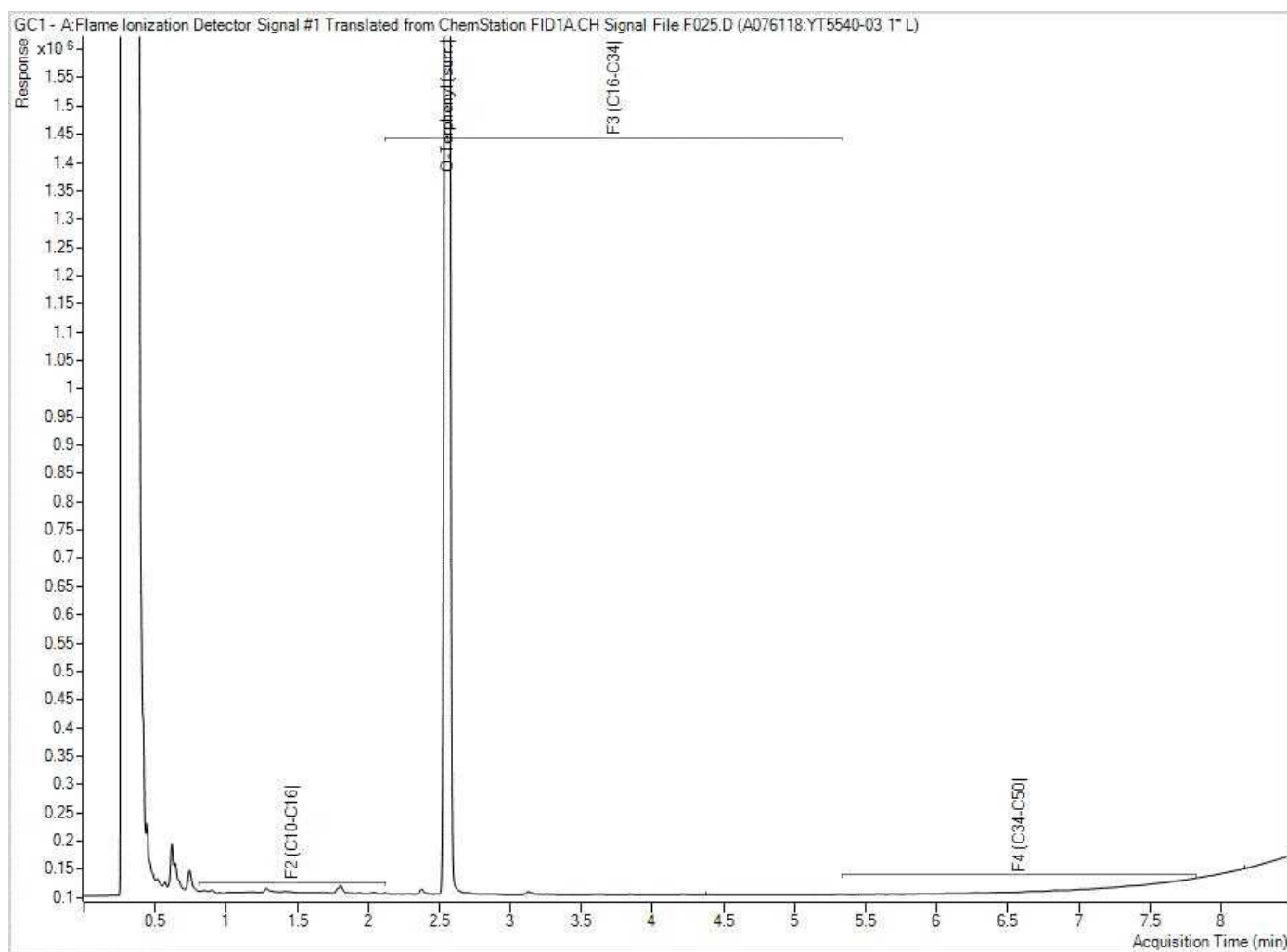
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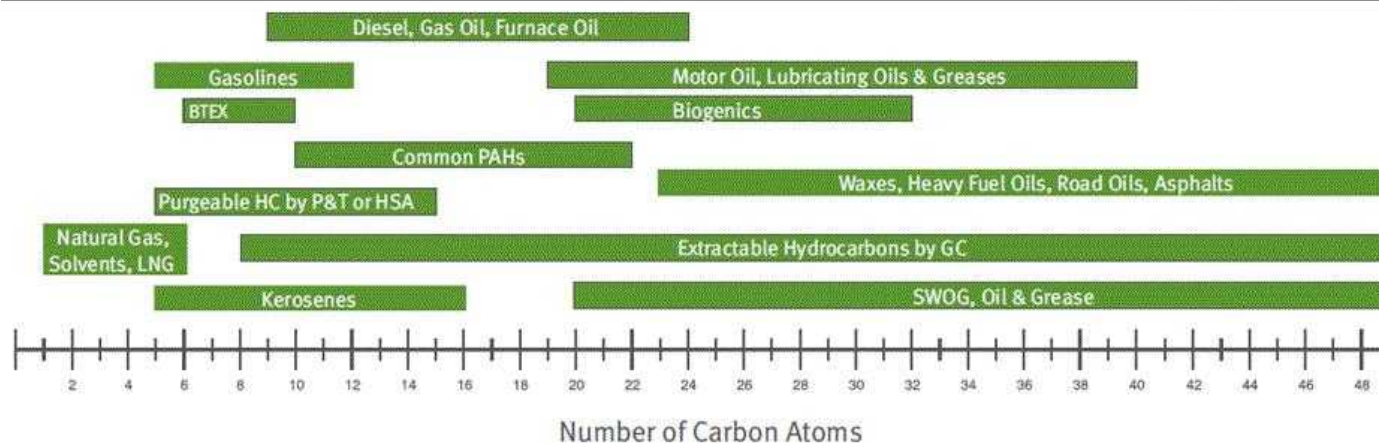
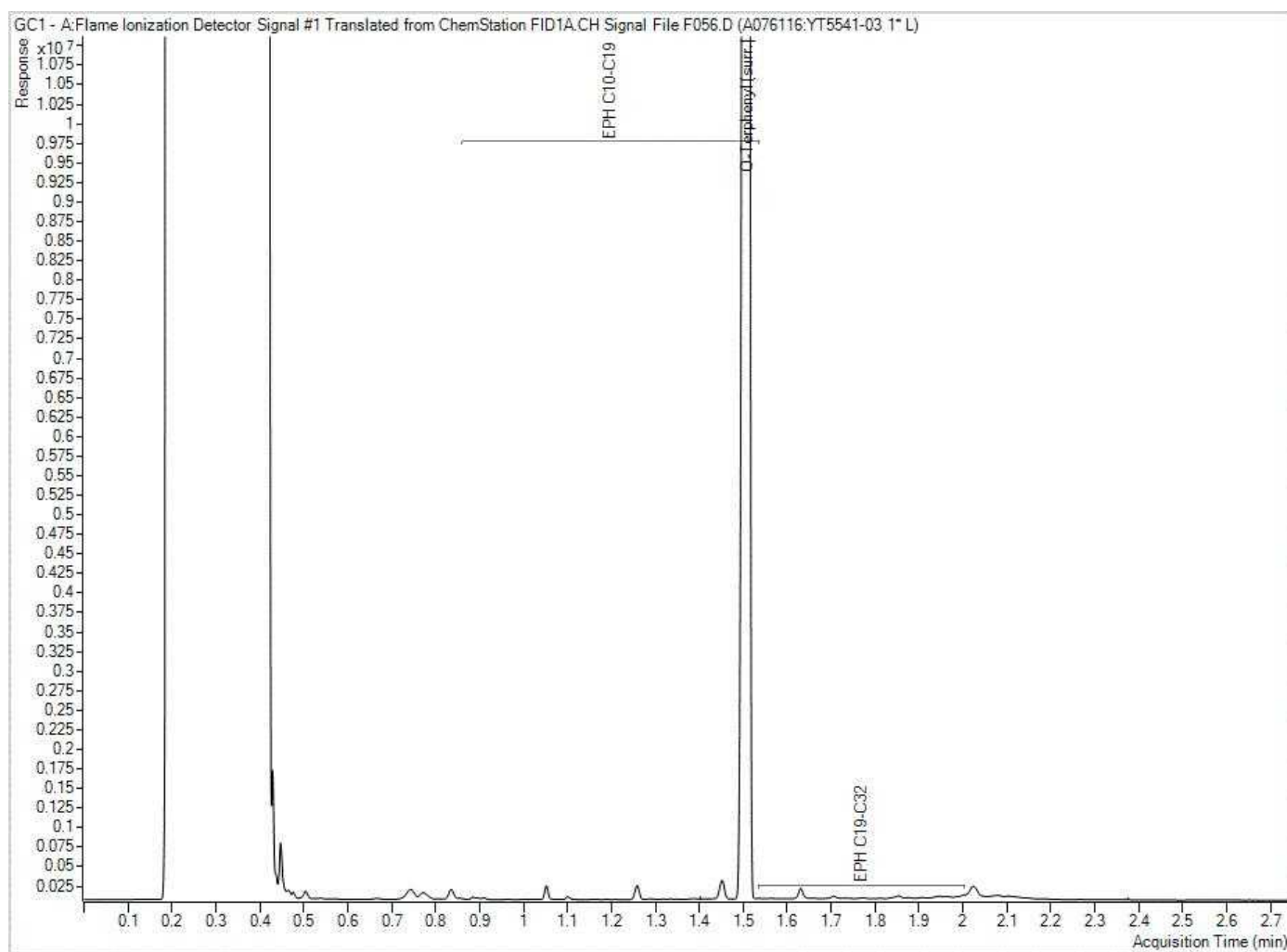
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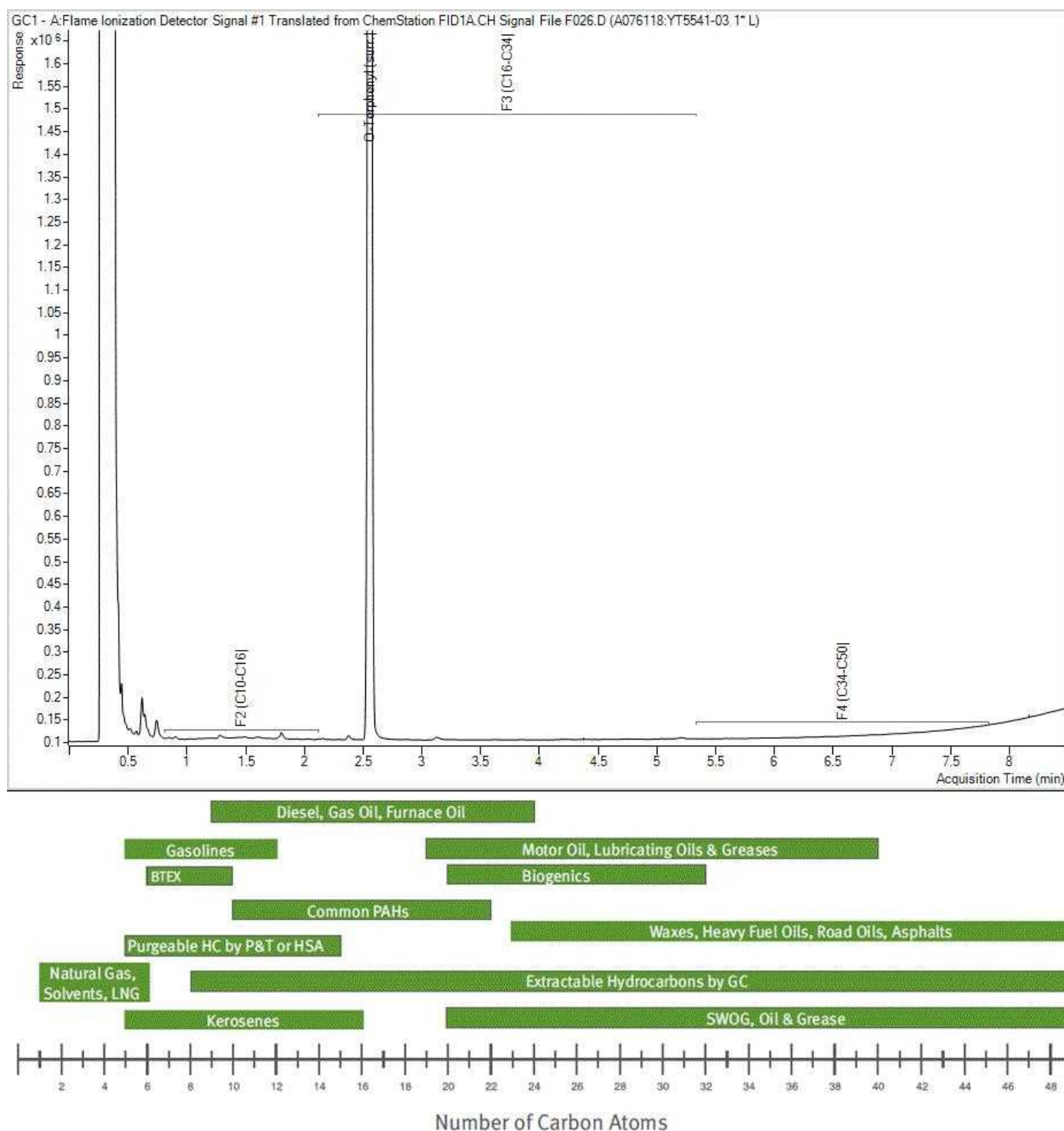
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EPH in Water when PAH required Chromatogram



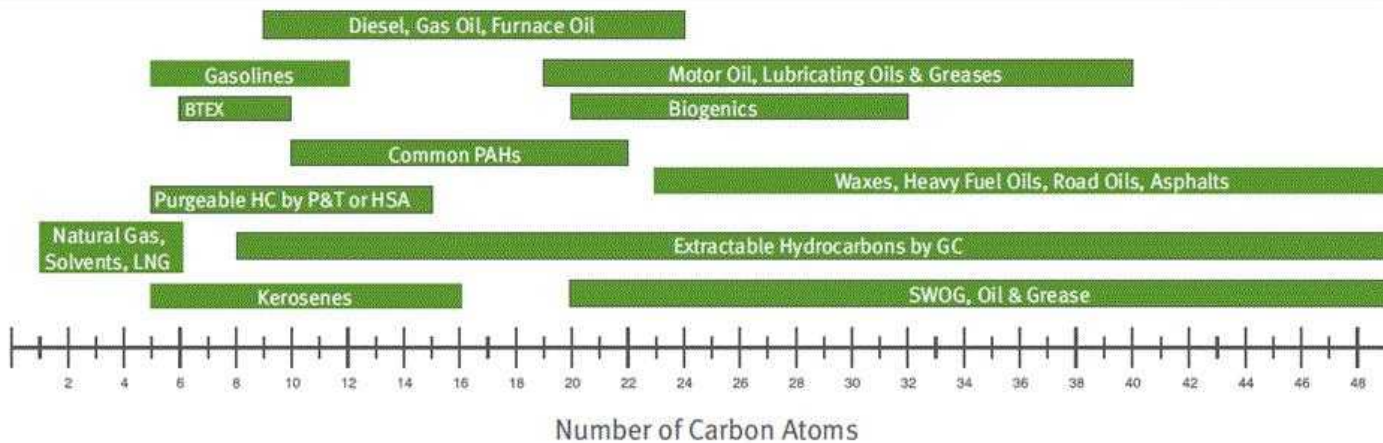
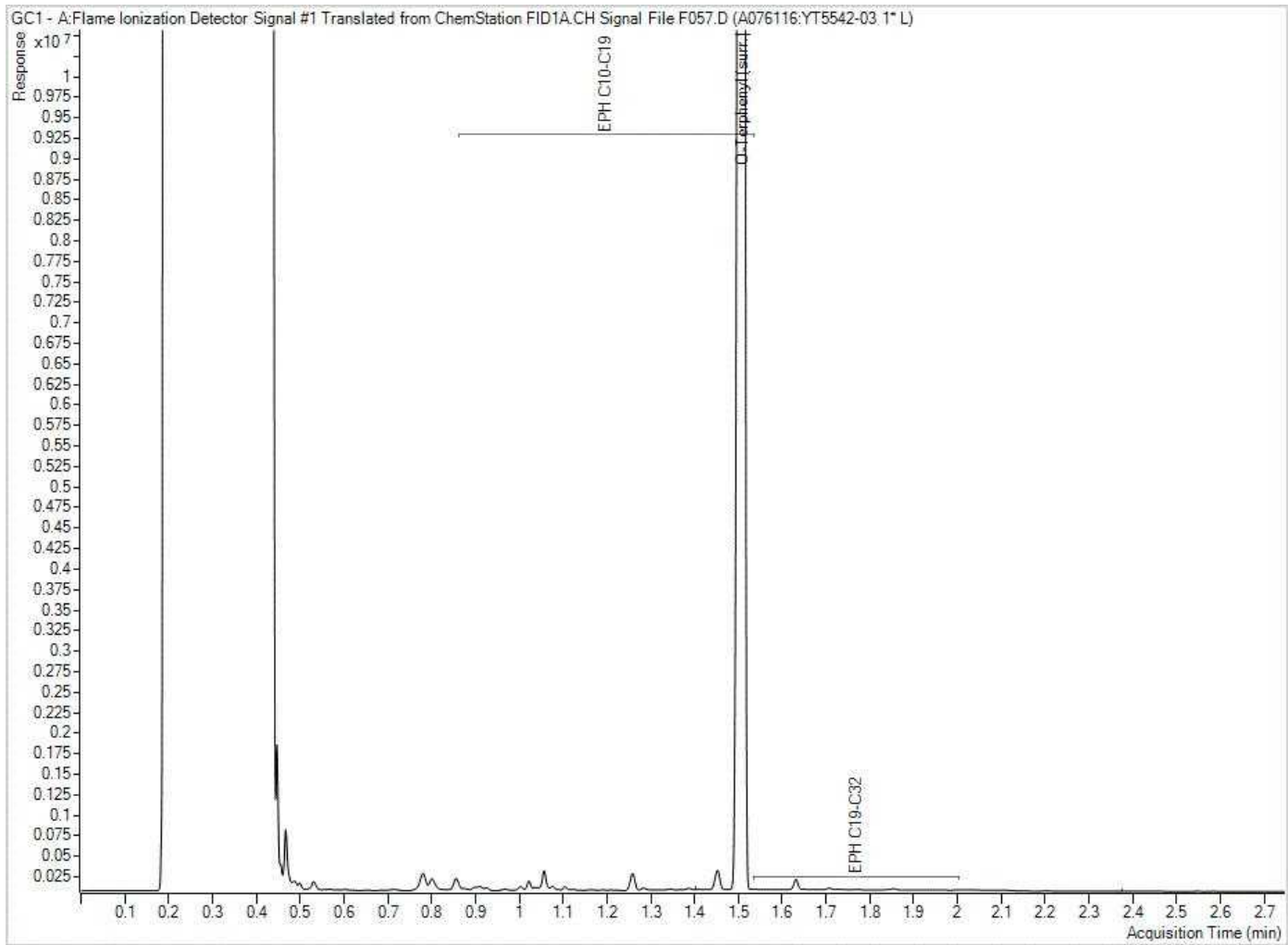
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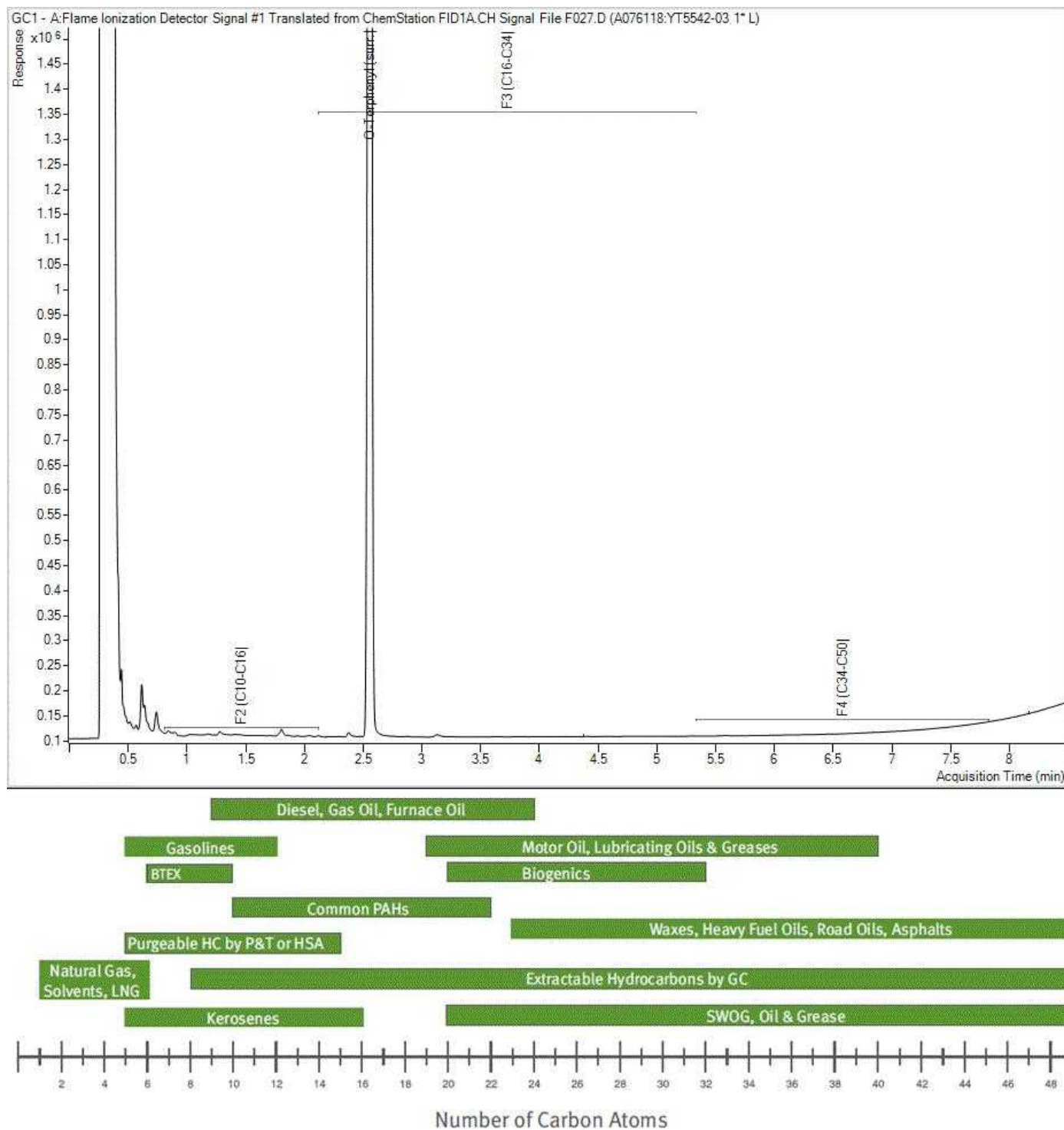
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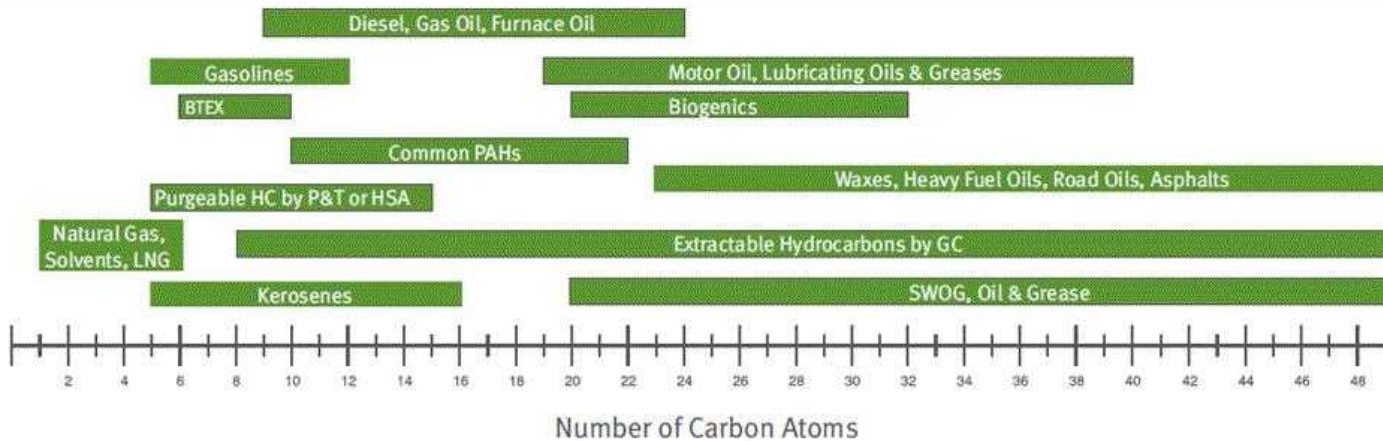
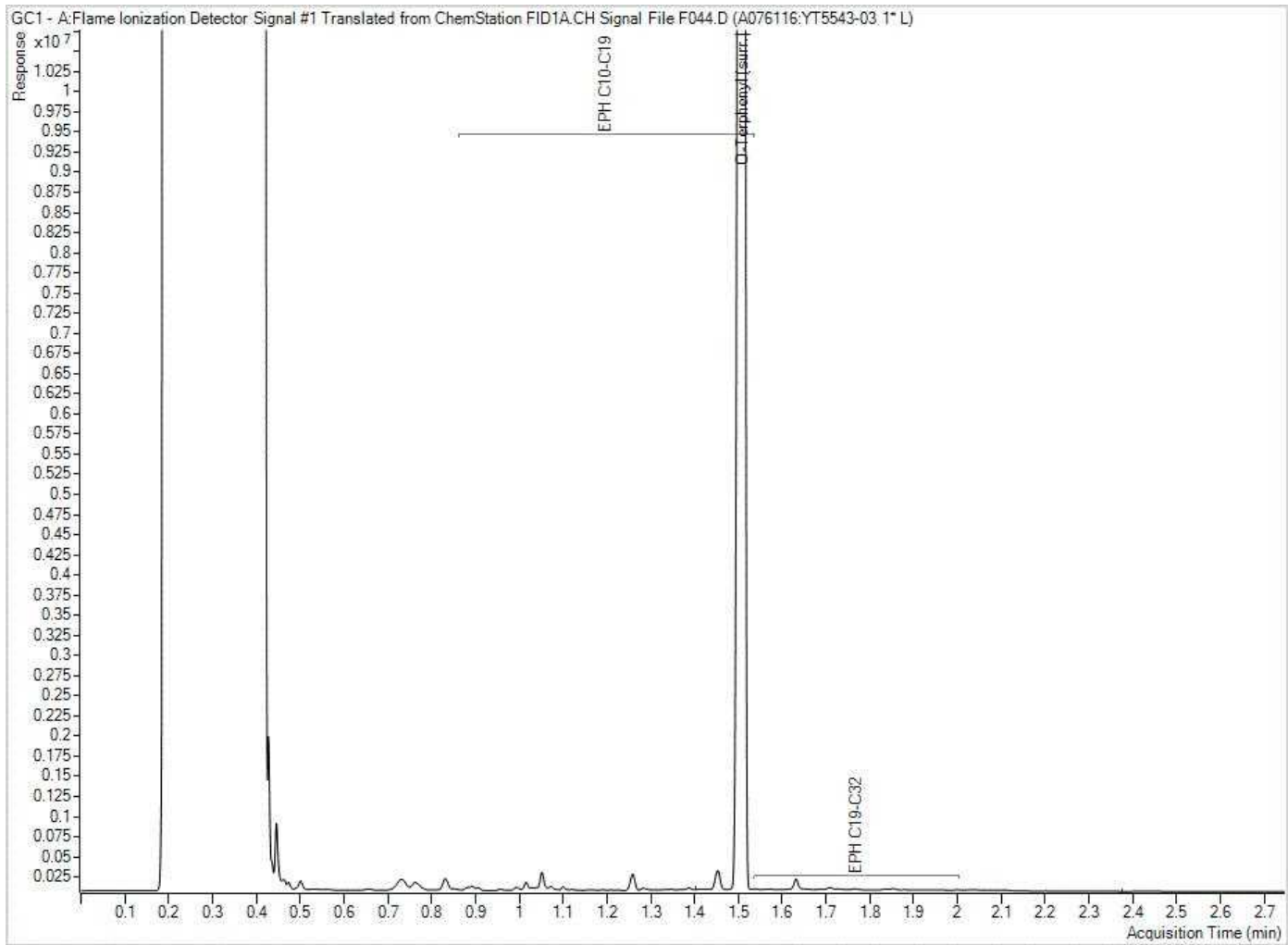
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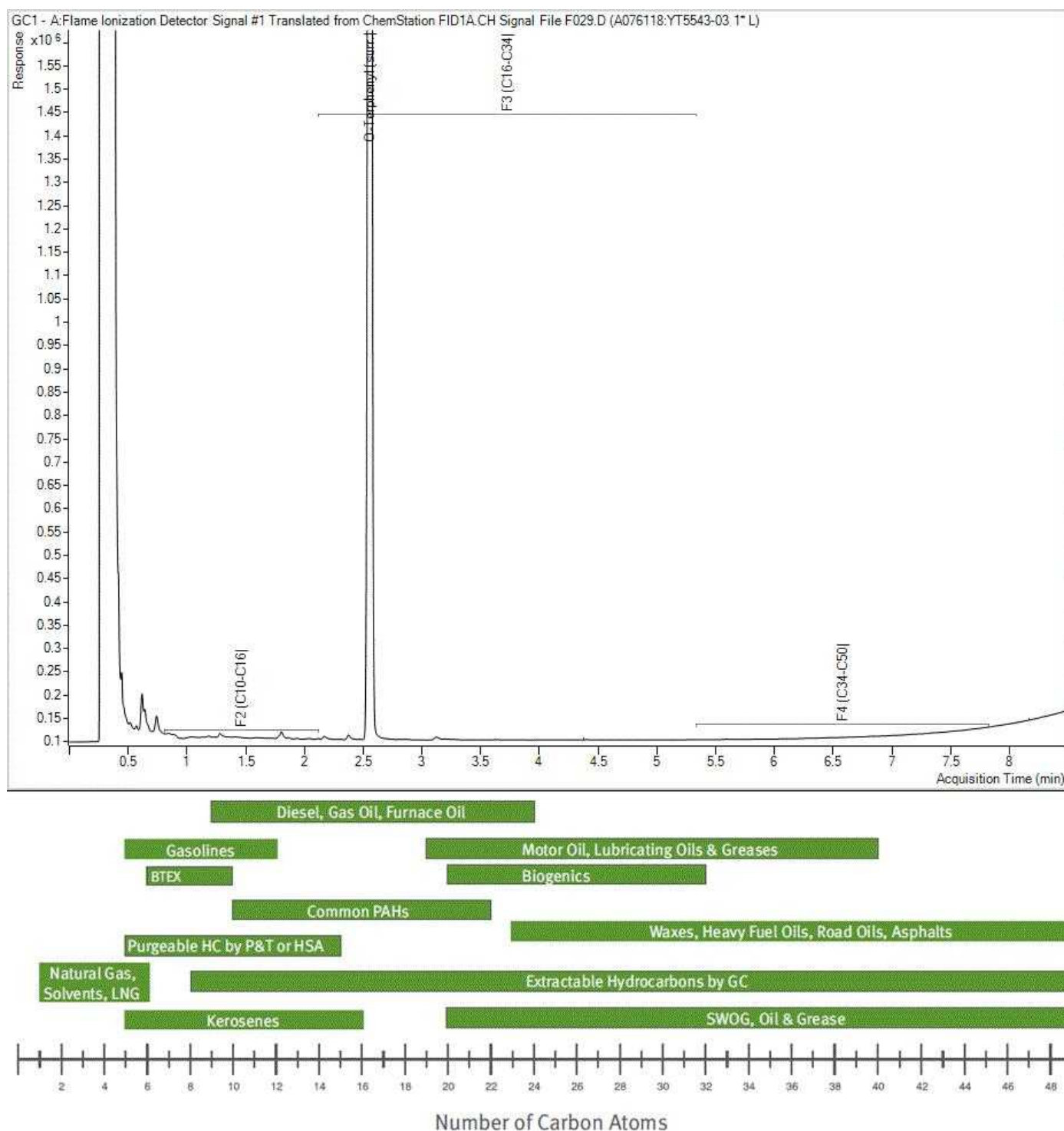
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EPH in Water when PAH required Chromatogram



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F2-F4 in Water when PAH required Chromatogram



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**KEYSTONE ENVIRONMENTAL LTD.
GENERAL TERMS AND CONDITIONS FOR SERVICES**

KEYSTONE ENVIRONMENTAL LTD.
GENERAL TERMS AND CONDITIONS FOR SERVICES

All work and/or professional services described in the Proposal or Work Plan prepared by Keystone Environmental Ltd. ("Keystone Environmental" shall be performed in accordance with these General Terms and Conditions. The Proposal or Work Plan stipulate the scope of work/services, schedule, compensation, and any other specified conditions.

1. COMPENSATION

The fees for services provided by Keystone Environmental consists of: (1) an hourly billing rate for any staff member working on the project, except for lump-sum or percent of construction fee basis projects; (2) reimbursement of direct expenses; (3) reimbursement of subcontractor's and other special costs; and (4) use and rental charges for equipment. Invoices will be issued monthly for payment, unless other arrangements have been agreed upon in writing. Invoices are due in 30 days of the invoice date. Subcontractor billings are payable upon presentation. A finance charge of 1.5% per month (19.6% per annum) may be charged on past due accounts. Payment of Keystone Environmental invoices shall be in Canadian currency.

Payment shall be provided by money transfer, cheque, or with prior approval by Keystone Environmental, Master Card or Visa. A surcharge of 3% may be added to payments by MasterCard or Visa if the invoice amount exceeds \$6,000.00. Fees shall be paid in advance if stipulated in the proposal and/or work plan.

Keystone Environmental may, at its sole discretion, withhold work products at any time that invoices are past due and until invoices are paid in full. Keystone Environmental may also, at its sole discretion, stop work at any time invoices are past due.

In the event that Keystone Environmental shall take collection or legal action for the recovery of the payment of outstanding invoices, Keystone Environmental shall be entitled to recover all collection and legal fees and expenses incurred by it with respect to such action.

All time, including traveling hours, spent on the project by Keystone Environmental personnel will be invoiced. Overtime incurred by and paid to personnel may be invoiced at a rate of 1.2 times the hours worked, if so stipulated in the proposal and/or work plan. Unless a lump-sum or percent of construction fee basis is used, the fee estimate presented in the proposal and/or work plan is for budgetary purposes only and is not a fixed lump-sum or maximum fee. The estimated fee does not include GST/HST which will be charged in addition to the professional fees, expenses and disbursements. The estimated fee will not be exceeded without prior written approval from CLIENT. Estimated fees may be exceeded as a result of changed conditions outside the control of Keystone Environmental and/or change in scope of work.

REIMBURSABLE EXPENSES

(a) The following expenses will be invoiced at cost plus 10% to cover overhead:

- (i) Travel expenses including airfare, rental vehicles, personal vehicles at \$0.58/km for less than 5,000 kms and \$0.52/km for 5,000 kms and over, subsistence and lodging.
- (ii) Costs for expendable sampling and field supplies.
- (iii) All project-related purchases including subcontractor costs, laboratory charges, material fees, duties, deposits, equipment purchases, third party equipment rentals and other outside costs incurred specifically for the project.

(b) The following expenses will be invoiced at the rates which follow:

- (i) Field and reproduction equipment in accordance with our Equipment Rate Schedule.
- (ii) Engineering and specialty software services will be invoiced at \$20.00/connect hour as stipulated in the proposal and/or work plan

Technology & Support fee equal to three percent (3%) of all labour fees will be charged to cover communications costs, including telephone, cellular data, mailing and courier, creating electronic PDF reports, electronic file transfer, project administration and accounting labour, secure electronic professional signatures and seals.

2. **INDEPENDENT CONTRACTOR**

Keystone Environmental shall be an independent contractor and shall be fully independent in performing the services and shall not act or hold themselves out as an agent, servant or employee of CLIENT.

3. **KEYSTONE ENVIRONMENTAL'S PERFORMANCE**

Keystone Environmental shall perform the services with the standard of care that is in accordance with generally accepted professional practices, for services of a similar nature and time.

In the event Keystone Environmental's professional performance, fails to conform to the above stated standard, Keystone Environmental shall, at its discretion and its expense, proceed expeditiously to reperform the nonconforming, or upon the mutual agreement of the parties, refund the amount of compensation paid to Keystone Environmental for such nonconforming work. In no event shall Keystone Environmental be required to bear the cost of gaining access in order to perform its obligations.

4. **CLIENT WARRANTY**

CLIENT warrants that it will provide to Keystone Environmental all information regarding the site, including underground structures and utilities, facilities, buildings, and land involved with the work and that such information shall be true and correct and that it has title to or will provide right of entry or access to all property necessary to perform the work. The Client shall provide all licenses and permits required for the work, unless otherwise stated in the proposal and/or work plan,

5. **INDEMNITY**

a. Subject to the limitations of Section 7 below, Keystone Environmental agrees to indemnify, and hold harmless CLIENT (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, and the costs and expenses incident thereto (including reasonable legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders, to the extent caused by or arising out of: (i) Keystone Environmental's errors or omissions or (ii) negligence on the part of Keystone Environmental in performing services hereunder.

b. CLIENT agrees to indemnify and hold harmless Keystone Environmental (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, and the costs and expenses incident thereto (including legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders, caused by, or arising out of in whole or in part: (i) any negligence or willful misconduct of CLIENT, (ii) any breach by CLIENT of any warranties or other provisions hereunder, (iii) any condition including, but not limited to, contamination existing at the site, or (iv) contamination of other property arising or alleged to arise from or be related to the site, provided however, that such indemnification shall not apply to the extent any losses, damages, liabilities or expenses result from or arise out of: (i) any negligence or willful misconduct of Keystone Environmental; or (ii) any breach of Keystone Environmental of any warranties hereunder.

6. **LIMITATION OF LIABILITY**

Keystone Environmental's total liability, whether arising from or based upon breach of professional standard of care, breach of contract, tort, including Keystone Environmental's negligence, strict liability, indemnity or any other cause of basis whatsoever, is expressly limited to the limits of Keystone Environmental's insurance coverage. This provision limiting Keystone Environmental's liability shall survive the termination, cancellation or expiration of any contract resulting from this Proposal and the completion of services thereunder. After three (3) years of completion of Keystone Environmental's services, any legal costs arising to defend third party claims made against Keystone Environmental in connection with the project defined in the Proposal or Agreement will be paid in full by the CLIENT.

7. **INSURANCE**

Keystone Environmental, during performance of this Agreement, will at its own expense carry Worker's Compensation Insurance within limits required by law; Comprehensive General Liability Insurance for bodily injury and for property damage; Professional Liability Insurance for errors, omissions and negligence; and Comprehensive Automobile Liability Insurance for bodily injury and property damage. At CLIENT'S request, Keystone Environmental shall provide a Certificate of Insurance demonstrating Keystone Environmental's compliance with this section. Such Certificate of Insurance shall provide that said insurance shall not be cancelled until at least ten (10) days after written notice to CLIENT.

8. **CONFIDENTIALITY**

Each party shall retain as confidential all information and data furnished to it by the other party which relate to the other party's technologies, formulae, procedures, processes, methods, trade secrets, ideas, improvements, inventions and/or computer programs, which are designated in writing by such other party as confidential at the time of transmission and are obtained or acquired by the receiving party in connection with work or services performed subject to this Proposal or Agreement, and shall not disclose such information to any third party.

However, nothing herein is meant to prevent nor shall it be interpreted as preventing either Keystone Environmental or CLIENT (the Parties) from disclosing and/or using said information or data; (i) when the information or data is actually known to the receiving Party before being obtained or derived from the transmitting Party; or (ii) when the information or data is generally available to the public without the receiving Party's fault; or (iii) or (iii) where a written release is obtained by the receiving Party from the transmitting Party; or (iv) as required by law.

9. **PROTECTION OF INFORMATION**

Keystone Environmental specifically disclaims any warranties expressed or implied and does not make any representations regarding whether any information associated with conducting the work, including the report, can be protected from disclosure in responses to a request by a federal, provincial or local government agency, or in response to discovery or other legal process during the course of any litigation involving Keystone Environmental or CLIENT. Should Keystone Environmental receive such request from a third party, it will immediately advise CLIENT.

10. **ASSIGNMENT/SUBCONTRACT**

Neither party hereto shall assign this Agreement or any part thereof nor any interest therein without the prior written approval of the other party hereto except as herein otherwise provided. Keystone Environmental shall not subcontract the performance of any work hereunder without the written approval of CLIENT. Subject to the foregoing limitation, the Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of the parties hereto.

11. **ESTIMATES**

To the extent the work requires Keystone Environmental to prepare opinions of probable cost, for example, opinions of probable cost of construction, such opinions shall be prepared in accordance with generally accepted engineering practice and procedure. However, Keystone Environmental has no control over construction costs, competitive bidding and market conditions, costs of financing, acquisition of land or rights-of-way and Keystone Environmental does not guarantee the accuracy of such opinion of probable cost as compared to actual costs or contractor's bid.

12. **DELAYED AGREEMENTS AND OBLIGATIONS**

The performance by Keystone Environmental of its obligations under this Agreement depends upon the CLIENT performing its obligations in a timely manner and cooperating with Keystone Environmental to the extent reasonably required for completion of the Work. Delays by CLIENT in providing information or approvals or performing its obligations set forth in this Agreement may result in an adjustment of contract price and schedule.

13. **CONSTRUCTION PHASE**

To the extent the work is related to or shall be followed by construction work not performed by Keystone Environmental, Keystone Environmental shall not be responsible for the construction means, methods, techniques, sequences or procedures of construction contractors, or the safety precautions and programs incident thereto, and shall not be responsible for the construction contractor's failure to perform the work in accordance with the contract documents, drawings and specifications. Keystone Environmental will not direct, supervise or control the work of the CLIENT'S contractors or the CLIENT'S subcontractors.

14. **DOCUMENTATION, RECORDS, AUDIT**

Keystone Environmental when requested by CLIENT, shall provide CLIENT with copies of all documents relating to the service(s) of work performed. Keystone Environmental shall retain true and correct records in connection with each service and/or work performed and all transactions related thereto and shall retain all such records for twelve (12) months after the end of the calendar year in which the last service pursuant to this Agreement was performed. CLIENT, at its expense and upon reasonable notice, may from time to time during the term of this Agreement, and at any time after the date the service(s) were performed up to twelve (12) months after the end of the calendar year in which the last service(s) were performed, audit records of Keystone Environmental in connection with all costs and expenses which it was invoiced.

15. REPORTS, DOCUMENTS AND INFORMATION

All field data, field notes, laboratory test data, calculations, estimates and other documents prepared by Keystone Environmental in performance of the work shall remain the property of Keystone Environmental. If required as part of the work, Keystone Environmental shall prepare and provide to the CLIENT a report summarizing the work, detail design, specifications and drawings, as the case may be (CLIENT Report), with electronic secure signature and professional seal. CLIENT shall use the report for its internal purposes and only for those purposes consistent with that which the services and work were performed. , Keystone Environmental shall retain an electronic copy of such CLIENT Report which shall be deemed the original and true copy of the report..

The CLIENT Report shall not be changed in any way without the prior written consent of Keystone Environmental. The Client accepts full responsibility for any changes made to the report without the prior written consent of Keystone Environmental and shall indemnify and hold harmless Keystone Environmental from any claims arising from use of such changed reports.

16. LIMITED USE OF REPORT

Any report prepared as part of the work will be prepared solely for the internal use of CLIENT. Unless otherwise prior to agreed by Keystone Environmental in writing, CLIENT agree that third parties are not to rely upon the report.

17. SAMPLE MANAGEMENT

CLIENT shall be the owner of all samples collected by Keystone Environmental from the project site . Keystone Environmental or its laboratory sub-contractor will store such samples in a professional manner in a secure area for the period of time necessary to complete the project. Upon completion of the project, Keystone Environmental disposes of the samples in a lawful manner.

18. ACKNOWLEDGMENT AND RECOGNITION OF RISK

CLIENT recognizes and accepts the work to be undertaken by Keystone Environmental may involve unknown undersurface conditions and hazards. CLIENT further recognizes that environmental, geologic, hydrological, and geotechnical conditions can and may vary from those encountered by Keystone Environmental at the times and locations where it obtained data and information and that limitations on available data may result in uncertainty with respect to the interpretation of these conditions. CLIENT recognizes that the performance of services hereunder or the implementation of recommendations made by Keystone Environmental in completing the work required may alter the existing site conditions and affect the environment in the site area.

Unknown undersurface conditions, including underground utility services, tanks, pipes, cables and other works (Underground Works) may be present at the site. Keystone Environmental will conduct utility locates to obtain available information regarding the location of Underground Works in accordance with industry practice. Utility locates are not a guarantee of the location of, or existence of, Underground Works and as a result damage to Underground Works may occur. Keystone Environmental relies on utility locates and Client provided "as-built" and record drawings to determine the location and existence of Underground Works. CLIENT recognizes that the use of utility locates is not a guarantee or warranty that Underground Works may not be damaged and acknowledges that Keystone Environmental is not responsible for any damage caused to Underground Works or the repair of such damage or any resulting or related damage and any costs related to such damage.

19. DISPOSAL OF CONTAMINATED MATERIAL

It is understood and agreed that Keystone Environmental is not, and has no responsibility as, a generator, operator or storer of pre-existing hazardous substances or wastes found or identified at work sites. Keystone Environmental shall not directly or indirectly assume title to such hazardous or toxic substances and shall not be liable to third parties.

CLIENT will indemnify and hold harmless Keystone Environmental from and against all incurred losses, damages, costs and expenses, including but not limited to attorneys' fees, arising or resulting from actions brought by third parties alleging or identifying Keystone Environmental as a generator, operator, storer or owner of pre-existing hazardous substances or wastes found or identified at work sites.

20. SUSPENSION OR TERMINATION

In the event the work is terminated or suspended by CLIENT prior to the completion of the services contemplated hereunder, Keystone Environmental shall be paid for: (i) the services rendered to the date of termination or suspension, (ii) the demobilization costs, and (iii) the costs incurred with respect to non-cancelable commitments.

21. FORCE MAJEURE

Neither party shall be responsible or liable to the other for default or delay in the performance of any of its obligations hereunder (other than the payment of money for services already rendered) caused in whole or in part by strikes or other labour difficulties or disputes; governmental orders or regulations; war, riot, fire, explosion; acts of God; acts of omissions of the other party; any other like causes; or any other unlike causes which are beyond the reasonable control of the respective party.

In the event of delay in performance due to any such cause, the time for completion will be extended by a period of time reasonably necessary to overcome the effect of the delay. The party so prevented from complying shall within a reasonable time of its knowledge of the disability advise the other party of the effective cause, the performance suspended or affected and the anticipated length of time during which performance will be prevented or delayed and shall make all reasonable efforts to remove such disability as soon as possible, except for labour disputes, which shall be solely within said party's discretion. The party prevented from complying shall advise the other party when the cause of the delay or default has ended, the number of days which will be reasonably required to compensate for the period of suspension and the date when performance will be resumed. Any additional costs or expense accruing or arising from the delaying event shall be solely for the account of the CLIENT.

22. NOTICE

Any notice, communication, or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or sent by facsimile, wire, or certified mail, return receipt requested, postage prepaid, to the address of the party set forth in the Authorization for Work, or to such address for either party as the party may be written notice designate.

23. GOVERNING LAW

This Agreement shall be governed by and interpreted pursuant to the laws of the Province of British Columbia.

24. HEADINGS AND SEVERABILITY

Any heading proceeding the text of sections hereof is inserted solely for convenience or reference and shall not constitute a part of the Agreement and shall not affect the meanings, context, effect or construction of the Agreement. Every part, term or provision of this Agreement is severable from others. Notwithstanding any possible future finding by duly constituted authority that a particular part, term or provision is invalid, void or unenforceable, this Agreement has been made with the clear intention that the validity and enforceability of the remaining parts, terms and provision shall not be affected thereby.

25. ENTIRE AGREEMENT

The terms and conditions set forth herein constitute the entire Agreement and understanding or the parties relating to the provision of work or services by Keystone Environmental to CLIENT, and merges and supersedes all prior agreements, commitments, representation, writings, and discussions between them and shall be incorporated in all work orders, purchase orders and authorization unless otherwise so stated therein. The terms and conditions and details of this proposal and/or work plan may be amended only by written instrument signed by both parties.